

28 JUL 1994

SOUTH PACIFIC COMMISSION

TWENTY-FIFTH REGIONAL TECHNICAL MEETING ON FISHERIES

(Noumea, New Caledonia, 14–18 March 1994)

REPORT

676/94

Noumea, New Caledonia
1994

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Original text: English

South Pacific Commission Cataloguing-in-publication data

Regional Technical Meeting on Fisheries (25th : 1994 : Noumea)
Report

1. Fisheries --Oceania--Congresses I. South Pacific
Commission

639.2028
ISBN 982-203-376-1

AACR2

CONTENTS

	Page
I. INTRODUCTION	1
II. AGENDA	3
III. SUMMARY OF DISCUSSIONS	5
IV. RECOMMENDATIONS	31
V. DOCUMENTS PRESENTED TO THE MEETING	33
VI. LIST OF PARTICIPANTS	35
Annex 1: Report of Technical Sessions	51

ACRONYMS

ACIAR	Australian Centre for International Agricultural Research
AIDAB	Australian International Development Assistance Bureau
AIMS	Australian Institute of Marine Science
CFP	Coastal Fisheries Programme (SPC)
CPUE	Catch per unit of effort
CRGA	Committee of Representatives of Governments and Administrations (SPC)
DSFDP	Deep Sea Fisheries Development Project (SPC)
DWFN	Distant Water Fishing Nation
EC	European Community
EEZ	Exclusive Economic Zone
ER	Exploitation Rates
EVAAM	Etablissement pour la valorisation des activités aquacoles et maritimes
FAD	Fish Aggregation Device
FFA	Forum Fisheries Agency
FFC	Forum Fisheries Committee
FHPP	Fish Handling and Processing Project (SPC)
GPS	Global Positioning System
ICFMP	Integrated Coastal Fisheries Management Project (SPC)
ICLARM	International Center for Living Aquatic Resources Management
ICOD	International Centre for Ocean Development
IFRP	Inshore Fisheries Research Project (SPC)
IMR	Institute of Marine Resources (USP)
MTC	Minimum terms and Conditions
ODA	Overseas Development Administration (UK)
OFDC	Overseas Fisheries Development Council
OFCF	Overseas Fisheries Cooperation Foundation (Japan)
OFF	Oceanic Fisheries Programme (SPC)
ORSTOM	Institut français de recherche scientifique pour le développement en coopération
PIMR	Pacific Islands Marine Resources
PIMRIS	Pacific Islands Marine Resources Information System
PIN	Pacific Island Nation
PTRP	Philippines Tuna Research Project
ROC	Republic of China
ROK	Republic of Korea
RPFC	Regional Post-harvest Fisheries Centre
RFTP	Regional Fisheries Training Project (SPC)
RTMF	Regional Technical Meeting on Fisheries (SPC)
RTTP	Regional Tuna Tagging Project (SPC)
SCTB	Standing Committee on Tuna and Billfish
SICHE	Solomon Islands College of Higher Education
SPAR	South Pacific Albacore Research Group
SPC	South Pacific Commission
SPOCC	South Pacific Organisations Coordinating Committee
SPOT	Satellite pour l'observation de la terre (Earth observation satellite)
SPREP	South Pacific Regional Environment Programme
SPRTRAMP	South Pacific Regional Tuna Resource Assessment and Monitoring Programme (SPC)
SSAP	Skipjack Survey and Assessment Programme (SPC)
TBAP	Tuna and Billfish Assessment Programme (SPC)
UK	United Kingdom
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
USP	University of the South Pacific
WPFCC	Western Pacific Fisheries Consultative Committee

WPRFMC	Western Pacific Regional Fishery Management Council
WPYRG	Western Pacific Yellowfin Research Group
WTP	Western Tropical Pacific

I. INTRODUCTION

The SPC Regional Technical Meeting on Fisheries provides the only opportunity for senior fisheries officers from all SPC member countries and territories to meet and discuss technical aspects of fisheries development, and, through the exchange of experience, ideas and information, to identify mutual needs and problems which can best be met by a regional approach. The meeting assists the work of the Commission's Fisheries Programme by reviewing and commenting on existing or proposed activities, formulating new initiatives where required, and making recommendations for Secretariat action for transmission to the Committee of Representatives of Governments and Administrations and, ultimately, the South Pacific Conference. The Thirty-second South Pacific Conference (Fiji, 1992) approved that this meeting be held biennially, and be incorporated into the Commission's regular work programme and budget on this basis.

As a result of this regular process of review and discussion, the work of the SPC Fisheries Programme is able to retain its relevance to the evolving needs of Pacific Island countries and territories. The guidance provided over the years by successive Regional Technical Meetings on Fisheries has been an essential element in developing the wide range of activities that are undertaken by the Fisheries Programme, which is now the South Pacific Commission's largest single programme.

The Twenty-fifth Regional Technical Meeting on Fisheries was held at South Pacific Commission headquarters, Noumea, New Caledonia, from 14 to 18 March 1994.

II. AGENDA

- 1. Opening formalities**
 - 1.1 Official opening
 - 1.2 Administrative arrangements
 - 1.3 Adoption of agenda and timetable
 - 1.4 Signing of the South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPRTRAMP) funding agreement
- 2. Fisheries Programme administration**
 - 2.1 Report by the Fisheries Programme Manager
 - Staff issues
 - Financial issues
 - Relations with other organisations
 - Review of regional institutional arrangements in the marine sector
 - Action taken in response to 24th RTMF recommendations
- 3. Technical session 1**
 - 3.1 Review of Western Pacific tuna fisheries
 - 3.2 Status of tuna stocks in the Western Pacific
- 4. Oceanic Fisheries Programme overview**
 - 4.1 Overview
 - Statistics and monitoring
 - Biological research
 - Assessment and modelling
 - Reporting and liaison
 - Albacore Research Project
 - Philippines Tuna Research Project
 - The Oceanic Fisheries Programme Computer System
 - 4.2 Report on the Sixth Meeting of the Standing Committee on Tuna and Billfish (SCTB 6)
 - 4.3 Report on the Third Meeting of the Western Pacific Yellowfin Research Group (WPYRG 3)
 - 4.4 Report on the Fifth Meeting of the South Pacific Albacore Research Group (SPAR 5)
- 5. Technical session 2**
 - 5.1 South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPRTRAMP)
 - 5.2 Observer programmes
- 6. Technical session 3**
 - 6.1 Status of Pacific Island inshore fisheries
- 7. Coastal Fisheries Programme overview**
 - 7.1 Overview
 - 7.2 Capture Section
 - 7.3 Post-harvest Section
 - 7.4 Training Section
 - 7.5 Resource Assessment Section
 - 7.6 Information Section
 - 7.7 Report of PIMRIS Steering Committee
- 8. Technical Session 4**
 - 8.1 Starting up a small-scale tuna longlining project – a case study from Papua New Guinea
 - 8.2 Development of the SPC/Indian Ocean FAD raft – an inexpensive, storm-resistant raft for the Pacific Islands

9. **Statements from other organisations**
10. **Review of regional institutional arrangements in the marine sector**
11. **Quarantine protocols for marine species**
12. **Technical session 5**
- 12.1 **Processing novel tuna products in the Pacific**
13. **Aquaculture**
14. **Timing of next meeting**
15. **Other business**
16. **Adoption of report and close of meeting**

III. SUMMARY OF DISCUSSIONS

AGENDA ITEM 1 – OPENING FORMALITIES

1.1 Official Opening

1. Mr Sautia Maluofenua, Representative of Tuvalu, offered a short prayer to begin the meeting.
2. The SPC Secretary-General, Ati George Sokomanu, welcoming the delegates to the 25th RTMF, outlined the economic importance of marine resources for Pacific Island states. He described the work of SPC's Oceanic Fisheries Programme in providing member countries with scientific advice to enable the sustainable development of their tuna resources. He stated that there was also a need for the development and management of the region's coastal resources in light of unsustainable fishing practices in both the subsistence and commercial fishing sectors. The Secretary-General stressed the importance the Secretariat placed on the deliberations of RTMF in guiding the activities of the Fisheries Programmes over the next two years. He thanked the donor community for its extra-budgetary support of SPC's Fisheries Programme, making special mention of the funding provided by the Commission of the European Communities. He then formally declared the Meeting open.
3. On behalf of the Meeting, Mr Ueta Fa'asili of Western Samoa thanked the Secretary-General for his warm welcome, congratulating him on his appointment to the position of Secretary-General of SPC. He stressed the significant role of RTMF in fostering communication between fisheries agencies in the region, and the important advice provided by SPC's fisheries programmes.

1.2 Administrative arrangements

4. In accordance with the procedure of rotating the chair alphabetically between member countries, the SPC Fisheries Programme Manager invited Mr Rufo Lujan of Guam to be Chairperson of RTMF 25. Mr Lujan thanked the Chairperson of RTMF 24, Mr Stephen Yen of French Polynesia, and the Secretariat staff who helped compile that meeting's report. Mr Maruia Kamatie of Kiribati was appointed Vice-Chairperson and Chairperson of the Drafting Committee for RTMF 25. The Representatives of France and Papua New Guinea volunteered to be on a Drafting Committee with Secretariat staff.

1.3 Adoption of Agenda and Timetable

5. The Chairman outlined the Agenda for the meeting, which comprised morning plenary sessions to review Fisheries Programme activities and afternoon technical sessions on specific topics. The Fisheries Programme Manager suggested that quarantine protocols for marine species be considered on Thursday afternoon, moving aquaculture to Friday morning. The Meeting adopted the Agenda with the amendments.

1.4 Signing of South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPRTRAMP) Funding Agreement

6. The Meeting witnessed the signing ceremony for the South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPRTRAMP) funded by the Commission of the European Communities. The Secretary-General thanked the Commission for its five-year commitment to supporting the Project, noting that the important bridging finance it had provided to RTTP would allow for a smooth transition between RTTP and SPRTRAMP. Mr George Gwyer, Delegate of the

Commission of the European Communities in Solomon Islands, thanked the Secretary-General for his kind words. He stressed the importance of monitoring the status of the region's tuna resources to ensure that they are fished sustainably, and the need to secure a fair return for PINs from the countries exploiting those resources.

AGENDA ITEM 2 – FISHERIES PROGRAMME ADMINISTRATION

2.1 Report by the Fisheries Programme Manager

7. The Fisheries Programme Manager outlined the activities of the Fisheries Programme (Working Paper 1). He described the Programme's new structure, which now comprised the Oceanic Fisheries Programme (OFP) and the Coastal Fisheries Programme (CFP).

8. He then reviewed the programme's funding and staffing situation. He acknowledged the many donors who had provided the programme with extra-budgetary funding, and noted that, for the first time, a Pacific Island member country, Papua New Guinea, had made an extra-budgetary contribution to OFP. Extra-budgetary financing now accounted for over 90 per cent of the work programme. The Programme's growing reliance on extra-budgetary funding from a variety of sources was creating complex budgeting and reporting requirements. The reassignment of core funding from DSFDP had impeded its activities. However, long-term funding commitments (e.g. by Australia) were helping the Programme plan future activities.

9. The Fisheries Programme Manager detailed action taken by the Secretariat on recommendations made by RTMF 24, directing discussion on several recommendations to appropriate agenda items.

10. The Representative of Western Samoa congratulated the Fisheries Programme on its achievements over the past 18 months. He noted that many of the recommendations dealt with the time-consuming task of finding funding for the programmes approved by RTMF. He asked the Meeting to consider reviewing the Programme's priorities, and suggested that Pacific Island member countries should be able to develop programmes at a national level that would build on those run by the Commission at the regional level.

11. The Representative of France thanked the Secretariat for the valuable work done by the Fisheries Programme. France would continue to support SPC and would seek ways of funding the Fisheries Programme for the next two years. He congratulated Papua New Guinea on its extra-budgetary contribution to the OFP. He said that France supported Recommendation 20 on holding RTMF meetings biennially, but suggested that the Meeting should consider how the Secretariat might utilise small meetings of specialists to consider urgent matters arising between RTMFs.

12. The Representative of French Polynesia supported the recommendation to hold RTMF meetings biennially because of escalating costs and because of the two- or three-year time-span of many projects. Referring to Recommendation 13 of RTMF 24, he stated that unfortunately French Polynesia had not yet commenced the pearl marketing study mentioned by the Fisheries Programme Manager.

13. The Representative of Papua New Guinea supported the comments by the Representatives of France and French Polynesia on the need to hold RTMF biennially. He suggested that the Fisheries Programme Manager might travel to each member country to brief them on Fisheries Programme activities in the years between RTMFs.

14. The Representative of Western Samoa accepted the need for biennial meetings, but suggested that RTMF first consider the reasons for ceasing annual meetings and the relationship between CRGA, SCTB and the various research groups.

15. The Fisheries Programme Manager confirmed that funding was the key reason for RTMF 24 recommending biennial meetings. He asked the Meeting to consider other mechanisms for ensuring the programme's implementation; for example, urgent recommendations arising out of the meetings of technical committees could be dealt with by circulating these among fisheries administrations for their endorsement during the intervening year.

16. The Representative of Australia congratulated Papua New Guinea on its contribution to the TBAP, and welcomed the elimination of the historical budget deficit of TBAP (now retitled OFP). He noted that reducing the frequency of RTMF meetings would delay review of fisheries programme components and funding needs, with the result that more serious funding deficiencies might arise inter-sessionally unless a mechanism was available to redirect funds. In that regard he drew attention to a reference in the RTMF 24 Report (paragraph 14) to priority setting and asked whether the Secretariat had a system for prioritising the allocation of core funds.

17. In response to Australia's question, the Fisheries Programme Manager said that there had been a poor response to a questionnaire circulated by the Secretariat on prioritisation of SPC programmes. Consequently, he felt that this survey was a poor yard-stick of the importance that Pacific Island member countries attached to fisheries programmes. However, a similar exercise carried out by the Forum Secretariat had prioritised Fisheries as highest among the sectoral components of Pacific Island countries' national development aspirations.

18. The Representative of French Polynesia indicated that it had been suggested at the last SPAR meeting that these meetings be held on a biennial basis.

19. The Representative of Guam thanked the Secretariat for the opportunity to participate in the SPC/Nelson Fisheries Officers Training course, which Guam had found particularly useful.

20. The Representative of Australia suggested that, like the Report of RTMF 24 (paragraph 18), the Meeting's report might highlight the importance of the Fisheries Programme to the region. The Meeting reiterated that delegates should convey to their countries' representatives to CRGA and the South Pacific Conference the importance of the Fisheries Programme to in-country and regional fisheries research and management.

AGENDA ITEM 3 — TECHNICAL SESSION 1

3.1 Review of Western Pacific tuna fisheries

21. The Oceanic Fisheries Coordinator presented an overview of developments in Western Pacific tuna fisheries in recent years. Annex 1 includes the report of this session. At the Secretariat's invitation, the Deputy Director of FFA then commented on regional surveillance programmes and management arrangements.

3.2 Status of tuna stocks in the Western Pacific

22. The Oceanic Fisheries Coordinator reviewed the status of yellowfin, skipjack, bigeye and albacore tuna in the Western Pacific. The assessments presented in this session were largely based on the results of SPC's RTTP and on catch and effort data held in the Regional Tuna Fisheries Database. Annex 1 includes the report of this session.

AGENDA ITEM 4 – OCEANIC FISHERIES PROGRAMME OVERVIEW

4.1 Overview

23. The Oceanic Fisheries Coordinator reviewed the activities of OFP, outlining its funding sources, structure, functions and activities since August 1992 (Working Paper 2). The Fisheries Statistician detailed the work of OFP's Statistics and Monitoring Project. This work included the processing of logsheet data, installation and maintenance of in-country databases, and support of port-sampling programmes. The Fisheries Statistician then reviewed the status of data provision by each major tuna fishing nation in the region. Data provision had improved significantly over the past few years, with acquisitions of data from American purse seiners, Japanese purse seiners and longliners and, notably, Taiwanese longliners. The Statistics and Monitoring Project continued to seek data from Korea on its purse-seine and longline activities.

24. The Representative of Australia noted that the report of RTMF 24 asked participants to raise problems with data provision, especially those involving Korea, at bilateral negotiations. He asked the meeting whether further effort should be directed towards obtaining these data from Korea. The Oceanic Fisheries Coordinator pointed out that Korea was planning to participate in the 1994 SCTB and that this would provide an opportunity to promote data provision with Korea. Furthermore, the establishment of transshipment monitoring programmes had contributed to improved logsheet coverage (although this would not help reconstruction of historical data). The Fisheries Statistician indicated that Korean longline data up to 1987 had been published by the Korean National Fisheries Research and Development Agency, and that these data were included in the Standing Committee database. The Koreans also processed their purse-seine data, which dated back to 1985. It was expected that Korean purse-seine and recent longline data would be provided for the Standing Committee database in the near future.

25. The Representative of Papua New Guinea informed the Meeting that his country continued to raise the matter of data acquisition at every bilateral negotiation with Korea and urged other member countries to do the same.

26. The Representative of Western Samoa noted that one of RTMF's intentions in establishing the SCTB was to provide a forum in which DWFNs would be comfortable with providing data on their tuna fishing activities. He also mentioned that FFA members and DWFNs were soon to hold a high-level meeting. He suggested that RTMF participants should ensure that their delegates to that meeting were aware of the importance of providing these data.

27. The Meeting agreed that, at this stage, there was no need to make a specific recommendation on provision of data on tuna fishing activities by DWFNs.

28. The Representatives of French Polynesia and Papua New Guinea thanked the Statistics and Monitoring Project for its work in developing in-country databases.

29. The Representative of Papua New Guinea informed the Meeting that his country was upgrading its own capabilities to establish and support this type of database.

30. The Oceanic Fisheries Coordinator then outlined the activities of OFP's Biological Research Project and Assessment and Modelling Project. These included a review of by-catch and discards, tagging-based stock assessments, development of movement models and national fisheries assessments.

31. The Oceanic Fisheries Coordinator briefly described the results of the Philippines Tuna Research Project. The project was relevant to many member countries, such as Palau and Federated States of Micronesia, in confirming that this area needed to be considered when the status of Western Pacific tuna stocks was assessed. It also provided an interesting case-study of a tuna fishery

exposed to much higher levels of exploitation than had been observed in other areas of the Western Pacific.

32. The Representative of Solomon Islands commented on OFP activities. He stressed the critical role that all participants played in communicating to their governments the significance of the work of OFP in monitoring fishery developments and understanding the status of the stocks. He reiterated his Government's appreciation for OFP's National Fishery Assessment of Solomon Islands tuna resources. He also recognised the importance of the work done by AIMS on billfish in the Coral Sea and thanked AIMS and the funding donor (ACIAR) for this useful work.

33. The Representative of Kiribati also thanked OFP for its National Fishery Assessment, and expressed enthusiasm for the interactions study involving Kiribati.

34. The Deputy Director of FFA expressed the FFA Secretariat's appreciation of the work done by OFP. He highlighted areas of FFA – OFP cooperation, such as observer programmes and the vessel monitoring project, and acknowledged the valuable advice provided by OFP at various bilateral and multilateral negotiations.

35. Following the overview of the Oceanic Fisheries Programme by the Oceanic Fisheries Coordinator the Meeting made the following recommendations:

Recommendation No. 1

The Meeting noted that arrangements were in progress for implementation of the review of the roles of those South Pacific regional organisations whose mandate involves marine resource development and management. Recognising the broad regional focus of the Oceanic Fisheries Programme and its importance in relation to the continuing provision of scientific advice regarding regional tuna fisheries, the Meeting **recommended** that the Secretariat take appropriate action to ensure that the institutional review incorporates consideration of the programme's institutional arrangements, to ensure that programme efficiency and cost-effectiveness are maximised in the long term.

Recommendation No. 2

The Meeting noted that attempts to secure longer-term funding commitments to support ongoing operation of the Oceanic Fisheries Programme had been only partially successful, with the result that complete funding could only be assured for one more year. The Meeting **recommended** that senior executive staff of the Commission take urgent action to locate and secure additional sources of funding to sustain the base programme. Fundamental to the Programme, and to the long-term interests of fishery research and management in the region, was the maintenance of the statistical monitoring function, a priority strongly emphasised by the Fifth Meeting of the Standing Committee on Tuna and Billfish. RTMF 25 stressed that highest priority must be given to ensuring continuity of that database.

4.2 Report on the Sixth Standing Committee on Tuna and Billfish (SCTB 6)

36. The Oceanic Fisheries Coordinator presented the recommendations and deliberations of SCTB 6 (Pohnpei, 1993). The Meeting examined OFP's work programme and activities planned for 1993 – 94, and reviewed the Programme's work on tuna stock assessments and status of the Standing Committee database (Working Paper 6). It noted that the SCTB 7 would be held in Palau in August 1994.

37. The Deputy Director of FFA announced that FFA, in collaboration with the United States and Japan, would be holding a high-level meeting on tuna fisheries issues in the Western Pacific in December 1994. The first two items on this meeting's agenda were the status of tuna stocks and stock assessment research needs. He hoped that SCTB would have a large and important input to this meeting.

4.3 Report on the Third Meeting of the Western Pacific Yellowfin Research Group (WPYRG 3)

38. The Fisheries Research Scientist provided the Meeting with a brief history of WPYRG. WPYRG had reviewed fisheries data and biological information on yellowfin that were relevant to stock assessment. It had found it necessary to develop a customised model which would maximise the information content of the available catch, effort, length and tag-recapture data. The Fourth – and possibly final – meeting of WPYRG would review progress in developing this stock assessment model.

4.4 Report on the Fifth Meeting of the South Pacific Albacore Research Group (SPAR 5)

39. The Representative of Australia, current Chairman of SPAR, detailed deliberations of SPAR 5 (Working Paper 9), which was kindly hosted by French Polynesia. The group had concentrated on stock identity, spawning frequency, growth and stock assessment of albacore.

40. The Representative of French Polynesia said that his Government was pleased to have been of assistance in hosting SPAR 5. He then gave the Meeting an overview of the changing focus of albacore research in the South Pacific. SPAR's initial concern was the effects of the rapidly expanding driftnet fishery on trolling and longlining, and its impact on the overall status of the stock. With the cessation of driftnetting, albacore exploitation had returned to more 'normal' levels. Interaction between surface and longline fisheries for albacore now appeared to be low, but concern was growing over declining catch rates in the surface fishery. The decline in albacore catch rates might be related to ecological and environmental conditions which resulted in part of the stock not being accessible to fishermen. The Representative of French Polynesia suggested that researchers might need to look at links between oceanographic conditions and the accessibility of the albacore resource. He also noted that, although the South Pacific albacore stock straddled several EEZs, it might be useful for SPAR to look at the albacore fishery at a local level.

41. The Representative of Australia agreed that local problems were of overriding importance to several albacore fisheries in the region. He suggested that studies of interactions in local albacore fisheries might be enhanced by the expertise being developed by OFP on interactions in yellowfin and skipjack fisheries. He agreed that SPAR should consider promoting studies of the links between albacore abundance and oceanographic conditions.

42. The Oceanic Fisheries Coordinator thanked the various donors which had funded SPAR meetings. In recent years these had included the Overseas Fisheries Development Council, France and French Polynesia.

AGENDA ITEM 5 – TECHNICAL SESSION 2

5.1 South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPRTRAMP)

43. The Oceanic Fisheries Coordinator provided the Meeting with details of OFP's new SPRTRAMP. The five-year Project, funded by the Commission of the European Communities under Lomé IV, would implement continuous scientific monitoring of tuna fisheries in the region

and refine the resource assessment work initiated by the Regional Tuna Tagging Project. Annex 1 includes the report of this Technical Session.

44. The Oceanic Fisheries Coordinator invited member countries to suggest aspects of OFP on which future RTMF technical sessions might concentrate. The Representative of French Polynesia noted that member countries could make suggestions on technical sessions when the meeting's draft agenda was first circulated.

45. Following the discussions on SPRTRAMP the Meeting made the following recommendation:

Recommendation No. 3

The Meeting noted that, in December 1994 in Honiara, the Forum Fisheries Agency would convene a multilateral, high-level meeting on Western Pacific tuna fisheries, involving Agency members and Distant Water Fishing Nations, and that the Agenda would include items addressing status of tuna stocks and data/research needs in support of stock assessment. The Meeting **recommended** that the Secretariat ensure that the Oceanic Fisheries Programme provides any scientific support necessary for the deliberations, and requested appropriate complementary input on the issues by the Standing Committee on Tuna and Billfish.

5.2 Observer programmes

46. The FFA Surveillance Manager informed the meeting that the FFA Secretariat intended to expand its compliance-oriented observer programme that had been established for US purse seiners under the US Multilateral Treaty. It was hoping to develop a similar treaty with Taiwan, and this would also require a regional observer programme. The FFA Secretariat was keen to share observer information amongst Pacific Island nations, and would seek collaboration from SPC and other national observer programmes in sharing tasks, such as compliance.

47. The Representative of French Polynesia noted that many areas of interest were common to the SPC Oceanic Fisheries Programme and a programme implemented by French Polynesia to support the development of a territorial longline fishery. Referring to the provision in the SPRTRAMP Project for SPC to accommodate requests from members for assistance for scientific observer programmes, the Representative of French Polynesia pointed out that little data gathering had been done in the eastern part of the area served by SPC. He expressed his interest in investigating the prospects for scientific cooperation with the Commission and requested that a recommendation be drafted to that end. The Secretariat responded that requirements of this kind could be catered for under the SPRTRAMP Project.

Recommendation No. 4

Noting the various areas of interest common to the SPC's Oceanic Fisheries Programme and similar activities in French Polynesia, the Meeting **recommended** that the possibility of developing a joint applied tuna research programme be investigated. The programme could deal with the development of the large oceanic fisheries and that of local tuna fisheries.

48. The Representative of Australia asked for advice on what levels of coverage by Australia's national observer programme might be desired by OFP. The Oceanic Fisheries Coordinator stated that observer coverage of tuna fishing activities in the north-eastern Australian fishing zone continued to be important. He encouraged the efforts of many countries to increase levels of

coverage, which would benefit regional stock assessments made by OFP as well as providing important information for fisheries management at the national level.

AGENDA ITEM 6 – TECHNICAL SESSION 3

6.1 Status of Pacific Island inshore fisheries

49. This session was opened by the SPC Fishery Resources Adviser, who introduced Working Paper 8 as a basis for the presentation. The paper itself was then presented by the SPC Inshore Fisheries Scientist. Annex I includes a report of this session.

50. The Representative of Australia congratulated the speakers on the paper and suggested that, a similar document, combined with country reports presented at the Meeting each year, would provide a useful permanent record of the status of the region's inshore fishery resources at the present moment.

51. Dr Simon Jennings, of the Centre for Tropical Coastal Management Studies in the United Kingdom, reported on a reef resources assessment project currently under way in conjunction with the Marine Studies Programme of the University of the South Pacific. A brief account of the study is given in Information Paper 39.

AGENDA ITEM 7 – COASTAL FISHERIES PROGRAMME OVERVIEW

7.1 Overview

52. The Coastal Fisheries Coordinator introduced the Coastal Fisheries Programme (CFP) overview (Working Paper 3). The Programme consisted of six sections: Programme Management, Capture, Post-harvest, Training, Resource Assessment and Information. He noted that confirmed or indicative funding commitments appeared adequate to support most CFP activities over the next three years, with the exception of DSFDP, as had already been mentioned. The Coastal Fisheries Coordinator then called on each section's leader to review activities over the past 18 months and future plans.

7.2 Capture Section

53. The Fisheries Development Adviser outlined the work of the Capture Section, which is described in Working Paper 3 and Information Paper 8. Traditionally, the Masterfishermen of the DSFDP had been a cornerstone of the Section, providing fishermen in the region with training at a practical level, developing new fishing gear and techniques, and acting as a catalyst for transferring developments in fishing technology through the Pacific. Core funding had previously supported this work, but its reassignment threatened to seriously impede project activities. Through the UNDP-funded Offshore Fisheries Development Project, the Capture Section continued to provide training in FAD design, procurement of materials, rigging, deployment and fishing techniques. The Section had also been involved in developing a domestic longline fishery in Papua New Guinea, longlining trials for broadbill swordfish in New Caledonia, and sport-fishery development in Palau.

54. The Representatives of American Samoa, Fiji, Guam, Northern Mariana Islands, Palau, Papua New Guinea, Solomon Islands, Tokelau, Tuvalu and Western Samoa praised the CFP for the services provided by the Masterfishermen and for the assistance in developing national FAD programmes. Several also thanked the Fisheries Development Adviser for his lucid and interesting presentation of the Capture Section's report of activities.

55. The Representative of Palau noted that Palau's inshore resources seemed to be heavily exploited. The establishment of its FAD programme was helping to develop an offshore fishery based on resources that distant-water fishing nations had historically exploited. Palau also hoped that, with the help of CFP, it could develop a sportfishery which would help to maximise benefits from its inshore resources. Palau also found that the training in fishing techniques and marketing provided by SPC had been helpful in maximising the value of its inshore catches.

56. The Representative of Vanuatu noted that his country's inshore resources also appeared to be fully exploited. Consequently, Vanuatu expected to seek CFP assistance to deploy more FADs and develop its offshore fishing capabilities.

57. The Representative of Tokelau thanked CFP for deploying six FADs in the previous year; these would provide a basis for the revitalisation of Tokelau's small export-based tuna processing operation.

58. The Representative of Papua New Guinea asked whether the Secretariat could help prepare the funding proposals (Public Investment Programme Projects) that Papua New Guinea presented to finance departments and donors. The Fisheries Programme Manager replied that CFP should be able to assist in developing such proposals. He also suggested that there might be scope for further assistance within the framework of the UNDP-funded joint SPC/FFA Regional Fishery Support and National Capacity Building Project, which included provision for training in project appraisal and planning. The Fisheries Development Adviser added that SPC's FAD manual would include a section on FAD programme planning and management that would be useful for developing project proposals.

59. The Representative of Fiji stated that his Government invested about \$50,000 a year in its FAD Programme. However, the costs in relation to the benefits of FADs were often queried by his government and by funding donors when considering funding proposals. Another important issue was: 'who should pay'? The Fiji Fisheries Division had also received requests from tourist resorts for FAD deployment, and suggested that this might be an area where self-funding could be developed. In contrast, commercial fishermen were not always able to pay for FAD deployment.

60. In response, the Fisheries Development Adviser emphasised that it was important for all fisheries agencies to monitor catches from FADs and to assess their economic benefits. This would help to justify the costs to finance departments and donors. He noted that there were cases, for instance in Fiji, where industrial fishing companies and resort operators had deployed FADs; this ultimately benefited other user groups as well.

61. The Representative of Solomon Islands noted that the variety and amount of work shown in Working Paper 3 reflected the importance of the Capture Section's operations to the region. He suggested that the Meeting should explore ways of addressing the funding problems, and also consider new ways of CFP providing technical advice to member countries. He then asked if the Secretariat had evaluated the effectiveness of the attachment system associated with projects using Masterfishermen.

62. The Fisheries Development Adviser indicated that SPC had not specifically evaluated the effectiveness of attachments. However, he was confident that skills had been successfully transferred in most instances. In some cases, however, countries had not selected suitable counterparts, and this had detracted from the long-term value of project activities.

63. The Representative of the Northern Mariana Islands noted that an earlier visit by an SPC Masterfisherman had provided valuable data on outer-reef bottom fish stocks, which was now being used to put in place management arrangements for the exploitation of this resource.

64. The Representative of American Samoa provided the Meeting with background on his territory's longline project, which was developed at the time of concern over longliners moving to American Samoa from Hawaii. He considered that Masterfishermen would continue to be a critical area of assistance required by Pacific Island nations. He hoped that CFP would retain at least one or two Masterfisherman positions to deal with requests for assistance as they arose from time to time.

65. The Representative of Guam looked forward to receiving SPC help in response to a request for assistance in sportfishery development that had already been lodged with the Commission.

66. The Representative of Palau noted that, through the CFP, Palau had acquired practical skills in FAD deployment, but lacked capabilities in document preparation. He also asked for information about the status of FAD programmes in each country. SPC's Acting Fisheries Development Officer replied that the Secretariat had a database on all FADs that it had deployed, and also tried to monitor the deployment of FADs under other programmes. This information was available and could be put together in a report if required.

67. Considerable discussion followed regarding funding of the project. The Secretariat explained that the recommendation of RTMF 24, which urged CRGA and Conference to reinstate core funding for DSFDP, had been deferred by two successive CRGAs and had ultimately not been put in place, possibly because of other major changes that were taking place in the structure of SPC's overall budget.

68. Several delegates expressed their disappointment at the fact that CRGA had not acted on this recommendation, despite the high level of priority the Meeting assigned to it. The Representative of Palau requested the assistance of SPC Management in re-presenting the case to CRGA. The Representative of Papua New Guinea reiterated the importance his country attached to this project and suggested that the SPC Director of Programmes or Director of Services should attend RTMF so that Management could be aware of the strength of country feeling on issues such as this. The Meeting considered that an external review of this project might usefully evaluate past contributions by the project, countries' current capture fisheries development needs and potential future needs to take advantage of changing technology or developmental opportunities. This would be a basis for reassessment of the services that might be required from SPC in this area. It would also help re-emphasise the priority countries placed on this area of SPC's assistance.

The Meeting subsequently approved the following recommendations:

Recommendation No. 5

The Meeting noted with extreme disappointment that Recommendation 11 from RTMF 24, which urged the South Pacific Conference to reinstate full core funding support to the Deep Sea Fisheries Development Project as of 1993, had been deferred by two successive meetings of CRGA, and then had not been taken into account during the restructuring of the Commission's budget. The Meeting **recommended** that CRGA give priority to consideration of the issue and, in light of the importance of fisheries resources to the island countries and very high priority placed on this project by RTMF 25, make every effort to increase the level of core budget support to the Deep Sea Fisheries Development Project as of 1995.

Recommendation No. 6

The Meeting further noted that it would be useful to review member countries' and territories' present expectations of the Deep Sea Fisheries Development Project and determine the status of national capacities to implement capture fishery development projects. This would assist the Secretariat to determine the type and extent of support likely to be needed by member countries in the longer term, and make appropriate adjustments to the *modus operandi* of the Project to cater for these needs. The Meeting **recommended** that the Secretariat undertake such a needs review, preferably using external expertise and extra-budgetary funding if these were available, and that the review findings be reported to CRGA 21 in October 1994, when they could be considered alongside Recommendation No. 5.

7.3 Post-harvest Section

69. The Post-harvest Fisheries Adviser, referring to Working Papers 3 and 12, described the work of CFP's Post-harvest Section. He described the Section's activities in post-harvest training, in the development of alternative tuna products, and in supporting the development of economic opportunities in the post-harvest area for small-scale operators.

70. The Coastal Fisheries Coordinator then provided some background on the Women-in-Fisheries Project. The project had been stalled for over a year due to staffing difficulties associated with the Project Officer position. ICOD, the original funding agency, had been closed, so it was difficult to obtain approval from Canada for an extra year of funding and for the nationality requirements for the position to be waived, as had been requested by the Secretariat. Eventually, SPC received firm advice from Canada that it rejected these proposals. The CFP maintained that the funds remaining in the project should be used for the purpose for which they were originally provided, and not re-allocated to other activities as proposed by Canada.

71. The Representative of Papua New Guinea told the Meeting that the Women-in-Fisheries Programme in his country was very successful, and hoped that support for this project through SPC would continue. The Representative of Fiji also supported the Secretariat's position, and noted his own country's efforts to establish a national Women-in-Fisheries Project. The Representative of Palau was disappointed SPC's project had stopped, interrupting an on-going programme of support to Palau by SPC in this area, and encouraged the Secretariat to seek the necessary funding to reinstate the Project. The Representative of Vanuatu also supported the project and advised the Meeting that Vanuatu was developing a fish-smoking project, which was intended to benefit women and which would welcome assistance from CFP.

Following these discussions the Meeting made the following recommendation:

Recommendation No. 7

The meeting re-stated the importance of the SPC Women's Fisheries Development Project, which had provided valuable support to a number of national level women-in-fisheries initiatives. The Meeting **recommended** that the Secretariat take all possible action to reinstate Canadian funding support for this important project, or, failing this, attempt to identify an alternative source of funding for it.

72. The Coastal Fisheries Coordinator then reviewed the history of the SPC/USP proposal to establish an RPFC (Working Paper 12). After three years, the proposal was still unfunded. The original proposal sought US\$3 million to create an RPFC which would undertake a wide range of

academic and vocational teaching activities, as well as carrying out various kinds of post-harvest and seafood technology research and providing analytical services to both public and private sectors.

73. The Secretariat was therefore proposing a new approach under which USP would be asked to designate one of four new lecturer positions to post-harvest training, and to incorporate post-harvest facilities in the new Marine Studies Programme Building presently under consideration by a bilateral funding donor. For its part, SPC would scale down its proposal to just one professional and one administrative officer, for which it would be easier to find funding. This change in approach would lead to most of the original objectives of the RPFC being met, but at a much lower cost.

74. The Representative of Australia asked whether this proposal would be affected by the forthcoming Review of Regional Institutional Arrangements in Marine Affairs. The Coastal Fisheries Coordinator could not foresee how this proposal might lead to problems in the context of the institutional review, and noted that in any case the review would be completed well before the new approach to the RPFC was funded and implemented.

75. The Representative of USP added that the RPFC concept had been included in the USP Marine Studies Programme's five-year plan since 1990. He considered that a recommendation from RTMF would be useful to the Marine Studies Programme Management Board, which would soon meet to consider the proposed change in approach to the RPFC. With the support of the board, USP could recruit a lecturer quite quickly (possibly before the end of the year) and commence the training component of this project using existing resources.

76. The Representative of Western Samoa thanked the Government of the United Kingdom for its support to SPC's work in the post-harvest fisheries project. He suggested that SPC should not be involved in long-term training that led to academic awards. However, he supported the involvement of SPC in the initial establishment of long-term training which would be eventually handed over to an appropriate institution. The Fisheries Programme Manager confirmed that the Secretariat's intention in modifying the proposal was that USP would assume full responsibility for the academic teaching component, and for strategic or long-term research, while SPC would target vocational training in the region and applied research on seafood product development and quality control.

77. The Representative of the United States reminded the Meeting that the original intention of RPFC was to provide a facility in the region for programmes of applied and vocational training courses on seafood processing and other post-harvest topics. Academic training was a secondary consideration of RPFC, although of course a high priority within USP's overall programme. The Representative of French Polynesia sought clarification of the type of training courses the facility would provide. He also hoped that these courses would be able to accommodate French speakers.

78. In response to these two comments, the Post-harvest Fisheries Adviser said that the proposed facility would offer a variety of courses, ranging from long-term academic training to short-term training exercises. He also pointed out that, in the past, SPC had arranged courses in French as the need had arisen, and that vocational training could be delivered through national, sub-regional or regional workshops as circumstances required.

Recommendation No. 8

Noting the lack of success by the Secretariat in securing funding for the establishment of the Regional Post-harvest Centre and the unlikelihood of such funding becoming available in the foreseeable future, the Meeting strongly **recommended** that, as part of a new strategy for bringing about the aims of the project, the Secretariat request USP to assume responsibility for some project activities by appointing a Lecturer in Post-harvest Fisheries, and by providing for the incorporation of post-harvest teaching and research facilities in any new building that may ultimately be constructed to house the Marine Studies Programme.

Recommendation No. 9

The Meeting further **recommended** that, as part of the same new strategy, the Secretariat replace the five (5) positions originally envisaged as part of the Regional Post-harvest Fisheries Centre with one professional and one administrative position within the Post-harvest Section. These officers would take over responsibility for vocational and technical training activities, and for applied research in support of national post-harvest development activities, as originally envisaged within the RPFC.

7.4 Training Section

79. The Fisheries Education and Training Adviser provided the meeting with an account of the work of the Training Section, referring to Working Papers 3, 4 and 5 and Information Papers 10 and 22.

80. The Representative of Tokelau thanked the Fisheries Education and Training Adviser for his presentation. He suggested that in future the Training Section might consider developing programmes in project planning, monitoring and evaluation. In response to this suggestion, the Coastal Fisheries Coordinator informed the Meeting that the forthcoming SPC/FFA Regional Fishery Support and National Capacity Building Project provided for a range of public-sector management training activities, including those suggested by Tokelau. This project, which would be implemented jointly by SPC and FFA, was expected to come into force in the very near future, following official confirmation of UNDP funding.

81. The Representative of Solomon Islands informed the Meeting that the Solomon Islands College of Higher Education's Maritime and Fisheries School was developing a standard course for observers on foreign and domestic fishing vessels. The Deputy Director of FFA told the Meeting that the FFA Secretariat had been working closely with the Maritime and Fisheries School in developing a regional observer training programme. It had recently arranged for one of the School's lecturers to travel to Australia, where he would examine the observer training available there and identify what aspects could be incorporated into SICHE's programme. The SPC Fisheries Programme Manager advised the Meeting that SPC involvement in observer training had, to date, been in support of exercises initiated by FFA. He also stated that SPC would provide input into any regionally endorsed observer training programmes.

The Meeting made the following recommendation:

Recommendation No. 10

In considering the work programme of the Fisheries Training Section, the Meeting noted that the diverse range of activities undertaken by the Section reflected the wide-ranging training and educational needs of the region's fisheries sector. The Meeting endorsed the work programme of the Fisheries Training Section and **recommended** that the Secretariat continue its efforts to:

- support national fisheries training and educational institutions and human resource development initiatives;
- develop and coordinate national and regional initiatives in standardising fishing vessel crew certification;
- implement organisational and enterprise management training initiatives;

- coordinate and seek appropriate funding to facilitate development of a vocational fisheries certificate programme suitable for implementation in national technical institutions;
- support and develop public awareness of safety-at-sea issues, particularly through the provision of media resource materials such as videos and posters.

82. The Representative of Palau thanked the Fisheries Education and Training Adviser for his comprehensive presentation. He stated that the variety and depth of the Section's work reflected the huge demand for fisheries training across the region. He believed that the relatively small numbers of fisheries staff in each country created special problems for providing training and retaining skilled staff. Consequently, he stressed that rationalising the funding available for training was important, as was the ongoing production of a range of media for communication and instructional purposes, including videos, training modules, handbooks, etc.

83. The Representative of Vanuatu informed the Meeting that foreign fishing vessels now employed about 500 ni-Vanuatu seamen. He noted an acute need for training deckhands to an international accredited level and endorsed the development of a regional standard in fishing vessel crew certificates. This would improve the prospects for Pacific Islanders of gaining employment on foreign fishing vessels, and thus help dissemination of fishing technology through the region.

84. The Representative of French Polynesia acknowledged the efforts of SPC in providing training courses in the French language and underlined the importance of safety-at-sea issues. He requested SPC support for training in the use of navigational instruments and for other training in related areas. He also informed the Meeting that, within the next two to three months, French Polynesia would be commissioning a training vessel which might be able to accommodate trainees from other countries.

85. The Representative of New Caledonia informed the Meeting that the New Caledonian Maritime Training School dealt with most aspects of seamanship training, and provided a series of certificates for each level of competence as required by the career structure within the New Caledonian maritime industry.

86. The Representative of Vanuatu asked the USP Representative about the status of IMR vocational fisheries training in Honiara. The Representative of USP responded that, at this stage, USP had no plans to reactivate the old Diploma in Tropical Fisheries or establish any other vocational programme. The Representative of Vanuatu then suggested that the Nelson course might ultimately be replaced by a regionally-based fisheries certificate course, with modules offered by training institutions within the region.

87. The Deputy Director of FFA indicated FFA's appreciation of the work done by the Training Section, and looked forward to continuing collaboration with SPC in this area. He informed the Meeting that, with funding from AIDAB, FFA would hold a short course on project development and monitoring later in 1994 which might address concerns already raised by Papua New Guinea and Tokelau. FFA was helping member countries to develop standard contracts that would ensure that Pacific Islanders were employed under satisfactory terms and conditions on foreign fishing vessels. He also noted that the training needs for seamen employed in the various foreign fleets fishing in the region were quite different; foreign fishermen needed to be involved in designing and implementing those training courses.

88. The Fisheries Education and Training Adviser pointed out that the regional standard was a minimum standard which did not preclude specialisation beyond the minimum levels to meet the needs of specific nations or fishing styles, but which must, for instance, include a sea-safety component. He highlighted the need to establish a career structure in the fishing industry which

would be promoted by certification. The Representative of Vanuatu added that many of these foreign fishing nations were party to international maritime codes, and consequently should conform to specific agreed standards when employing crew.

89. In response to a question from the Representative of Papua New Guinea, the Fisheries Education and Training Advisor indicated that the Section was aware of strong interest in enterprise management courses run at a sub-regional level and would do its best to respond to these needs within the constraints of funding availability.

7.5 Resource Assessment Section

90. The Inshore Fisheries Scientist reviewed regional and in-country activities of the Resource Assessment Section (Working Paper 3). In-country activities included development of trochus management regimes, reviews of coastal fisheries monitoring programmes, advice on baitfisheries for longlining and assessments of coastal fisheries resources. The Project's regional activities included the maintenance of a database on ciguatera, support of an FAO aquaculture project and review of giant clam culture activities.

91. The Representative of Solomon Islands stressed the value of the IFRP to many countries in the region, especially in relation to the needs of coastal communities that relied on inshore fisheries resources for subsistence purposes. These sentiments were echoed by the Representatives of Fiji, French Polynesia, Nauru, Niue, Palau, Papua New Guinea and Tuvalu.

92. The Representative of Palau agreed on the critical importance of the Project to the region, and welcomed the proposal to hold a Workshop on Inshore Fisheries Management. He provided the Meeting with an overview of recent developments in fisheries management in Palau, which had recently been involved in extensive, though rapid, ecological assessment research to support the formulation of fisheries regulations. Palau had commenced production of an annual report, which had proved very useful for documenting fishery information, and other projects that concerned analysis of aerial photos for reef habitat classification, studies of grouper spawning aggregations and developing guidelines for regulation of the beche-de-mer and aquarium fish trades. Palau was also developing a sportfishery, which would help Palau maximise the value of its reef fisheries, and a monitoring project on the long-term health of coral reefs.

93. The Representative of Papua New Guinea acknowledged the editorial assistance provided by the IFRP in producing technical reports. She noted that much resource assessment work conducted in the region had been directed to development, but many countries now needed to estimate at what levels these resources could be fished sustainably. In this regard, she suggested that a series of regional-level resource profiles on key inshore fishery species would be useful.

94. The Representative of Kiribati indicated his country's need for assistance in developing management strategies for lagoon fisheries, where interaction between different user groups exploiting bonefish and beche-de-mer was a problem. Resource competition between spear divers and aquarium fish collectors was another concern in Kiribati.

95. The Representative of Fiji emphasised the importance of inshore fishery resources in his country, where several inshore areas and certain fish species were said to be overfished. On the whole his government wanted to conserve inshore resources, not develop them further, and in this context he welcomed any move to increase SPC's focus on inshore management issues.

96. The Representative of Tuvalu noted that his country had seen a proliferation of requests from foreign fishermen for access to inshore fish resources. Tuvalu would also be requesting SPC's assistance in quantifying its inshore resources and the levels of exploitation that they could support.

97. The Representative of Niue thanked IFRP for its help in assessing the resources of Beveridge Reef, and would appreciate further support in quantifying the fishery resources of this area. Niue was aware of increasing numbers of foreign fishing vessels operating in its zone, but lacked surveillance facilities to monitor these activities.

98. The Representative of Nauru thanked the Secretariat for its work in establishing a coastal fisheries database in Nauru, and for the first assessments of local fishery productivity that this had made possible. He looked forward to seeing this information circulated more widely in the form of an SPC publication in due course.

99. The Representative of the Northern Mariana Islands suggested that, with the constraints on funding, member countries could provide support for SPC projects such as IFRP. He indicated that a formal request had been submitted to SPC for assistance with trochus resource assessment and that as part of that request the CNMI Administration would cover the cost of local accommodation for the SPC officer involved.

100. The Representative of Western Samoa acknowledged the work of the programme in helping national fisheries organisations provide advice to their governments. He noted the long-term, labour-intensive nature of comprehensive inshore resource assessment work, and offered other Representatives copies of an assessment of Western Samoa's fisheries that it had developed over a three-year period.

101. The Representative of Papua New Guinea advised participants of the potential value to other countries of the research reports prepared by Papua New Guinean researchers. She also suggested that other countries or regional organisations might wish to make use of Papua New Guinean research vessels for national or regional work.

102. The Coastal Fisheries Coordinator then presented the Meeting with outlines of two new project proposals, entitled respectively, 'Application of Remotely Sensed Information to the Management of Pacific Island Reef and Lagoon Fisheries', and 'Integrated Coastal Fisheries Management Project'. The presentation was based on Working Paper 13, which briefly summarises both proposals. The main objective of the first project, which would be carried out by SPC in partnership with New Caledonia and French Polynesia, was to assess how remotely-sensed data might be used as an aid to managing coastal fisheries. ICFMP covered a range of resource assessment and management activities, including a comprehensive programme of data gathering, the development of sustainable harvesting practices, and adding value to seafood products based on inshore fishery resources. Both projects would work through a series of case studies or project target sites within member countries.

103. The Representative of Guam indicated his Government's interest in improving inshore fishery resource management, which was currently the subject of national policy and legislative review.

104. The Representative of Palau indicated his support of the proposed projects. He asked about the process of selecting sites and sought clarification of the remote sensing material available to the project. In response to the second question, the Coastal Fisheries Coordinator indicated that the project would principally use data from SPOT satellites, as well as digitised aerial photography and perhaps LANDSAT data. With regard to Palau's first point, it would be the prerogative of member countries to consider and nominate sites for case studies at the proposed Workshop on Inshore Fisheries Management, once the data gathering phase of the project was complete at the end of Year 1. An important criterion for selection should be how lessons learnt from each site could be applied to other areas in the region.

105. The Representative of French Polynesia joined other participants in recognising the importance of resource assessments for subsistence and commercial fisheries, and emphasised the growing importance of tourism. He noted that reef ecosystems were very fragile, and that their management

needed a firm scientific basis. He recognised the power of remote sensing in resource assessment, but highlighted that there were limitations to its application in studies of shallow lagoon waters, and that the extent of these limitations was not yet fully understood. Experience in French Polynesia showed that ground truthing and other fieldwork were important components of such studies, especially for their precision. The Coastal Fisheries Coordinator confirmed that ground truthing was an integral component of the proposed project. He told the meeting of studies in Australia that had provided a guide to the amount of ground truthing required by remote-sensing projects. Contacts with Australian and other institutions with experience in this field would be developed as the projects progressed.

106. The Representative of Nauru stressed that RTMF was a technical meeting, and participants were not able to pledge financial commitments to projects. However, he indicated that he would raise with his Government the question of providing additional support to projects of this nature.

107. The Representative of the United Kingdom endorsed the Coastal Fisheries Coordinator's comments regarding ICFMP. She advised that, while the UK strongly supported the aims of the project and wished to make funds available, sufficient funds to cover the proposed budget were not available at this point in time. She suggested that either a funding shortfall could be found from the member countries or a case could be made to ODA's senior management in London to have funds switched to the Pacific regional budget. In making a case, there would be a need to demonstrate member countries' commitment to the project. The UK did not perceive this project as either a UK or SPC project, but as one that would be 'owned' by member countries. Management in London would be looking for a tangible demonstration of member countries' commitment.

108. In response, the Representative of Palau indicated his country's full support for the project. He highlighted the systematic development of an assessment capability for inshore resources by many member countries and noted that this in itself demonstrated a commitment to the principles of the project, as well as an investment in coastal fisheries management that could be viewed as a substantive contribution to the project. He expressed his hope that the proposed project would help the continued development of these capabilities.

109. The Representative of Fiji noted that RTMF was a technical meeting and that participants were therefore not in a position to commit financial support. However, he indicated that his delegation would raise this matter at an official level with his Government at the earliest opportunity.

110. The Representative of Western Samoa congratulated the Coastal Fisheries Coordinator on his presentation of the project proposal. However, he suggested that further technical examination of all the documents associated with the proposal would have been preferable before the Meeting was asked for its endorsement of the project. He was concerned, for instance, that some countries might have a suitable site, but not the resources to provide counterparts.

111. In response, the Coastal Fisheries Coordinator reminded the Meeting that the proposal was still in draft form, and would not be finalised without the approval of the present Meeting. The Representatives of Western Samoa and Palau suggested that there should be scope for member countries to review the entire proposal. The Coastal Fisheries Coordinator agreed to circulate project documentation to interested member countries. However, he reminded participants that the proposal was tabled in summary form, and the Secretariat was seeking endorsement in principle. The Coastal Fisheries Coordinator also outlined the tight schedule for the project proposal, and suggested that an endorsement at this time would help ensure that the Coastal Fisheries Programme's resource assessment and post-harvest work could continue without disruption.

The Meeting then made the following recommendations:

Recommendation No. 11

The Meeting expressed its support for the joint SPC/New Caledonia/French Polynesia project provisionally entitled 'Application of Remotely Sensed Information to the Management of Pacific Island Reef and Lagoon Fisheries' and **recommended** that the Secretariat take all necessary action to secure funding so that the project could be implemented.

Recommendation No. 12

The Meeting expressed its appreciation of the valuable contribution made by the UK-funded Inshore Fisheries Research Project and the Fish Handling and Processing Project, both of which were due to conclude in June 1994. The Meeting strongly supported the objectives of the proposed Integrated Coastal Fisheries Management Project (ICFMP), for which extra-budgetary funding had been sought from the Government of United Kingdom, as a means of building on the work of these two valuable projects. The Meeting **recommended** that the Secretariat take all action necessary to secure funding for this project from the UK as soon as possible.

Recommendation No. 13

The Meeting noted that the eventual level of donor funding available for the ICFMP, and possibly other extra-budgetary funded projects, would depend not only on the extent to which the countries involved were committed to the objectives of the programme, but also on the extent to which they showed that commitment by some tangible contribution towards its cost. The Meeting **recommended** that, on return to their countries, delegates raise the issue of member countries' contributions to the cost of the programme with the appropriate authorities, and that this issue be discussed in more depth at CRGA 20 in May 1994.

112. The Representative of FFA briefed the Meeting on a review of research needs as they related to fisheries development and marine conservation and management. This review would be implemented with Canadian funding support under the auspices of FFA's Research Coordination Unit in the near future. He noted that the review would be of interest to all regional organisations supporting research activities. The results of the review would provide a basis for ensuring that the South Pacific continued to receive adequate consideration in the World Bank-initiated 'Strategy for International Fisheries Research'. The recommendations would also be considered during the Workshop on Inshore Fisheries Management planned for 1995 and the Institutional Review which had been commissioned by the South Pacific Forum and the South Pacific Conference. He then highlighted the good opportunity for SPC-FFA collaboration offered by this activity.

7.6 Information Section

113. The Fisheries Information Officer reviewed activities of the Information Section, which involved the gathering, editing and redistribution of fisheries information through the region (Working Paper 3).

114. The Representative of Palau thanked the Information Section for its very good work, particularly in document circulation and the development of special interest groups. It was planning to update the Palau Fisheries Bibliography previously produced through the FAO Regional Fishery

Support Project and needed advice from the Section on this. The Fisheries Information Officer agreed on the importance of this work, but suggested that PIMRIS might be a better vehicle through which to support such an update.

115. The Representative of Guam added his appreciation for the Guam Fisheries Bibliography produced by the Section.

116. The Representative of French Polynesia expressed his appreciation to the Section for the production of Information Bulletins in French. He noted that these were in great demand by both the public and the private sectors.

7.7 Report of PIMRIS Steering Committee

117. The PIMRIS Coordinator presented the deliberations and recommendations of the Sixth Meeting of the PIMRIS Steering Committee (Working Paper 10).

118. The Representatives of American Samoa, Northern Mariana Islands and Papua New Guinea thanked PIMRIS for the help it had provided them. The Representative of Papua New Guinea also noted that there were large amounts of information held in many countries which might benefit from integration into national and regional information databases. She urged member countries to make commitments to sustain PIMRIS work in their own countries.

119. The PIMRIS Coordinator asked the Meeting to take particular note of the Steering Committee's recommendation that national fisheries/marine resources departments attempt to provide resources to further develop information management skills for their library/information centre staff, and take steps to put them on permanent established positions in view of the training provided to them under PIMRIS. RTMF 25 endorsed this recommendation by the Steering Committee.

AGENDA ITEM 8 – TECHNICAL SESSION 4

8.1 Starting up a small-scale tuna longlining project – a case study from Papua New Guinea

120. The Consultant Masterfisherman gave an account of an ongoing PNG/USAID/SPC project in Papua New Guinea which aimed to demonstrate the technical and economic feasibility of small-scale tuna longlining using monofilament gear. Details of the project are given in Information Paper 36. A report of this session is included in Annex 1.

8.2 Development of the SPC/Indian Ocean FAD raft – an inexpensive, storm-resistant raft for the Pacific Islands

121. The SPC Masterfisherman made a presentation, based on Information Paper 25, in which he described the history of development of a new type of FAD raft and mooring by SPC which was inexpensive, yet had superior resistance to storms. The presentation included details of material specifications and costs, and was followed by a series of technical questions about aspects of construction, use and FAD technology in general. The report of this session is included in Annex 1.

AGENDA ITEM 9 – STATEMENTS FROM OTHER ORGANISATIONS

122. The Director of ACIAR briefly outlined ACIAR goals and activities and explained the complementary roles of ACIAR and AIDAB within the Australian overseas aid programme. He

emphasised Australia's continuing commitment to the region, best reflected in the recent creation of a ministerial post for overseas aid with specific responsibility for the Pacific Islands. He said that ACIAR funded development-oriented research partnerships between Australia and developing country institutions. Training and national research capacity building were important considerations. Projects were usually bilateral, but ACIAR also supported initiatives of other organisations including the regional agencies (SPC, FFA). In fisheries ACIAR maintained a close working relationship with ICLARM. He concluded with a brief account of the process of priority setting within ACIAR.

123. The OFCF Representative provided the Meeting with background on OFCF activities in fisheries development and training in the Western Pacific, inviting feedback from member countries on their views of these projects.

124. The Representative of the United States made a statement on the status of the USAID Pacific Office.

125. The USP Representative referred the Meeting to a leaflet that had been previously distributed for an account of the Marine Studies Programme's current activities. He also noted a number of issues not referred to in that paper. In reference to earlier discussions on funding difficulties for SPC's Masterfishermen positions, he advised the Meeting that the USP Masterfisherman could be made available to SPC or member country FAD development projects, as had been done in the past. He also mentioned several initiatives of the International Ocean Institute's Operational Centre at USP, including forthcoming five-week courses on Coastal Fisheries Development and Management, Fishery Economics and Management, and Resource Economics, all supported by UNDP. Other forthcoming initiatives included a Workshop on Customary Marine Tenure, and a series of 'Leaders' Seminars' to promote high-level discussions of maritime issues.

126. The WPFCC Representative outlined the Committee's work in cooperative fisheries research and management projects. He thanked the OFP and the Training Section for their support and cooperation over the past 18 months.

127. The UNDP Representative informed the Meeting of UNDP's support of a variety of fisheries projects in the region, including SPC's Offshore Fisheries Development Project and the forthcoming SPC/FFA Regional Fishery Support and National Capacity Building Project.

128. The Representative of the Marine Resources Assessment Group outlined the types of work undertaken and supported by ODA, as described in Information Paper 39. He then detailed results of a recent study which examined information requirements for assessing the benefits of FADs (Information Paper 40).

129. The Representative of ICLARM described work under way at ICLARM's Coastal Aquaculture Center in Solomon Islands. This included culturing of six species of giant clam (some for the aquarium trade), collecting wild spat from black-lip pearl oysters, and investigating the potential for enhancing wild stocks of beche-de-mer.

130. The Representative of SPREP noted that many of SPREP's activities were closely related to research on, and management of, inshore and coastal fisheries.

131. The Representative of the Centre for Tropical Coastal Management Studies, based at the University of Newcastle-upon-Tyne (UK), informed the Meeting of teaching, consultancies and collaborative research on coastal and reef ecosystems undertaken by the Centre.

132. The Representative of Resource Development Associates in Tonga presented preliminary results of commercial feasibility trials in Tonga on small-scale longline and handline gears (Information Paper 32). The Representative of Papua New Guinea thanked the Government of

Tonga for sharing information from this project with the Meeting. The Representative of Palau expressed his interest in a cost-benefit analysis of this project.

133. The Executive Director of WPRFMC advised the Meeting of recent WPRFMC initiatives. These included a cap on expansion of the domestic longline fishery, monitoring of longliners for catches of turtle, development of methods to reduce turtle by-catch and vessel monitoring systems.

134. The Representative of FFA expressed appreciation for the efforts of SPC's fisheries programme staff in promoting a cooperative relationship between the two organisations. He noted that this was improving each year and that such a trend could only benefit the member countries of each organisation. However, he also noted that economic and political developments were increasingly affecting the activities of all regional organisations and that, as a result, FFA expected increased attention would be required in future to ensuring that limited human and financial resources were used efficiently.

AGENDA ITEM 10 — REVIEW OF REGIONAL INSTITUTIONAL ARRANGEMENTS IN THE MARINE SECTOR

135. The Fisheries Programme Manager introduced the subject of the Institutional Review (Working Paper 7). He explained that the Review would concentrate on how to most effectively direct work in the marine sector to meet the region's future needs in development, management and conservation of marine resources. He then called on the Deputy Director of FFA to update participants on developments in establishing the Review. The Deputy Director highlighted international developments relevant to this issue. He indicated that the Review should be able to make a preliminary verbal report to the South Pacific Forum in August 1994.

136. The Representative of Papua New Guinea said that the Review should be conducted as soon as possible. He stressed that those involved must be familiar with fisheries in the region, so that this sector be given appropriate consideration. The Fisheries Coordinator noted that the terms of reference for the Review, as annexed to Working Paper 7, had been discussed and agreed to at a recent meeting of SPOCC.

137. In response to a question from the Representative of Australia, the FFA Representative indicated that the questionnaire developed as part of the Review was being finalised by FFA and SPC. They would then circulate it to member countries, and it would serve as an important framework for information gathering by the review team.

AGENDA ITEM 11 — QUARANTINE PROTOCOLS FOR MARINE SPECIES

138. The Fishery Resources Adviser provided the Meeting with background on the development of quarantine protocols for marine species (Working Paper 11). The Secretariat's approach had involved three phases: a baseline study of introductions of aquatic animals in the South Pacific (Information Paper 6); a review of quarantine policies (Information Paper 13); and the development of principles for assessing the potential ecological impact of marine species introductions (to be conducted).

139. In presenting Information Paper 13, the Representative of Biodata Resources provided the Meeting with a review of quarantine threats and the severe consequences of introductions of aquatic-borne diseases and pests to the region. He presented guidelines and principles for regional aquatic animal quarantine developed as part of the project.

140. The Representative of Palau indicated that Palau had no quarantine legislation for aquatic organisms and greatly appreciated the advice provided by the project in developing guidelines. The

Representative of Vanuatu agreed with Palau, and told the Meeting of his country's current problems in not having quarantine legislation for aquatic organisms.

141. The Fisheries Programme Manager asked the Representative of FFA whether the subject of quarantine had been raised during visits by its Legal Section to Forum countries. The Deputy Director of FFA replied that it had been unable to do this because national quarantine regulations were often outside the fishery legislation that had been the subject of these visits. He complemented SPC on the work done on developing quarantine guidelines and offered the FFA Secretariat's help on this issue wherever possible.

142. The Representative of Fiji endorsed the quarantine guidelines developed by the project.

143. The Representative of Western Samoa joined the Representative of Fiji and other participants in complimenting the work of the Consultant, saying that the material presented at RTMF was of direct relevance to the current development of legislation in his country. The Representative of Western Samoa noted that there would be a need for fisheries staff to be trained to recognise diseases and pests of translocated marine organisms.

144. The Representative of Papua New Guinea also supported the work being done on quarantine protocols. She noted that Papua New Guinea had already been involved in attempts to develop quarantine guidelines for fish imports and introductions and offered Papua New Guinea's help in this project.

145. The Representative of French Polynesia agreed on the need to have quarantine measures in place in each country, but considered that this Meeting might not be the most appropriate forum to comment on many of the technical aspects of the guidelines and principles. The Fishery Resources Adviser concurred, saying that, in most countries, quarantine issues fell between the jurisdiction of several government departments. He stressed that endorsement in principle of the guidelines by the present Meeting was nevertheless needed to keep the work on track. In response to Western Samoa's request for technical training on disease recognition, he told the Meeting that he hoped that this would be considered after member countries had agreed on the general principles. The Coastal Fisheries Coordinator also noted that these principles had been presented to a recent meeting of regional veterinary officers hosted by SPC.

146. The Representative of Guam highlighted the serious ecological impacts of introductions of marine organisms, which in some cases were more damaging than disease or pest problems. He complimented the work and encouraged the Meeting to endorse the principles and guidelines presented in Annex 2 of Working Paper 11.

Recommendation No. 14

Noting the disease risk posed by increasing numbers of transfers of exotic aquatic species into the Pacific Islands, the Meeting noted also the *Interim Guidelines and Principles for Regional Aquatic Animal Quarantine* detailed in Annex 2 of Working Paper 11 towards the development and harmonisation of aquatic animal quarantine mechanisms in the region, and **recommended** that the Secretariat monitor progress in the development of Pacific Island quarantine mechanisms to enable the *Interim Guidelines* to be reviewed at the next Regional Technical Meeting on Fisheries.

AGENDA ITEM 12 — TECHNICAL SESSION 5

12.1 Processing novel tuna products in the Pacific

147. The Post-harvest Fisheries Adviser reviewed the Fisheries Programme's involvement in developing opportunities for processing novel tuna products in the Pacific, referring the Meeting to Information Papers 24 and 21. He described the history of developing the processing of marinated dried tuna in Tokelau, and the marketing of this product. He then presented the Meeting with product development results on skipjack, dried minced products and new flavours under a collaborative project between SPC and ACIAR.

148. The Representative of the Northern Mariana Islands asked about the supply of materials and equipment for preparing dried tuna products. The Post-harvest Fisheries Adviser informed the Meeting that most items were available locally in many countries. He mentioned that one important component, high-quality packaging materials, was one of the most difficult to acquire; the Secretariat could provide a list of suppliers of these.

149. The Representative of Palau told the Meeting that Palau would like to take advantage of the by-catch from tuna fishing and combine this with developing the tourism industry. Palau was hoping to start trials in dried tuna processing and marketing. The Representative of Guam thanked the Post-harvest Fisheries Adviser for his erudite presentation. Like Palau, Guam would also like to take advantage of its tuna by-catch and tourist industry. He was sure that the information presented by the Post-harvest Fisheries Adviser would help to develop further Guam's capabilities in processing and marketing tuna products.

150. The Representative of Papua New Guinea told the Meeting of his country's great expectations for its women-in-fisheries project, which was providing tuna and other products to local communities, especially those in the Highlands. He informed participants that Papua New Guinea had recently identified sources of cheap equipment, such as mincers, in China.

151. The Representative of Vanuatu indicated that his government would formally approach the Secretariat with a request for help on its fish-smoking work.

152. The Representative of Solomon Islands was interested in marinated dried shark products, noting that the under-utilisation of sharks was a regional concern. The Post-harvest Fisheries Advisor informed the meeting that there was potential here, and agreed that further work on shark could be incorporated into the work on tuna. The Representative of Guam asked which shark species were preferable. The Post-harvest Fisheries Adviser said that each shark species would probably need to be processed differently, and would present different eating qualities. However, he highlighted a marketing problem with shark; the public generally considered tuna to be a high-value species, whereas shark was often less attractive. The Chairman also noted that member countries should be careful in exploiting shark because of world-wide concern over its vulnerability to overfishing.

AGENDA ITEM 13 — AQUACULTURE

153. The Fisheries Programme Manager updated the Meeting on SPC and FFA involvement in the Regional Aquaculture Development Project. He stated that there were limited funds remaining in the project budget and that these would limit any future project activities. Japan had approved funding for the second five-year phase of the project, and Fiji had been approached to host it. He then provided the meeting with a brief overview of activities supported by this project.

AGENDA ITEM 14 — TIMING OF NEXT MEETING

154. The Fisheries Programme Manager noted that RTMF meetings were now scheduled on a biennial basis, although the current Meeting (RTMF 25) had been held 18 months after RTMF 24. The Representative of Papua New Guinea preferred that the Secretariat convene RTMF 26 in early 1996. He also asked whether member countries would have an opportunity to host meetings. The Fisheries Programme Manager welcomed this suggestion, but noted that these technical meetings required interpretation facilities and extensive support from the Secretariat. Consequently, holding meetings in other countries would greatly increase costs. The Secretariat's policy was that the host country would have to cover these extra costs.

155. The Representative of French Polynesia suggested that RTMF meetings be held after other fisheries meetings, such as SCTB, so that they could review the results and recommendations of these meetings. The Fisheries Programme Manager recognised the need for promoting information flow between RTMF and these meetings, but noted that holding the RTMF in March allowed RTMF recommendations to be noted by FFC and received by CRGA and the South Pacific Conference.

156. The Representative of Western Samoa asked the Secretariat to circulate working and background papers for the RTMF well in advance of the Meeting. The Representative of American Samoa supported this suggestion. He then suggested that the RTMF be convened in the week prior to the first scheduled meeting of CRGA in 1996, arguing that such a schedule would resolve the concern of the Secretariat at holding RTMF outside Noumea because of the cost involved in the movement of the interpretation/translation staff. This arrangement would also facilitate information flow from RTMF to CRGA. The Fisheries Programme Manager agreed on the benefits of this arrangement, but pointed out that CRGA required RTMF recommendations two months before the CRGA.

157. The Representative of Palau thanked the Secretariat for the material presented at the Meeting, and asked whether interested participants could receive informal briefings immediately before RTMF to bring them up to date on important issues. He considered that the technical sessions were too short. He also asked the Meeting to consider extending the length of RTMFs. He suggested that the Secretariat endeavor to prioritise presentations to help participants focus on the most important issues. The Fisheries Programme Manager agreed with these suggestions, indicating that workshops held in years between RTMFs might help to fill the gap left by biennial RTMFs.

158. The Representative of Australia commented on the Meeting structure, noting, for example, that albacore had been covered under several agenda items. He asked the Meeting to consider other ways of structuring RTMFs that would assist the Meeting's flow and avoid repetition. The Fisheries Programme Manager agreed to prepare a paper of options on different formats for RTMFs and circulate this to member countries.

159. The Representative of French Polynesia agreed with Palau's request for the Secretariat to circulate documents well in advance of RTMFs. He suggested that this would help participants to identify important issues that would be considered by the Meeting.

160. The Meeting agreed to hold RTMF 26 in March 1996.

AGENDA ITEM 15 — OTHER BUSINESS

161. The Representative of Western Samoa noted that the structure of the CFP seemed to change dramatically from year to year. The Coastal Fisheries Coordinator told the Meeting that the structure diagram presented in Working Paper 1 attempted to illustrate the relationship between components of what was essentially a dynamic programme. Over the years, a variety of influences

had affected the programme's structure: the review of management systems, employment, variations in country priorities emanating from RTMFs and changes in funding.

AGENDA ITEM 15 — ADOPTION OF REPORT AND CLOSE OF MEETING

162. The Meeting examined the draft report page by page. Following further discussion on some of the items and after making some amendments, the Meeting adopted the report.

163. Mr Sione Mangisi, Representative of Tonga, offered the closing prayer.

164. The Chairperson expressed his appreciation to the participants and the Secretariat and made special mention of the drafting committee, the interpretation/translation section, the printery, the secretarial staff, the organisers of the successful fisheries barbecue and all the other members of the Secretariat who had helped make the Meeting a success. He then declared the Meeting closed.

IV. RECOMMENDATIONS

Recommendation No. 1

The Meeting noted that arrangements were in progress for implementation of the review of the roles of those South Pacific regional organisations whose mandate involves marine resource development and management. Recognising the broad regional focus of the Oceanic Fisheries Programme and its importance in relation to the continuing provision of scientific advice regarding regional tuna fisheries, the Meeting **recommended** that the Secretariat take appropriate action to ensure that the institutional review incorporates consideration of the programme's institutional arrangements, to ensure that programme efficiency and cost-effectiveness are maximised in the long term.

Recommendation No. 2

The Meeting noted that attempts to secure longer-term funding commitments to support ongoing operation of the Oceanic Fisheries Programme had been only partially successful, with the result that complete funding could only be assured for one more year. The Meeting **recommended** that senior executive staff of the Commission take urgent action to locate and secure additional sources of funding to sustain the base programme. Fundamental to the Programme, and to the long-term interests of fishery research and management in the region, was the maintenance of the statistical monitoring function, a priority strongly emphasised by the Fifth Meeting of the Standing Committee on Tuna and Billfish. RTMF 25 stressed that highest priority must be given to ensuring continuity of that database.

Recommendation No. 3

The Meeting noted that, in December 1994 in Honiara, the Forum Fisheries Agency would convene a multi-lateral, high-level meeting on Western Pacific tuna fisheries, involving Agency members and Distant Water Fishing Nations, and that the Agenda would include items addressing status of tuna stocks and data/research needs in support of stock assessment. The Meeting **recommended** that the Secretariat ensure that the Oceanic fisheries Programme provide any scientific support necessary for the deliberations, and requested appropriate complementary input on the issues by the Standing Committee on Tuna and Billfish.

Recommendation No. 4

Noting the various areas of interest common to the SPC's Oceanic Fisheries Programme and similar activities in French Polynesia, the Meeting **recommended** that the possibility of developing a joint applied tuna research programme be investigated. The programme could deal with the development of the large oceanic fisheries and that of local tuna fisheries.

Recommendation No. 5

The Meeting noted with extreme disappointment that Recommendation 11 from RTMF 24 which urged the South Pacific Conference to reinstate full core funding support to the Deep Sea Fisheries Development Project as of 1993, had been deferred by two successive meetings of CRGA, and then had not been

taken into account during the restructuring of the Commission's budget. The Meeting **recommended** that CRGA give priority to consideration of the issue and, in light of the importance of fisheries resources to the island countries and very high priority placed on this project by RTMF 25, make every effort to increase the level of core budget support to the Deep Sea Fisheries Development Project as of 1995.

Recommendation No. 6

The Meeting further noted that it would be useful to review member countries' and territories' present expectations of the Deep Sea Fisheries Development Project and determine the status of national capacities to implement capture fishery development projects. This would assist the Secretariat to determine the type and extent of support likely to be needed by member countries in the longer term, and make appropriate adjustments to the *modus operandi* of the Project to cater for these needs. The Meeting **recommended** that the Secretariat undertake a such a needs review, preferably using external expertise and extra-budgetary funding if these were available, and that the review findings be reported to CRGA 21 in October 1994, when they could be considered alongside Recommendation No. 5.

Recommendation No. 7

The Meeting re-stated the importance of the SPC Women's Fisheries Development Project, which had provided valuable support to a number of national level women-in-fisheries initiatives. The Meeting **recommended** that the Secretariat take all possible action to reinstate Canadian funding support for this important project, or, failing this, attempt to identify an alternative source of funding for it.

Recommendation No. 8

Noting the lack of success by the Secretariat in securing funding for the establishment of the Regional Post-harvest Centre and the unlikelihood of such funding becoming available in the foreseeable future, the Meeting strongly **recommended** that, as part of a new strategy for bringing about the aims of the project, the Secretariat request USP to assume responsibility for some project activities by appointing a Lecturer in Post-harvest Fisheries, and by providing for the incorporation of post-harvest teaching and research facilities in any new building that may ultimately be constructed to house the Marine Studies Programme.

Recommendation No. 9

The Meeting further **recommended** that, as part of the same new strategy, the Secretariat replace the five (5) positions originally envisaged as part of the Regional Post-harvest Fisheries Centre with one professional and one administrative position within the Post-harvest Section. These officers would take over responsibility for vocational and technical training activities, and for applied research in support of national post-harvest development activities, as originally envisaged within the RPFC.

Recommendation No. 10

In considering the work programme of the Fisheries Training Section, the Meeting noted that the diverse range of activities undertaken by the Section reflected the wide-ranging training and educational needs of the region's fisheries sector. The Meeting endorsed the work programme of the Fisheries Training Section and **recommended** that the Secretariat continue its efforts to:

- support national fisheries training and educational institutions and human resource development initiatives;
- develop and coordinate national and regional initiatives in standardising fishing vessel crew certification;
- implement organisational and enterprise management training initiatives;
- coordinate and seek appropriate funding to facilitate development of a vocational fisheries certificate programme suitable for implementation in national technical institutions;
- support and develop public awareness of safety-at-sea issues, particularly through the provision of media resource materials such as videos and posters.

Recommendation No. 11

The Meeting expressed its support for the joint SPC/New Caledonia/French Polynesia project provisionally entitled 'Application of Remotely Sensed Information to the Management of Pacific Island Reef and Lagoon Fisheries' and **recommended** that the Secretariat take all necessary action to secure funding so that the project could be implemented.

Recommendation No. 12

The Meeting expressed its appreciation of the valuable contribution made by the UK-funded Inshore Fisheries Research Project and the Fish Handling and Processing Project, both of which were due to conclude in June 1994. The Meeting strongly supported the objectives of the proposed Integrated Coastal Fisheries Management Project (ICFMP), for which extra-budgetary funding had been sought from the Government of United Kingdom, as a means of building on the work of these two valuable projects. The Meeting **recommended** that the Secretariat take all action necessary to secure funding for this project from the UK as soon as possible.

Recommendation No. 13

The Meeting noted that the eventual level of donor funding available for the ICFMP, and possibly other extra-budgetary funded projects, would depend not only on the extent to which the countries involved were committed to the objectives of the programme, but also on the extent to which they showed that commitment by some tangible contribution towards its cost. The Meeting **recommended** that, on return to their countries, delegates raise the issue of member countries' contributions to the cost of the programme with the appropriate authorities, and that this issue be discussed in more depth at CRGA 20 in May 1994.

Recommendation No. 14

Noting the disease risk posed by increasing numbers of transfers of exotic aquatic species into the Pacific Islands, the Meeting noted also the *Interim Guidelines and Principles for Regional Aquatic Animal Quarantine* detailed in Annex 2 of Working Paper 11 towards the development and harmonisation of aquatic animal quarantine mechanisms in the region, and **recommended** that the Secretariat monitor progress in the development of Pacific Island quarantine mechanisms to enable the *Interim Guidelines* to be reviewed at the next Regional Technical Meeting on Fisheries.

V. DOCUMENTS PRESENTED TO THE MEETING

Working Papers

- WP.1 SPC Fisheries Programme overview
- WP.2 Tuna and Billfish Assessment Programme: Work Programme Review 1992 – 1993 and Work Plan 1994
- WP.3 Report on SPC Coastal Fisheries Programme activities, August 1992 – March 1994
- WP.4 Management training for the Pacific Island fisheries sector: a brief examination of options
- WP.5 Towards the introduction of a regional standard for Pacific Island qualified fishing deckhand certificate training: a review of activities and progress, August 1992 – August 1993 and proposals for future developments
- WP.6 Sixth Standing Committee on Tuna and Billfish
- WP.7 Review of regional institutional arrangements in the marine sector – status report
- WP.8 The present status of coastal fisheries production in the South Pacific Islands
- WP.9 Fifth South Pacific Albacore Research Workshop Report
- WP.10 Sixth PIMRIS Steering Committee Meeting Report
- WP.11 Introduced species, quarantine requirements, and ecological risks
- WP.12 Establishment of a regional post-harvest fisheries centre – proposed change of approach
- WP.13 New project proposals in integrated coastal fisheries management and remote sensing/geographic information systems

Information Papers

- IP.1 Les langoustes, *Panulirus penicillatus* and *Panulirus longipes*, de l'île des Pins (Nouvelle-Calédonie), croissance, mortalité et rendement par recrue
- IP. 2 La pêche artisanale à Ouano (La Foa, Nouvelle-Calédonie) : données sur la biologie des pêches du bec-de-cane Empereur: *Lethrinus nebulosus*
- IP.3 La pêche à la langouste à Lifou
- IP.4 Croissance du perroquet à bosse (*Bolbometopon muricatum*) et son exploitation en Nouvelle-Calédonie
- IP.5 Country Statement – Cook Islands
- IP.6 Exposé national – Nouvelle-Calédonie
- IP.8 SPC Coastal Fisheries Programme – Capture Section activities, August 1992 – March 1994
- IP.9 SPC Coastal Fisheries Programme – Post-harvest Section activities, August 1992 – March 1994
- IP.10 SPC Coastal Fisheries Programme – Training Section activities, August 1992 – March 1994
- IP.11 SPC Coastal Fisheries Programme – Resource Assessment Section activities, August 1992 – March 1994
- IP.12 SPC Coastal Fisheries Programme – Information Section activities, August 1992 – March 1994
- IP.13 Introductions of aquatic animals to the Pacific Islands: disease threats and guidelines for quarantine
- IP.14 Les recherches halieutiques menées par l'ORSTOM de Tahiti en Polynésie Française
- IP.15 Country Statement – Fiji
- IP.16 Country Statement – Federated States of Micronesia
- IP.17 Country Statement – Guam
- IP.18 Country Statement – American Samoa

- IP.19 Country Statement – Australia
- IP.20 Travaux réalisés par le Centre ORSTOM de Nouméa dans le domaine halieutique
- IP.21 Development of a novel tuna product in Kiribati
- IP.22 Draft outlines for short course programmes in fisheries administrations and fishing enterprise management
- IP.23 Update on aquaculture support activities conducted by the SPC Fisheries Programme
- IP.24 Processing novel tuna products in the Pacific
- IP.25 The SPC/Indian Ocean FAD raft – an inexpensive, storm-resistant raft for the Pacific Islands
- IP.26 Country Statement – Tonga
- IP.27 Third FFA//SPC Colloquium (Honiara, Solomon Islands, 7 February 1994). Record of proceedings
- IP.28 Country Statement – Solomon Islands
- IP.29 Country Statement – Papua New Guinea
- IP.30 Country Statement – Tuvalu
- IP.30 Exposé national – Polynésie française
- IP.31 Country Statement – Northern Mariana Islands
- IP.32 A preliminary report on the Tonga small-scale tuna longline project
- IP.33 Country Statement – Kiribati
- IP.34 Fisheries cooperation activities by the OFCF in the Central Western Pacific
- IP.35 Country Statement – Marshall Islands
- IP.36 Starting up a small-scale tuna longlining project – a case study from Papua New Guinea
- IP.37 Management of multi-species tropical marine fisheries. Fisheries Management Science Programme of the ODA
- IP.38 Overseas Development Administration. Renewable natural resources research strategy and fisheries. Summaries of the aquaculture, fish genetics and post-harvest research programmes
- IP.39 Overseas Development Administration. Renewable natural resources research strategy and fisheries and the fisheries management science programme
- IP.40 Interaction between artisanal fishermen and FADs

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REPORT OF TECHNICAL SESSIONS

AGENDA ITEM 3 – TECHNICAL SESSION 1

3.1 Review of Western Pacific tuna fisheries

A review of Western Pacific tuna fisheries was provided by the Oceanic Fisheries Coordinator, to set the scene for the review of the current status of tuna stocks in the region and the overview of the work of the Oceanic Fisheries Programme. Since the historical development of the fishery from 1980 to the 1990s had been reviewed at RTMF 24, the presentation focused on total catch by gear, species, fleet and area for 1993, with brief reference to 1992 and 1991 catches. Mention was made of political and market factors where these have influenced the fishery, e.g. implementation of MTCs, the Palau Arrangement, possible additional multilateral access agreements, recent price increases etc.

The total catch in the SPC area declined during 1993 for the second successive year, from the all-time high of 1.13 million tonnes in 1991, to 1.09 mt in 1992, and an estimated 0.9 mt in 1993 (final figures are not yet available for some fleets). This was primarily due to a reduction in the purse-seine catch of around 150,000 t, probably caused by a combination of lower prices early in the year and the requirement to transship in designated ports in the region. This requirement led directly to a reduction of 15–20 per cent in days fished by several fleets. The estimated catch in the Western Pacific area during 1993 was approx. 1.3 mt, representing over half the global catch of primary market species of tuna during 1993. This global catch also decreased by 4–5 per cent during 1993.

The purse-seine catch again provided nearly 80 per cent of the total catch by volume (approx. 710,000 t, compared with 876,000 t in 1992 and 871,000 t in 1991), but with all four major fleets having reduced catches. The US fleet contributed the largest catch (184,000 t) followed by ROC (166,000 t), Japan (147,000 t) and ROK (145,000 t). Regional purse seine vessels made an increased contribution to catches. Pole-and-line catches showed a slight reduction overall, despite a welcome increase in the Solomon Islands catch; longline catches almost certainly increased as a result of increased small vessel activity in the region.

Purse-seine fleet activity showed a geographical distribution similar to that of 1992, but was expected to change considerably with the cessation of the prolonged El Nino event at the end of 1993. There was a proliferation of domestically-based sashimi longline activity throughout the Micronesian area.

Skipjack catch in the SPC area declined during 1993 (from 732,000 t in 1992), whereas the overall yellowfin catch was likely to show little change (266,000 t). Both bigeye and albacore catches showed slight increases probably due to the increased effort directed at them. Catch rates (CPUE) trends were considered in the presentation on status of stocks (below).

The outlook for 1994 appeared good following the end of El Nino, with purse-seine catches up by 15 per cent during the first few months of 1994, prices holding above \$900/t, and market growth still occurring in some countries.

3.2 Status of tuna stocks in the Western Pacific

Although the RTMF 24 had been provided with preliminary results of the RTTP-based assessment of skipjack and yellowfin stocks in the WTP, the presentation by the Oceanic

Fisheries Coordinator was intended to provide RTMF 25 with a more detailed overview of the status of stocks of the four main tuna species (yellowfin, skipjack, bigeye and albacore). This had been prepared and presented for the first time to SCTB6, and would now be an annual assignment as assessments were refined and upgraded with acquisition of more information. In compiling the status reports, stock definition, fishery indicators (based on available catch/effort data), and assessments based on tagging data would be included. It should be noted that conventional stock assessments based solely on catch/effort and associated data are generally not possible at present.

Yellowfin annual catches in the WTP now exceed 400,000t, and had doubled since 1985; eastern and western Pacific stocks were assumed. Purse seine catch-per-unit-of-effort (CPUE) data for Japanese and US vessels showed no clear trend, whereas the longer longline series showed a downward trend in the 1990s; the interpretation of this was however, problematical, particularly as a similar decline had been observed in the past. The tagging data analysis, intended at this stage to provide an 'average' regional picture and referable to the surface fishery in the first instance, indicated that, despite recent dramatic increases in total catch, exploitation rates remained moderate. Using two criteria to predict the impact of increased catches on the stock, it was concluded that further increases in the surface yellowfin catch are sustainable, and a precautionary harvest target of 500,000t might be established.

Skipjack provided over 70 per cent of the total catch (over 1 million t in 1991); the stock structure was not clearly established, but it was convenient to treat the WTP as a single stock. No clear trends, other than upwards in some cases, were evident in the available CPUEs. The tagging data indicated modest exploitation rates, similar to yellowfin (0.15–0.16). It had been encouraging to note that these estimates were exactly those that could be predicted from increases in catch since the SSAP estimates, based on tagging experiments 10 years earlier. It was concluded that current skipjack catches were capable of considerable expansion. Concerns with the size of fish harvested in some areas by some fleets had been raised; the results of the PTRP work in the Philippines, where ERs are much higher, were noted.

Bigeye, the most valuable species, also remained the least well-known species, biologically. WTP annual catches were of the order of 50,000t. A Pacific-wide stock was usually assumed. Production and age-structured models based on longline data suggested that current Pacific catches (100-150,000t) were sustainable. The tagging data were insufficient for assessment purposes, but it was noted that return rates were no higher than those for yellowfin and skipjack. It was concluded that current catches were probably sustainable, but more information was needed on this valuable species, especially as juvenile catches were not fully accounted for.

Albacore, a temperate species (unlike the previous ones), was considered to have separate north and south Pacific stocks. Catches of the species had peaked during the driftnet years in the South Pacific at approximately 50,000t, and were now much lower. Longline CPUEs had declined since 1986, as had troll CPUEs in more recent years, although reasons remained unclear. It seemed clear that environmental effects would need to be taken into account. A length-based age-structured assessment, using all available data, was currently being applied. Tagging data had been useful for examining movement and growth, but as yet provided insufficient data for assessment of stocks. A comprehensive stock assessment would be presented to SPAR later in 1994.

AGENDA ITEM 5 – TECHNICAL SESSION 2

5.1 South Pacific Regional Tuna Resource Assessment and Monitoring Project (SPRTRAMP)

The Oceanic Fisheries Coordinator updated RTMF 25 on progress in establishing the South Pacific Regional Tuna Resource Assessment Project (SPRTRAMP). The proposal built on the work of the tuna resource assessment component of the Tuna and Billfish Assessment Programme (TBAP), increasing involvement in port sampling, catch monitoring, biological research and training.

The project would base locally-recruited port-sampling officers in key transshipment and unloading ports for tuna fleets. The port samplers would document landings, gather logsheets, collect tags and gather size-frequency, species-composition and other biological samples from the catches. The first stage of the port-sampling programme would be based in regional ports, but port samplers might eventually be placed in ports outside the region that handled tuna caught in the SPC area.

The Forum Fisheries Agency (FFA) already ran an observer programme on US purse seiners for surveillance, compliance monitoring and biological sampling. The SPRTRAMP would extend scientific observer coverage to other tuna fleets and enable more detailed biological data to be collected. It would base a 'Port Sampling and Observer Manager' in Noumea to oversee the Observer and Port-sampling Programmes.

Small-scale field projects to investigate localised interaction and stock assessment questions would also be undertaken. The SPRTRAMP would support research internships of ACP nationals undertaking post-graduate degrees that would take advantage of OFP's facilities and expertise in stock assessment and fisheries biology.

The SPRTRAMP would also support the continuing analysis of RTTP results on fishery interaction and stock assessment. This would include development of stock assessment techniques, comprehensive assessments of each tuna stock, and regular stock status reports. The SPRTRAMP would enhance OFP's database and analytical capabilities by contributing funds for maintenance of existing systems and the purchase of new computers and software.

RTMF 22 (1990) and the 30th South Pacific Conference had supported the submission of the Project's proposal for funding under Lomé IV. After several delays, the ACP/EC Ministerial Meeting in June 1992 had approved the SPRTRAMP as a high-priority project for the Natural Resources Section of the Pacific Regional Indicative Programme. Following favourable review of the Lomé III-funded Regional Tuna Tagging Programme (RTTP) in March 1993, a Financing Proposal had been finalised. The financing agreement was signed at the current meeting (RTMF 25), allowing establishment of the five-year project.

AGENDA ITEM 6 – TECHNICAL SESSION 3

6.1 Status of Pacific Island inshore fisheries

The Inshore Fisheries Scientist and Fisheries Resource Adviser referred to Working Paper 8, which summarised information on the production of coastal fisheries of the SPC island member countries and reviewed the different sectors of fisheries in the coastal zone. Following a short introduction by the Fisheries Resource Adviser, the Inshore Fisheries Scientist discussed magnitude of coastal fisheries landings from the Pacific Islands. The compiled data suggested that these now amounted to about 104,000 t, worth about US\$ 243,700,000 if sold at current domestic market prices. About 80 per cent of these landings were for subsistence, with the

remainder sold commercially. Near-shore fin-fish production was driven mainly by population increase, and islands where population growth continued unhindered might face problems with overfishing in the future. Commercial fisheries for mother-of-pearl shells were dependent mainly on the narrowly-based demand from overseas garment industries. Beche-de-mer fisheries were largely dependent on the demand from China, where beche-de-mer had become a useful barter medium for avoiding currency restrictions in overseas trading and now had a huge demand base.

The Inshore Fisheries Scientist concluded by reviewing the future of coastal fisheries in the region and suggested that development emphasis was likely to move away from deep-slope snapper fisheries and towards pelagic fisheries where the resource base is not so limited. The need to increase the flow of information from coastal fisheries to allow comparisons between countries was also addressed as a mechanism to improve fisheries management prospects for little extra investment. This might be accomplished by establishing a central data depository at the SPC which would service the needs of member countries that required comparative information for fisheries management

The discussion on this working paper was limited in time. However, the Australian Representative congratulated IFRP on this summary of the status of Pacific Island coastal fisheries and suggested that the national landings summaries in the appendix to the working paper would be most useful for fisheries development and management. These summaries could form the basis for country statements at future RTMFs.

Also included in this session was a short presentation from Dr Simon Jennings of the Centre for Tropical Coastal Management Studies at the University of Newcastle-upon-Tyne (UK). Dr Jennings had been studying the yields of artisanal fishing at several sites in Fiji in relation to biomass estimates made from underwater visual census observations. This component of the project in Fiji had been completed and field work would continue at other sites in the Pacific. The results of the study in Fiji were currently in press.

AGENDA ITEM 8 – TECHNICAL SESSION 4

8.1 Starting up a small-scale tuna longlining project – a case study from Papua New Guinea

An SPC Consultant Masterfisherman reported on the East New Britain Pilot Tuna Longline Project being carried out in Papua New Guinea as a collaborative effort between the Government of Papua New Guinea, the Government of East New Britain (ENB) and USAID. The aim of the project was to demonstrate that sashimi-grade tunas could be landed at Rabaul, ENB, using a small (15 m) vessel fitted with a monofilament reel and using a local crew. The presentation addressed Information Paper 36 and showed slides of the project site, installation of longline gear and fishing operations.

Project fishing operations to date had been very successful. A CPUE of over 100 kg per 100 hooks of the target species, *Thunnus albacares* and *T. obesus*, had been achieved, with a total catch of over 9.5 t on 9,400 hooks for a seven-month period (Aug. 1993 – Feb. 1994).

The project vessel *Kuriap* was refurbished and then fitted with a 13-mile monofilament longline drum and all ancillary fishing gear including a new GPS, radio direction finder, and colour sounder. Additional necessary items that were manufactured locally included a davit for hauling operations and open chocks, or line-guides, for setting.

Details of deck layout for setting and hauling were explained. Baiting was shown, including close-ups of the baitfish and hook position. Arrangement of the blocks or pulleys showed how

the line was directed from the reel aft to where baiting took place and the re-arrangement of this gear for hauling.

Fishing operations, including gaffing and landing tuna and marlin, were shown. Catch handling, including bleeding and icing of fish, was also described. Fish were shown being off-loaded, weighed and further processed at the project headquarters, the Kokopo Fisheries Project.

A number of technical questions followed, relating to the costs of the equipment used, aspects of the fishing techniques, etc. Answers to most of these questions were contained in a more detailed written presentation in Information Paper 36. The Representative of Fiji asked whether the system could be scaled down still further for use on very small boats such as those fishing round FADs in Fiji. The Fisheries Development Adviser noted that earlier SPC work, notably that carried out in Western Samoa, had resulted in the development of vertical longline systems that were suitable for use at this level. He also referred delegates with an interest in this topic to Information Paper 32, which describes parallel work, also done via the USAID PIMR Project, by RDA International Ltd in conjunction with the Government of Tonga.

The Representative of Papua New Guinea thanked the various parties involved, including the staff of SPC and USAID, for the support they had provided to the project, which had not always been easy. He hoped that growing interest by PNG fishing operators in adopting the fishing techniques demonstrated by the Project would be spurred by success in the next project phase, which would be to undertake trial exports of the catch to potentially lucrative overseas sashimi tuna markets.

The Representative of Palau noted that his Government had recently taken delivery of a new vessel that would be used for longlining, and that he intended to seek SPC assistance and advice in fitting up the vessel for operation.

The Representative of Tonga advised the Meeting that it was planned to reallocate the vessel currently in use by the Tonga/USAID/RDA Project in Vava'u for use as a training vessel for local fishermen at the conclusion of the project. He asked that detailed information from the PNG project be made available for use within a longline-fishing training programme that would be established in Tonga. He also noted that, as a result of the project, at least one local commercial fisherman had established a small-scale commercial longlining operation and was currently achieving average landings of over 2 t per two-day trip.

The Fisheries Development Adviser concluded the session by recalling that its purpose had been to illustrate the very point raised by Tonga, that small-scale tuna longlining was indeed technically feasible in remote locations using only basic equipment and facilities. He noted that many Fisheries Departments had under-utilised small vessels that could perhaps be put to potentially profitable use in this type of project.

8.2 Development of the SPC/Indian Ocean FAD raft – an inexpensive, storm-resistant raft for the Pacific Islands

SPC Masterfisherman, Peter Watt, referred to Information Paper 25 in describing development of a new inexpensive, storm-resistant FAD raft. He reported that the basic raft design had originally been developed in the Indian Ocean. Rather than a single hull, as has been commonly used in the Pacific, it consisted of a string of hard plastic, pressure-resistant floats. The floats were strung on a variety of materials including nylon, combination wire rope, and stainless steel cable. The use of pressure-resistant floats was considered necessary because rafts deployed in the Indian Ocean were reported to have submerged to considerable depths in strong currents and storms. While the design apparently worked well, it was expensive because of the high cost of the pressure floats. A single unit incorporating 30–50 floats cost approximately US\$ 1,500.

The Capture Section had deployed a number of FADs with Indian Ocean rafts in the Pacific region and observation of the rafts indicated no tendency for them submerge. These experiences led the Section to consider using purse-seine floats as an alternative to the expensive pressure floats. Purse-seine floats had the advantages of being strong, but not brittle, as well as inexpensive. Second-hand floats could be purchased for as little as US\$ 1.00 and new floats for US\$ 3.50.

Another problem with the original Indian Ocean raft had been finding suitable materials on which to string the floats. Various materials were used, but problems with corrosion, expense or vandalism made them impractical. A PVC-coated steel wire rope manufactured in New Zealand solved the problem. The 16 mm, 7-strand steel wire rope had an 8 mm thick coating of PVC. The PVC was bonded to the wire cable and is watertight. The cost of a 40 m length of cable was US\$ 300.

The total cost for rigging the new raft, including 50 purse-seine floats, a 40 m length of PVC-coated wire cable and fittings was US\$ 350 – US\$ 500, compared to the US\$ 1,500 cost of the original Indian Ocean raft.

The new raft had a number of advantages over other flotation systems in use in the region. The diameter of the mooring ropes could be reduced as the string of floats reduced stresses on the upper mooring sections. In addition, there was no need for an upper mooring chain; the end of the PVC-coated wire cable could be shackled with a swivel directly to the mooring rope. These advantages represented a considerable saving.

The new raft units were deployed in four Pacific Island countries in 1993: Fiji, Palau, Tokelau and Western Samoa. Reports regarding the rafts' performance were encouraging but their longevity still had to be proven as the first FAD of this design was deployed in April 1993.

AGENDA ITEM 12 – TECHNICAL SESSION 5

12.1 Processing novel tuna products in the Pacific

The Post-harvest Fisheries Section has been providing advice and assistance to member countries in the area of processing novel tuna products in the Pacific since 1989. The objectives of the project are to help the more isolated island communities establish small-to-medium-scale income generating opportunities by turning locally caught tuna into value-added products that can be sold on the domestic market or exported. The aim of the technical session was to outline progress made over the last five years and to encourage a discussion on the future direction of the project.

An historical account of the accomplishments of the project was provided by the Post-harvest Fisheries Adviser. This is described in more detail in Information Paper 24. Tokelau's trial tuna processing and marketing project, which began in late 1990, had provided much of the impetus and motivation to expand the activities of the project into other countries and into formal research areas. Although the manufacture of Tokelau's **Teriyaki Tuna** (marinated dried tuna) had been temporarily suspended at the end of 1992, much had been learned about processing such products in such isolated places, and about marketing the product, especially the need to direct the marketing effort towards Asian consumers, in particular Japanese tourists. Other countries now producing similar products included Kiribati, with two commercial operators, and the Marshall Islands, which had two operators in Majuro and numerous small-scale processors on one outer island.

Formal research activities were sponsored by the Australian Centre for International Agricultural Research (ACIAR) under a collaborative project between SPC and ACIAR.

Studies were conducted into the feasibility of the project in the areas of tuna product formats that could conceivably be manufactured in the Pacific Islands and the marketing potential for such products. These studies led to the commissioning of two product development investigations which were completed at the end of 1992. The first investigation developed improved processing methods for Tokelau's tuna products, whilst the second study investigated the possibility of making acceptable dried products from minced skipjack tuna flesh. Reports were available for each of these activities.

Samples of marinated dried tuna or tuna jerky were passed around for participants to examine. These consisted of tuna jerky from Kiribati plus tuna and shark jerky from the Marshall Islands.

In the discussion that followed, interest in the work of the project was expressed by a number of country representatives. The Representative of Guam felt that there was considerable scope for utilising by-catch from the long-line tuna fleet for jerky production. The Representative of Solomon Islands was eager to know more about the production of jerky products from different fish species such as shark, an area which the Post-harvest Fisheries Adviser said he would like to include in future project activities, given that producers in the Marshall Islands were able to make acceptable products from shark for the domestic market. However, he warned that shark jerky products might not be as acceptable in overseas markets.

The Representatives of Vanuatu and Palau were keen to acquire information and advice on producing high-value smoked tuna products for tourist markets; this would be especially useful for women's groups. The Representative of Papua New Guinea referred to training workshops for women who had already benefited from having been taught the techniques for making fish jerky. He felt that opportunities existed in PNG for small businesses based on fish jerky manufacture.

The Representative of the Northern Mariana Islands requested information on the type and source of equipment and materials for jerky production. In response, the Post-harvest Fisheries Adviser explained that most items could be purchased locally. However the plastic bags into which the product was sealed must exhibit good barrier properties to protect the product from moisture and oxygen uptake. This type of packaging was not usually available locally and had to be obtained from a commercial overseas supplier.