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REPORT ON SPC COASTAL FISHERIES PROGRAMME ACTIVITIES IN 1990/1991

(Paper prepared by the Secretariat)

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1. INTRODUCTION

1. This paper briefly outlines the activities carried out by the Coastal Fisheries Programme of the South Pacific Commission from 1 July 1990 to 30 June 1991, and is presented to facilitate discussion when the Fisheries Work Programme is reported in detail under agenda item 4.

2. The Coastal Fisheries Programme includes five related projects as follows:

Inshore Fisheries Research Project
Fisheries Information Project
Deep Sea Fisheries Development Project
Fish Handling and Processing Project
Regional Fisheries Training Project

3. The collective aims of the Programme are to assist with development of small to medium-scale locally-based fisheries through programmes of:

formal and informal training;
demonstration and development of gears and techniques;
technical assistance in a range of post-harvest areas; and
research and advice on aspects of resource management, and information services.

4. The accomplishments and undertakings of each project during the past twelve months are described below, and where possible an indication of future directions or planned new activities given. Secretariat action taken in response to the recommendations passed by the 22nd RTMF is reported in WP 1.

2. INSHORE FISHERIES RESEARCH PROJECT

2.1 General

5. The Inshore Fisheries Research Project commenced operations in January 1988 with extra-budgetary funding provided by the UK government. The Project comprises two scientific positions (Garry Preston and Paul Dalzell) and one administrative post (Kay Legras). Funding was initially allocated for a three-year cycle which terminated in March 1991. Following a mid-term review carried out by the UK Overseas Development Administration and the British Development Division in the Pacific, further funding support has been allocated for an additional two-year period, up to March 1993.

6. Also associated with the IFRP is the Fisheries Information Project (FIP), within which the single staff position of Fisheries Information Officer is funded by the Government of France. This project is reported separately in section 3.

7. The first activity of the IFRP was the organisation of the SPC Workshop on Pacific Inshore Fishery Resources (IFRW), in March 1988. Since then, IFRP staff, consultants, trainees and funds have supported 23 specific national-level resource assessment projects, plus numerous smaller assignments, as well as 7 regional resource assessment activities, and longer-term information gathering and dissemination activities.

8. Since the inception of the project twenty-five Pacific Island fishery workers have participated in IFRP field activities, either as local counterparts, overseas technical assistants, or attachment trainees. Over one hundred participants took part in the 1988 Workshop on Pacific Inshore Fishery Resources, and 45 participants in the 1991 Workshop on Trochus Resource Assessment, Development and Management reported in section 2.3.4. Four national fisheries officers have undertaken attachments at SPC headquarters, 2 during the reporting period in question (see section 2.2.4.), working on specific issues of national importance in their home countries.

9. Project activities carried out between 1 July 1990 and 30 June 1991 are described in more detail below. Likely future directions, and, where known, specific future activities, are also described.

2.2 National-level activities

10. A principal objective for establishing the IFRP was to provide support to SPC member countries in planning, executing and reporting projects aimed at gathering and interpreting the information required for effective management of fishery resources. Six projects of this nature were undertaken during the period under discussion, as shown in table 1 below.

Table 1. IFRP field assignments for the period August 1990 to August 1991.

Country Dates Scientist/ Consultant	Primary objectives	Activities
Marshall Islands November 1990 Julian Dashwood, Consultant (Ministry of Marine Resources, Cook Islands).	Assess feasibility of pearl-oyster culture activities at Namorik atoll and assist Island Council establish demonstration farm.	Consultations with Island Council and national government, collection of wild shell and establishment of pilot farm. Recommend framework for development of national pearl-oyster culture industry.
Papua New Guinea February - March 1991 Paul Dalzell, Inshore Fisheries Scientist, SPC.	Assist PNG Fisheries Dept staff in data analysis and report production for past and ongoing research projects.	Field visits to Fisheries stations in Port Moresby, Kavieng and Wewak to assist local staff in data interpretation, report planning and production.
Tonga March 1991 Paul Dalzell, Inshore Fisheries Scientist, SPC.	Support completion of 5-year research project aimed at developing management recommendations for deep-bottom fishery.	Assist with analysis and interpretation of catch data from Tongan commercial deep-bottom fishery.
Palau March 1991 - ongoing Garry Preston, Senior Inshore Fisheries Scientist, SPC.	Quantify extent of major marine habitat types and prepare preliminary assessments of key resources in Palau.	Assist in acquisition, ground-truthing and interpretation of satellite data to provide habitat area estimates.
Papua New Guinea May 1991 - ongoing Garry Preston, Senior Inshore Fisheries Scientist, SPC.	Sea cucumber stock assessment. Research on sea cucumber growth and movement. Improvement of beche-de-mer landing and export statistics.	Support to beche-de-mer survey work in four PNG provinces. Assistance with mark-recapture experiments in Kavieng. Preparation of beche-de-mer identification poster.
Federated States of Micronesia May - June 1991 Paul Dalzell, Inshore Fisheries Scientist, SPC.	Estimation of standing stocks of inshore reef fish species in selected locations in Yap State.	Assist in design, conduct and data interpretation of stock reduction experiments carried out using traditional fishing methods.
Palau July 1991 Robert Johannes, Consultant (Commonwealth Scientific and Technical Organisation, Australia).	Provide comparative assessment of changes in Palauan inshore fishery and identify marine resource management requirements.	Make observations on fishing grounds and gather anecdotal information from fishermen regarding changes in the fishery over past 10-15 years. Advise government marine resources and legal staff on management of the fishery.

2.2.1 Marshall Islands - Namdrik pilot pearl-oyster culture project.

11. Preliminary survey work by the Marshall Islands Marine Resource Authority (MIMRA) in this atoll suggested stocks of pearl-oysters adequate to envisage their culture as an economic activity. The Commission was requested to provide a specialist to work with the Island Council in setting up a demonstration farm, and to make recommendations to the government on a suitable institutional framework within which such an industry might be developed in the Marshalls. Consultant Mr Julian Dashwood, of the Cook Islands Ministry of Marine Resources, spent 3 weeks on Namdrik during which time he was able to deploy spat collectors, establish a sub-surface pilot farm, and discuss with the people of the island a pearl-oyster management plan for the lagoon. The presence of good stocks of pearl oysters was confirmed, although not in the quantities initially estimated by MIMRA. Specific plans were laid down for the continuation of the programme and for building up the number of spat collectors over the next 12 months.

12. This project was funded jointly with FFA and USAID, who provided substantial quantities of equipment for the establishment of the farm, and logistical support.

2.2.2 Papua New Guinea - fishery data analysis and report production.

13. Staff changes at the senior level in the PNG Fisheries Department's Research Branch have resulted in a loss of editorial and analytical skills which have hampered production of research technical reports. The IFRP was asked to provide support to local staff in clearing some of the backlog of accumulated material for publication in the Research Branch's technical report series.

14. An initial short visit was made to PNG in June 1990 by Inshore Fisheries Scientist Paul Dalzell for discussions with Research Branch staff on the scale of the task, and to prioritise the manuscripts for editing. This was followed by a one month visit in 1991 to Kavieng where Research Branch staff were helped to edit a total of five manuscripts into final drafts for publication.

15. Towards the end of this visit a preparatory trip to Wewak was made to prepare for the next phase of the task. It is expected that a second visit will be made to Wewak in late 1991 or early 1992 to assist with the finalisation of work generated by scientists at this laboratory .

2.2.3 Palau - quantification of marine habitats.

16. In an earlier IFRP visit in October 1989, Senior Inshore Fisheries Scientist Garry Preston assisted Palau Marine Resources Division develop a long-term plan for the assessment and management of inshore fishery resources, and for the gathering of supplementary information on local fisheries needed to monitor its effectiveness. The present project is a direct follow-on which provides support to the implementation of some of the recommendations of the earlier visit.

17. The aim is to provide accurate estimates of the extent of various kinds of marine habitat (seagrass, reefs of various types) or substrate in each of Palau's states as a prelude to estimating potential abundance of key resources, including fish and invertebrates. Initial area estimates have been made by Palau MRD using available maps and charts and a planimeter, but due to the quality of available maps these are largely inadequate. In the absence of aerial photographs over the lagoon, these estimates will be further refined by digital analysis of SPOT satellite images. The images are presently on order but acquisition so far has been hampered by prolonged cloud cover. The New Caledonian Image Processing Laboratory, based at ORSTOM in Nouméa, has kindly agreed to provide analytical support once the images are available. Ground-truthing of the images will take place once preliminary classifications have been completed. It is anticipated that at least another 12 months will be needed to complete this project.

2.2.4 Tonga - analysis of catch, effort and length frequency data from the Tongan deep slope fishery.

18. The Ministry of Fisheries (MF) research monitoring project on the Tongan deep slope fishery entered its fifth year in 1991. This project has been funded by USAID for a five year period that terminates at the end of 1991. Prior to the writing of a project final report, it was necessary as a preparatory exercise to organise and make a preliminary exploration of the data collected over the first four years of the project. After an initial investigatory visit by Inshore Fisheries Scientist Paul Dalzell, the IFRP was asked to host the attachment of two MF research staff responsible for the collection of data from the deep slope fishery with the intention of preparing an interim report on the project.

19. The two MF staff visited Noumea for a 3 week period during March and April 1991 and with assistance from IFRP staff completed a series of analyses that examined changes in catch rates, species composition and size frequencies of the dominant species. An interim report on these analyses and the conclusions from them was written up and all data archived in the form of tables and graphs. This work was used to make initial management recommendations in the light of planned expansion of the present levels of fishing.

20. Travel costs associated with this activity were financed using USAID funds allocated to the Kingdom of Tonga.

2.2.5 Papua New Guinea - bêche-de-mer research.

21. The Kavieng Fisheries Laboratory of PNG's Department of Fisheries and Marine Resources (DFMR) is charged with providing advice to provincial governments on the status and exploitation potential of their marine resources. Four provinces have requested advice on the degree to which they should licence bêche-de-mer exports from their areas.

22. In order to respond to these requests in the short term, the DFMR needed to carry out survey work to estimate the abundance of key species in the areas in question. In the longer term, information on the growth and natural mortality of these species is needed, as well as improved information on exports by species (rather than the limited summary data available at present).

23. The Commission has provided financial and technical assistance to the following activities in connection with this programme: four provincial beche-de-mer surveys; conduct of growth monitoring trials in moveable seafloor cages; tagging experiments; and the production of an identification poster for dried beche-de-mer, aimed principally at fishery inspection officers. When completed, the poster will also have a wider application and will be made available in other parts of the region.

2.2.6 Federated States of Micronesia - Yap reef fish depletion experiment.

24. The purpose of this project was to gather information on the standing stocks and potential yields of reef fish that could be used by the Yap Marine Resource Management Division in formulating a coastal resources management plan for the state. It was anticipated that the information gathered from selected reefs in Yap would also have application to other atoll areas in the region.

25. With the agreement of the Island Council, Woleai atoll was selected for this work, as two efficient fishing methods, community drive-in-net fishing and community spearfishing, are commonly practiced by these islanders. A four week visit to Woleai was made between May and June 1991 by Inshore Fisheries Scientist Paul Dalzell. Working with MRMD staff and the local fishing community, four stock depletion fishing experiments were carried out during this period by drive-in net fishing and spearfishing. These provided information on the density and abundance of numerous species of reef fish on lightly fished and moderately fished reefs. The experimental fishing also generated a large volume of basic biological information on a range of commonly exploited reef fishes from the region.

26. The data from this project is currently under analysis and a technical report based on the work will be distributed in due course.

2.2.7 Palau - development of inshore fishery management plan.

27. Historical information on production from Palau's inshore fisheries is scarce, and there are no reliable statistics on landings or catch-per-unit-effort which can be used to assess changes that may have occurred in the fishery. In attempting to develop a management plan for Palau's inshore fisheries, the Division of Marine Resources (DMR) nevertheless wished to determine the changes that may have occurred in local inshore fisheries during the past 15 years, and in particular to identify those areas in special need of management attention.

28. Dr Robert Johannes, presently of the Australian Commonwealth and Scientific Organisation, was engaged to make an advisory visit Palau in support of this work. Dr Johannes has previously carried out fishery research in Palau and compiled and published information based both on direct observations, and on information gathered from fishermen. Dr Johannes is thus ideally placed to undertake a comparative study in line with DMR's requirements.

29. As the study was just about to start as this document was finalised, it is not possible to report on results at this stage. Dr Johannes' consultancy was financed by UNDP funds allocated to SPC.

2.3 Regional-level activities

2.3.1 IFRP/SPRADP Reef Reseeding Project (August 1988 - ongoing)

30. There is a growing regional interest in the mariculture of juveniles of commercially exploited inshore marine organisms for use in programmes of resource enhancement by reef restocking. However, most attention so far has focussed on aquaculture technology and techniques and the mechanics of producing seed in large numbers. Little work appears to have been done to assess the real effects of juvenile release on wild, exploited populations of tropical reef organisms.

31. Working cooperatively, the IFRP and SPRADP have been undertaking a two-phase research programme to address this issue. The first phase consisted of literature research aimed at reviewing the results of relevant juvenile release programmes carried out elsewhere. A working paper describing some of this research was tabled for discussion at the 22nd RTMF. A technical document based on an expanded version of this paper is in preparation.

32. Phase two of the project was planned to consist of at least one juvenile release and population monitoring experiment, involving one or more interested national fisheries bodies. The first of these took place as part of the Workshop on Trochus Resource Assessment, Development and Management held in Vanuatu in May/ June 1991 (see later). This is reported separately under agenda item 7.4.

33. To further promote a wider understanding of the possible contributions of aquaculture to marine resource enhancement, the Commission is actively participating in the 5th International Conference on Artificial Habitats for Fisheries, to be held in the USA in November 1991. The conference will cover aspects of resource enhancement through artificial habitats (which are an integral part of many successful aquaculture-related reseeded projects) and FADs. The Commission has proposed to organise a small Pacific Islands delegation to attend the Conference, make presentations on relevant fishery enhancement projects taking place in the region, and, importantly, gather information relevant to the interests of the region. The delegation will be required to jointly compile a report on relevant aspects of the conference for subsequent circulation within the region. Nominations to the delegation have already been sought from Pacific Island countries, and a final selection will be made late in August, based on the ability of the nominated individuals to contribute to the aims of the delegation and of the conference.

2.3.2 Analysis of SPC Bottom Fishing Data (January 1989-ongoing)

34. A technical report summarising deep bottom fishing data collected by the SPC masterfishermen between 1975 to 1988 was completed in 1991. The data were analysed to determine regional trends in catch rates and community structure, and their relationships with habitat types and other geographical features. Synopses were compiled for each country of the region, summarising available deep bottom fishing data, to assist countries in assessing the local development potential of these resources as an economic activity.

35. National delegations to this meeting are being provided with copies of the overview portion of this document, as well as their own country-specific sections, for comment prior to finalisation of the document for publication. We are very keen to obtain data for inclusion in the analysis that we may have overlooked or not been aware of. The document will be considered ready for final publication as a technical report on 30 September 1991, when any comments received will be incorporated.

2.3.3 Ciguatera research (June 1990 - ongoing) - P. Dalzell

36. Following the endorsement of the 22nd RTMF, the IFRP, in conjunction with the SPC Health Programme, initiated the establishment of a regional data base on ciguatera and allied ichthyotoxism. Unlike earlier SPC efforts in this field, data gathering includes attempts to identify the specific causes of the intoxication, including type of seafood, preparation, and associated reef disturbance. We hope that as this database grows, regional trends in the causes of ciguatera will become apparent.

37. Fisheries and health workers in the region were advised of this initiative by the newsletters from the respective programmes, which also served to carry copies of questionnaire forms for reporting case histories. In addition, the first Ciguatera Information Bulletin (produced under the aegis of the Ciguatera Special Interest Group which was established under the Fisheries Information Project in 1990 - see section 3.3.1.) was published during 1991 and carried a further appeal to health and fisheries workers in the region to report ciguatera cases to the SPC using the standard form.

38. The initial response from countries of the region has been encouraging. A total of 100 case histories have been compiled in the last 12 months, in addition to 50 case histories collected from Micronesia during 1989 and 1990. These case histories have been entered onto a computer data base for summary and analysis. Summaries of the data holdings will be published biannually in future issues of the Ciguatera Information Bulletin.

39. The Commission has been asked to nominate a representative to serve on the organising committee of the 5th International Conference on Ichthyosarcotoxism, to be held in Tahiti in May 1992. Inshore Fisheries Scientist Paul Dalzell will act as SPC's representative on the Committee, and will liaise with Pacific Island Fisheries Departments and other agencies in ensuring that they are fully appraised of areas of interest. Mr Dalzell may also assist with a proposed Australian seminar on ciguatera aimed at fishing industry representatives from Australia and the Pacific Islands later in 1992.

2.3.4 Development of remote sensing applications for inshore fishery resource assessment (ongoing)

40. There has been a steady increase in interest in recent years in the use of remote sensing (RS) and digital image processing (IP) techniques for marine resource assessment, especially in the case of inshore and shallow-water reef and lagoon resources. Remote sensing, including satellite imagery and aerial photography, offers possibilities for data gathering that are not available through other means. Image analysis provides the means to use remotely sensed data in order to make rapid assessments of the physical extent of various types of marine habitat types, information which is essential when making standing stock estimates from abundance surveys, and for other purposes.

41. The IFRP has become increasingly involved in using RS/IP techniques in its work. Aerial photography is used whenever possible in field survey work. Satellite images have also been used in connection with two national projects (Palmerston survey, Tonga beche-de-mer survey) and will be used extensively in a forthcoming project in Palau (see section 2.2.3.). In addition, there is a proposal currently under consideration for SPC to improve information management through the use of a geographical information system (GIS), and possibly to assume a regional coordinating role in this technical area. This proposal, which will be considered by the South Pacific Conference in October, is closely linked to the use of image processing and remote sensing at the Commission, and Senior Inshore Fisheries Scientist Garry Preston has been heavily involved in its development.

42. One of the recommendations arising from the Workshop on Trochus Resource Assessment, Development and Management held in Vanuatu in May/ June 1991 (see section 2.3.5.) was for the Commission to assist Pacific Island countries in applying RS/IP technology and techniques to survey work on trochus and other marine resources, especially benthic invertebrates. In response to this recommendation, the Commission is now evaluating the possibility of equipping the IFRP with a small image processing facility (computer hardware and software) which can be used to support national survey efforts by providing basic image processing services and training.

2.3.5 Workshop on Trochus Resource Assessment, Development and Management (May/ June 1991)

43. This workshop was held in Vanuatu in May/ June 1991, in response to a recommendation from the 22nd RTMF. The workshop was structured as three one-week modules:

Week 1 consisted of presentations and discussion on logistical and economic aspects of the international shell trade, as well as on trochus biology, ecology, aquaculture, and resource assessment. Forty five individuals participated in this module.

Week 2 consisted of training and practical exercises in the application of basic survey methods to reef organisms. Participants studied the statistical considerations underlying sampling design and stratification, carried out survey work on selected reef areas, and performed analysis of data using a variety of techniques. Twenty four individuals participated in week 2.

Week 3 extended the week 2 training by providing participants an opportunity to carry out field trochus survey work during a simulated management exercise at the island of Aneityum, in the south of the Vanuatu archipelago. Participants worked in groups to gather and interpret data on the resource with the aim of producing a hypothetical management plan for the islands fishery. Eighteen individuals participated in this module.

44. The workshop made available a large body of information not currently available in a published form. This is presently being edited into a workshop report and will be published in due course.

45. The workshop discussions led to 4 main recommendations, as follows:

a) *that the Commission assist Pacific Island countries to make use of remote sensing and image processing in survey work on trochus and other marine resources, especially benthic invertebrates.*

Action being taken in response to this recommendation is discussed in section 2.3.4. above.

b) *that the Commission establish a new Special Interest Group (SIG) on shells and the shell trade, focussing especially on trochus.*

The Commission will establish the SIG under the Fisheries Information Project.

c) *that the Commission encourage the detailed study of the Aitutaki trochus fishery as a case study, in order to provide management-related information that will be applicable to the developing fisheries in other atolls of the region.*

This recommendation was made in view of the fact that there exists a considerable body of data relevant to the Aitutaki fishery, including at least two satellite images (taken before and after a cyclone), as well as an archive of size-frequency information, that has not so far been used in the study of the resource. Specific aspects that the meeting suggested could be investigated include relating survey data to satellite image data, population modelling based on size-frequency information, the conduct of depletion experiments as part of the next harvest season, and survey work immediately before and after harvest seasons to allow direct assessment of changes in abundance and catchability.

The Commission endorses the recommendation and will provide technical and, if possible, funding support to enable its implementation. However, it is recognised that such a study will first and foremost require the commitment of the Cook Islands Government if it is to be a success. Possible means of implementing the recommendation are presently being discussed with the Cook Islands Ministry of Marine Resources.

d) *that the Commission encourage the adoption of standardised survey techniques for trochus and other benthic marine invertebrates in Pacific Island countries, so as to enable comparison of results by different workers and from different areas.*

This recommendation partly reflects one of the original aims of the workshop, which was to develop a standardised trochus survey methodology as part of weeks 2 and 3. In view of this recommendation, the Commission will now undertake to publish a trochus survey manual, based on the materials and methods used during weeks 2 and 3. This will serve as a reference for national research workers and its use will be promoted by the Commission, thereby contributing to increasing standardisation of survey methodology in the region.

46. In addition to the survey work, a release experiment was performed during week 2 using over 1,000 juvenile trochus reared in hatchery facilities run by the Vanuatu Fisheries department. The experiment contributed to the aims both of the workshop, and of the SPC/ SPRADP Reef Reseeding Project (see section 2.3.1.). The results of the experiment, in which all week 2 participants assisted, are reported separately under agenda item 7.4

2.4 Publications

2.4.1 Technical reports

47. Draft reports of all country-specific activities have been forwarded to Fisheries Departments and other relevant bodies of the countries concerned, usually within two months of the completion of the field work. (Copies of all non-confidential IFRP reports are available from the Secretariat). In most cases these will ultimately be published as IFRP technical documents or in other forms.

48. Although a number of technical documents are at a late draft or close-to-final stage for publication, the project has not so far produced any formal publications, since their production is time-consuming, and because emphasis has been given to the development of a solid programme of field activities. Given that the project is presently scheduled to terminate in April 1993, greater emphasis will be placed on the production of publications in the coming year, although this is likely to be at the expense of field activities.

2.4.2 Fisheries Technical Paper Series

49. An occasional technical paper series has been established in which fisheries reports from the region can be published. These will take the form of collections of between six and ten papers published together as intermittent issues of the IFRP Technical Document series.

50. The first issue, which consists mainly of selected papers from the 1988 Workshop on Pacific Inshore Fishery Resources, has been completed and is available for examination at this meeting. It is anticipated that the series will come to rely more and more on contributions by fisheries workers in the region. These will be encouraged by correspondence and during duty travel by project staff, who will provide in-country editorial assistance and advice when required.

51. Although supported mainly by the IFRP, this activity forms part of SPC's contribution to the PIMRIS project. Funding support is still being sought to enable a more extensive programme, involving both training and publication support, aimed at upgrading technical writing skills and the level and quality of report production in the region. This proposal, if implemented, would complement the Regional Fisheries Training Project's Distance Course in Report Writing (see section 6.4.3).

2.5 Future plans

52. Based on requests received so far from member countries, the activities of the IFRP in the coming year are likely to include:

beche-de-mer, trochus and pearl oyster survey work;
development of remote sensing applications for marine resource assessment;
support to development of pearl oyster culture activities;
support to preparation of technical documents.

53. The project will continue to develop regional initiatives in response to the expressed needs of SPC member countries, and to respond to specific country requests for assistance as they are received.

3 FISHERIES INFORMATION PROJECT

3.1 General

54. The SPC Fisheries Information Project (FIP) is funded by the Government of France and became operational in April 1989 with the appointment of Fisheries Information Officer Jean-Paul Gaudechoux. The Fisheries Information Officer provides information, both routinely and on request, to assist fisheries scientists, development officers, extension agents, planners, managers and others involved in developing and managing fisheries at national, regional and international levels. Many such individuals work in remote locations with poor communications and inadequate access to advice and information on technical fisheries-related topics. The SPC has established this project with the goal of improving its capacity to process and disseminate information. The project is closely linked to the Inshore Fisheries Research Project and operates under technical supervision of the Senior Inshore Fisheries Scientist.

55. The FIP was developed at the same time as the inter-agency Pacific Island Marine Resources Information System (PIMRIS) project, and is one of the mechanisms through which SPC participates in PIMRIS.

3.2 National-level activities

3.2.1 Kiribati - publication of annual report

56. Assistance is presently being given to the Kiribati Fisheries Division to publish and circulate their annual report more widely, since the valuable information it contains presently receives only a small internal distribution within the Kiribati government.

3.3 Regional-level activities

3.3.1 Special Interest Groups

57. A major activity has been the establishment of Special Interest Groups (SIGs) on fishery related topics of interest to regional fishery workers. The SIGs were developed as a result of the SPC Workshop on Pacific Inshore Fishery Resources (IFRW), held in March 1988, where participants expressed concern about the absence of mechanisms to promote contact and information exchange among regional fishery workers. In establishing the SIG's, the most important areas of interest in the region were determined by canvassing regional fishery workers using a questionnaire. More than 300 responses to the questionnaire have been received to date, 80% from within the SPC region, and returns are continuing.

58. The aim of the SIGs is to serve as an information and communication network for fishery workers with similar professional interests and concerns. As part of the support offered to each SIG, the Commission undertakes to circulate literature, technical information and correspondence relevant to the interests of group members. This is mainly in the form of an information bulletin for each SIG, issued on an occasional basis (approximately twice a year), and which contains technical information summaries presented in plain language, bibliographic listings, and contact information for other group members. In return, group members are encouraged to provide information on their work and to forward copies of useful reference or technical material so that it can be made available to other group members.

59. An important aspect of the SIGs is that for each group, an external specialist agrees to act as technical coordinator or editor and oversee the technical quality of the material included in the bulletin. Technical coordinators are selected based on their regional experience combined with expertise on the subject in question. Using technical coordinators in this way ensures that the standard of the information circulated is maintained at a high level and is relevant to the needs of the region.

60. Three SIGs, on beche-de-mer, pearl oysters and ciguatera, have been established. For the beche-de-mer SIG, two information bulletins have been issued, for the pearl oyster SIG, three bulletins, and for ciguatera SIG, one bulletin. All of these have been enthusiastically received by group members who are now starting actively to provide additional material for further issues. More SIGs are expected to become active in the second half of 1991. Areas identified for attention include trochus and the shell industry, resource enhancement, and FADs.

3.3.2 Fisheries Newsletter

61. Responsibility for producing the quarterly SPC Fisheries Newsletter has now been assumed by the Fisheries Information Officer. This publication, which aims to provide news on regional developments in fisheries, and technical information on aspects of the harvest and post-harvest fishery sectors, is distributed widely within the region (600 addresses on mailing list).

62. The outstanding backlog in producing and distributing the Fisheries Newsletter was a direct result of staff shortage in the Coastal Fisheries Programme during 1989 and 1990, and which also led to production delays for a number of the programme's other publications. The Newsletter backlog has now been cleared and future production will be maintained on a timely basis.

63. A database recording all the articles and useful information published in the Fisheries Newsletter since it began publication has also been established by the Fisheries Information Officer. An estimated 2,500 records will be entered into the database, which will be made available to regional workers.

3.3.3 Other publications

64. Occasional publications are produced by, or with the support of, the FIP as required. A select bibliography on pearl oysters by consultant Neil Sims was published in the first quarter of 1991.

3.3.4 Information requests

65. Responding to information requests is a routine activity of the SPC Fisheries Programme, and is coordinated by the FIP. Under normal circumstances, a request is discussed among SPC Fisheries staff members with technical knowledge of the subject area, and either a listing of useful literature/information sources, or specific technical advice, or both, are prepared. This may be supplemented using bibliographic searches conducted through the SPC library on internal or external databases. In some cases, where information obtained through these sources is inadequate to address the needs of the request, further assistance may be sought from other PIMRIS nodes or from elsewhere.

66. The frequency of information requests from regional fisheries workers has been increasing over the past two years. This trend seems to be a response to the increased emphasis placed on fisheries information by SPC and other PIMRIS participating agencies, and a resulting increased awareness on the part of regional fishery workers about the sorts of services that are available. The trend is expected to continue in the coming year.

3.4 Future plans

67. 1990 has seen an increase in the awareness of, and demand for SPC's information services in the fisheries sector. The Fisheries Information Project will continue its present activity, hopefully at an expanded level, in order to meet this need. In particular, efforts will be made to gradually increase the number of SIGs towards the target level of twelve active groups.

68. It has also been decided to update the SPC publication "Fisheries Directory of the South Pacific Commission Region" with the aim of providing a concise description of the overall status of fisheries in each province, state and country/ territory of the region. This document, when completed, will serve as an aid to reviewing fisheries development progress and to identifying future needs in this area.

69. Despite the above commitments, and the level of support and interest the region has shown for the Project, the level of future work by the FIP will be constrained unless additional extra-budgetary funding can be located to support SPC's fisheries information activities. Present levels of funding are not adequate to enable the Commission to fully meet its commitments to PIMRIS or to respond to greatly increased demands for fisheries-related information services. The Commission is presently discussing means of resolving these problems with agencies interested in funding information-related projects.

4 DEEP SEA FISHERIES DEVELOPMENT PROJECT

4.1 General

70. During the latter part of 1990 Deep Sea Fisheries Development Project (DSFDP) staff comprised the Fisheries Development Officer (Peter Cusack), two full-time Masterfishermen (Paxton Wellington and Tuainetai Rata), and a Project Assistant (Marie-Ange Bao). The third established Masterfisherman post was filled in March of 1991 (Peter Watt). Two short-term Masterfishermen also worked with the Project during the year, one engaged for six months and the other attached to the Project for one month. In addition a consultant was engaged between mid-January and June 1991 to prepare the manuscript of the SPC FAD Handbook.

71. In addition to the specific training exercises described below, it should be noted that demonstration and practical training is a major focus of all the Project's field assignments. Over the past twelve months, Project Masterfishermen worked directly with and provided some form of training to some 230 fishermen or fisheries officers.

4.2 National-level activities

72. The Project continued to provide information and advisory services on technical fishery issues in response to country request. Much of this work, which is undertaken by the Fisheries Development Officer from SPC headquarters and during consultative visits, comprised the provision of information on gear and techniques arising from the Gear Development Sub-Projects conducted in Tonga and Kiribati, and technical advisory services in regard to FAD material procurement, site survey and mooring design. Major tasks undertaken by the Fisheries Development Officer recently have been: researching and advising on the material procurement for Nauru's FAD programme; assisting with the drafting of a national FAD programme and funding strategy for Vanuatu; overseeing the research and preparation of the forthcoming SPC FAD Handbook; participation in a needs survey conducted in North Tarawa under the Kiribati/ SPC Integrated Rural Development Project; developing a fishing strategy based on the Project's previous gear development work for the tuna fishing trials conducted in Western Samoa; and advising on alternative fisheries in Tuvalu. The Fisheries Development Officer is also responsible for scheduling and managing the Project's resources to best effect in the field.

73. The DSFDP has undertaken 66 country assignments since its inception in 1978, and during the past 12 months undertook eight field assignments in six member countries: Kiribati, Western Samoa, Tuvalu, the Cook Islands, Niue and Fiji. These visits are summarised in table 2.

Table 2. DSFD Project field assignments for the period August 1990 to August 1991.

Country Dates Masterfisherman	Primary objectives	Activities of Masterfisherman
Kiribati August '90 - Feb. '91 Paxton Wellington, Masterfisherman, SPC.	Promote deep-bottom fisheries in outer islands. Establish gear and equipment supply.	Construction of handreels, fitting out of craft. Supervise demonstration team visits to outer islands.
Western Samoa (Phase I) Sept. '90 - March '91 Peter Watt, Masterfisherman, SPC.	Explore potential for medium-scale offshore tuna fishing operation.	Fishing trials with mechanically-hauled, multiple vertical longlines. Training in fishing techniques and seamanship.
Phase II March - July '91 Peter Watt, Masterfisherman, SPC.	Develop manual vertical longline system suited to alia catamaran fleet.	Design and construction of vertical longline system. Test fishing and demonstration.
Tuvalu Nov. '90 - May '91 Tuainetai Rata, Masterfisherman, SPC.	Develop appropriate offshore tuna fishing gear. Explore local baitfish potential.	Fishing trials with hand-hauled multiple vertical longlines. Bait aggregating and capture trials.
Cook Islands Nov. - Dec. '90 Aymeric Desumont. Consultant (New Caledonia Fisheries Department).	Train local staff in all aspects of FAD site survey, rigging and deployment techniques.	Identify and chart three FAD sites by echo-sounding survey. Training in mooring calculation, rigging and deployment practice.
Niue March - April '91 Paxton Wellington, Masterfisherman, SPC.	Assist in workshop to introduce new/ improved fishing techniques for full-time fishermen.	Demonstration and training in lure and gear rigging, and in fishing techniques including vertical longlining, deep-bottom fishing and jigging bait with light.
Fiji June '91 Tuainetai Rata, Masterfisherman, SPC.	Explore the potential for the capture of flying fish by scoop-netting in Fiji.	Night scoop-netting trials in the Suva area.
Kiribati June-July '91 Paxton Wellington, Masterfisherman, SPC.	Rig and deploy FAD in association with North Tarawa Integrated Rural Development Project.	Site survey, rigging and deployment of FAD. Promote FAD-fishing techniques and communal FAD monitoring and maintenance.

4.2.1 Kiribati - Outer islands deep-bottom fisheries development.

74. The technique of deep-bottom fishing using handreels was introduced to Kiribati during DSFD Project field visits in 1980 and 1984. Fishing trials then revealed generally abundant stocks of the target species. Although the technique was adopted in some areas it was not widely taken up in the outer islands, where unavailability of suitable craft and gear restrained development. With the introduction of the KIR canoe designs and the more widespread use of motorised skiffs in association with commercial fisheries promotion by Te Mautari Ltd., Kiribati Fisheries Division requested the assistance of the Project in introducing the technique in selected outer islands where suitable craft and grounds were present. Handreels were constructed in Tarawa, fishing supplies ordered in, and demonstration team visits made to Abemama, Butaritari and Tabituea North under the supervision of Project Masterfisherman Paxton Wellington. During these visits the team supervised the fitting out of community fishing craft with reels and reel stands and conducted demonstration and training trips.

4.2.2 Western Samoa - Offshore tuna fisheries development (Phase I)

75. Although a FAD-based troll fishery which targets skipjack is well developed in Western Samoa it has long been considered that the resource of large tunas offshore could be exploited. Having a seagoing fisheries research vessel, the Tautai Matapalapala, equipped with basic mechanised pelagic fishing capacity, the Fisheries Division sought the assistance of the Project in developing a suitable gear type and technique to explore the potential of this resource. Given the limited line handling capacity of the mechanised gear available, it was decided to put most effort into developing a vertical longlining system. With commercial longline bait obtained through dealers in Pago Pago, test fishing was commenced by Project Masterfisherman Peter Watt, setting up to nine vertical longlines tethered in a series to FADs off Upolu and Savaii. This technique proved to be both efficient and productive. Catches of large yellowfin, bigeye and albacore tuna were taken regularly on the deeper baits and smaller fish on the upper hooks, sometimes while setting or hauling the gear. Several sets were also made of a three-mile, 200-hook horizontal longline. This gear proved to be a good deal less productive. Much attention was given to catch handling to produce high-quality landings, including spiking, bleeding and chilling the fish. Trial shipments of the catch were successfully airfreighted to markets in both Australia and Hawaii.

4.2.3 Western Samoa - Offshore tuna fisheries development (Phase II)

76. Following the success of the trials with the Tautai Matapalapala, it was decided to attempt to develop a simple, low-cost vertical longline rig that could be adopted by the large alia catamaran fleet. The work was continued by Project Masterfisherman Peter Watt. A wooden setting and hauling reel and a modified snood box were designed and built to suit this type of craft. Fishing trials with this gear and with modifications to the fishing rig proved to be even more productive. Alia fishermen have been quick to adopt this gear and to devise their own variations, as well as capturing local atule (*Selar crumenophthalmus*) as bait.

77. As more boats enter this fishery problems are already apparent concerning competition for access to FADs. In answer to this, present development work centres on fishing trials at drift using a locally manufactured parachute sea anchor. If this proves to be effective fishermen will be encouraged to adopt the technique. Shipments of high-quality chilled tuna are now regularly airfreighted to Hawaii and the US West Coast through a local dealer.

4.2.4 Cook Islands - FAD site survey, rigging and deployment training.

78. After experiencing difficulties in achieving satisfactory FAD survival rates and in carrying out accurate surveys of potential sites, the Cook Islands Ministry of Marine Resources (MMR) requested assistance from the Project with the training of MMR personnel in all aspects of FAD site survey, mooring design calculation, rigging and deployment procedures. In response the SPC sought the assistance of New Caledonia's Fisheries Department in making available on secondment the services of Mr A. Desurmont, Masterfisherman with the Department and the coordinator of the Territory's FAD programme.

79. During a 1-month visit to Cook Islands Mr Desurmont utilised the Project's Furuno FCV 362 echo-sounder and a JRC JLU 121 Global Positioning System (GPS) receiver/plotter to survey and chart four potential FAD sites around the island of Rarotonga, and trained MMR staff in the effective use of this equipment. Training was also conducted in the calculation of mooring systems and in the proper rigging of FAD rafts and moorings. A FAD rigged during the training exercises was then successfully deployed during the last week of the visit, with special emphasis given to demonstrating proper deployment procedures to the local FAD staff.

4.2.5 Tuvalu - Offshore tuna fishing trials.

80. In order to encourage more effective use of its fleet of fisheries training vessels, which typically engage in lagoon and reef-slope fishing, the Tuvalu Fisheries Division sought the assistance of the Project in developing offshore tuna fishing techniques suited to these craft. The longer-term aim was to establish regular landings of quality tuna on which the National Fisheries Corporation (NAFICOT) could base the development of secondary products for local and export sale.

81. It was agreed that, given the limited seagoing capacity of the craft, the fishing trials would be based on coastal tuna aggregations, particularly those around FADs deployed off Funafuti. As the vessels were not equipped to handle large-scale gear and commercial bait was unavailable, it was decided to employ multiple vertical longlines, baited with locally available species and set and hauled using modified FAO-style handreels. Attention was given in the early stages of the Masterfisherman Tuainetai Rata's visit to regularising the supply of local baitfish, but with mixed success. Potential bait species were taken in the lagoon by gill-netting and by jigging in the reef passes. Trials with submerged bait aggregating FADs, though promising, failed to produce sufficient quantities of bait that could be taken by jigging. Tuna fishing was conducted over a range of grounds and times, and various bait species tried, the most effective being koperu (*Decapterus* spp.) which were occasionally taken in large numbers by gill-netting in the lagoon. Catches by vertical longlining were only productive when good bait was available.

4.2.6 Kiribati - FAD deployment under the North Tarawa Integrated Rural Development Project

82. Following the results of a needs survey conducted in villages in North Tarawa, and as part of SPC Fisheries Programme's support to the Government of Kiribati/SPC North Tarawa Integrated Rural Development Project (IRDP), Project Masterfisherman Paxton Wellington was assigned to Kiribati in mid-June of this year in order to supervise the deployment of two FADs.

83. In keeping with the self-help nature of the IRDP and sensible site-selection practice, the villagers were involved in selecting potential deployment sites with regard to occurrences of tuna schools and ease of access. Bottom surveys by echo-sounding were then conducted with the assistance of Kiribati Fisheries Division and selected sites charted. Work is proceeding on the rigging of two FADs of an innovative type, incorporating rafts made up from a string of small, pressure-resistant floats designed to submerge in strong currents and so avoid too much strain being placed on the mooring.

4.2.7 Fiji - Flying fish scoop-netting trials.

84. Although flying fish are an important resource in many Pacific islands, particularly in Polynesia, they go unexploited in other areas. Following a suggestion by the FAO/UNDP Regional Fishery Support Programme and with the agreement of Fiji Fisheries Division, it was decided to assess the potential for the scoop-netting of flying fish in the Suva area by conducting fishing trials using traditional scoop-nets and battery-powered light. Project Masterfisherman Tuainetai Rata, who has extensive experience in this technique, has been assigned to supervise the trials, accompanied by Fiji Fisheries Division staff. If the trials prove encouraging, consideration will be given to mounting a demonstration and training programme for local fishermen.

4.2.8 Niue - Fishing techniques workshop.

85. At the request of Niue's Department of Agriculture, Forestry and Fisheries (DAFF), the Project provided the services of Masterfisherman Paxton Wellington to participate in a techniques workshop conducted for local fishermen over five weeks during April and May. The aim was to demonstrate a range of fishing skills and gear that might help increase the efficiency and productivity of local artisanal fishing efforts, and to make fishermen more aware of fishing opportunities and the services available through DAFF. While in Niue, the Masterfisherman also supervised the site survey, rigging and deployment of a FAD.

86. Apart from the demonstration of several unfamiliar fishing techniques, such as vertical longlining and jigging bait using an underwater light, other topics covered included safety at sea, outboard motor maintenance, use of an echo-sounder, the economics of managing a small fishing enterprise, catch handling, knots and splicing, and lure making and bait rigging. Much of the training was conducted at sea during the 14 fishing trips made. Some 29 fishermen participated in the workshop, as well as several DAFF staff.

4.2.9 Papua New Guinea - Masterfisherman attachment training in Tuvalu.

87. As a step toward developing a domestic Masterfisherman programme, Papua New Guinea's Department of Fisheries and Marine Resources requested the assistance of the Project in arranging attachment training for Fisheries Officer Rakwa Leka. With funding support provided by the Government of France, Mr Leka joined Project Masterfisherman Tuainetai Rata on assignment in Tuvalu for six weeks. During this time the trainee was given first-hand experience in the supervision of a fisheries development and training programme in the field, as well as experience in seamanship, navigation, fishing techniques, and gear rigging.

88. Expressions of interest in such attachments have been made by several other countries and the Project will make every effort to satisfy these, dependent on the availability of external funding.

4.3 Regional-level activities

4.3.1 Pacific Island Fisheries Officers' Training Course.

89. Project Masterfisherman Tuainetai Rata was this year assigned as boat skipper/tutor during the Practical Module of this course, which is run jointly each year by the Commission and the Nelson Polytechnic (New Zealand) School of Fishing (see also section 4.3.1). Apart from supervising the usual curriculum, Mr Rata was able to demonstrate several traditional Polynesian fishing techniques unfamiliar to some students, including drop-stone or palu ahi fishing, and scoop-netting of flying fish.

4.4 Publications

90. Although the timely finalisation of field-assignment reports to publication standard continues to strain the Project's resources, improved in-house publication capability and staff continuity have allowed draft reports of activities and recommendations to be provided to countries immediately on completion of most assignments. Final publication and general distribution of these reports continues to be delayed by the heavy workload of the Fisheries Programme and of the Commission's Publications Section.

91. A major undertaking during this year has been the preparation of the forthcoming SPC FAD Handbook, arising from the USAID-supported SPC FAD Review Study conducted during 1990, and subsequent expressions of interest in this subject during the FAD Workshop session at the 22nd RTMF. The Handbook is now in draft form and printing and distribution, assisted by AIDAB funding, will take place as soon as possible.

92. A technical manual series, which will present practical guides to gear and technique developments arising from the Gear Development Sub-projects, is also planned. Work on the first of these, concerning the technique of vertical longlining, commenced in 1990. As an adjunct to this work, funding was provided by the Government of France for the production of two video training films, which will be distributed with the relevant manuals.

93. Other publications in the preparation or planning stage include: a handbook on deep-bottom fishing methods, designed as a companion volume to the well-received Handbook on Trolling Techniques for the Pacific Islands; and technical reports on FAD technology development, including reports of the introduction to the region of designs used successfully elsewhere. The completion of these publications will depend on other work priorities and, in some cases, on the identification of extra-budgetary support.

4.5 Future plans

94. Field assignments in the planning stage include; FAD rigging and deployment assistance in Nauru, FAD site survey, rigging and deployment demonstration and training in Tuvalu, extended support to a major FAD deployment programme in Vanuatu, and exploratory and gear development offshore tuna fishing trials in Palau. These projected activities are summarised in table 3.

Table 3. Projected DSFD Project field activities as at August 1991.

Country Projected start-up date Expected duration	Primary objectives	Expected activities
Nauru Unknown Six weeks	Deploy three FADs. Introduce FAD-fishing techniques.	Supervise rigging and deployment. Assist establishment of monitoring and maintenance programme. Demonstrate FAD-fishing techniques.
Tuvalu September 1991 Eight weeks	Survey and chart FAD sites at Funafuti and some outer islands. Rig and deploy FADs.	Supervise echo-sounding survey of potential FAD sites. Training in mooring design, rigging and deployment techniques.
Vanuatu September 1991 Twelve months	Establish national FAD programme.	Support to all stages of FAD programme. Train national FAD team. Deploy and monitor experimental FAD designs.
Palau October 1991 Six months	Develop offshore tuna fishery.	Develop gear type and techniques suited to local craft. Conduct trial fishing and training in aspects of seamanship.

95. In response to recommendations of the 22nd RTMF, the DSFD Project will continue to keep abreast of developments in FAD technology and application regionally and worldwide and will seek to provide expert assistance to all aspects of member-countries' FAD programmes with a view to promoting self-sufficiency. In addition, the Project plans to undertake a related major initiative in seeking to promote and assist the development of medium-scale offshore fisheries in the region, particularly tuna fisheries and the fishing of unexploited bottom-stocks on offshore banks and seamounts. The aims and status of this programme are discussed in Working Paper 1.

5 FISH HANDLING AND PROCESSING PROJECT

5.1 General

96. The Fish Handling and Processing Project (FHPP) now has a staff complement of two: Steve Roberts, Post-harvest Fisheries Adviser (previously called Fish Handling and Processing Officer); and Shirley Steele, Women's Fisheries Programme Officer. The FHPP's main sources of funding are the UK Government (through the British Development in the Pacific) and the Canadian Government (through ICOD).

97. For most of the year, the FHPP has continued to concentrate on women-in-fisheries projects, development of the Regional Post-harvest Fisheries Facility; and a project to develop a dried tuna export operation for Tokelau. A study tour to post-harvest fisheries institutes in Latin American was completed, and the Project continued to respond to requests and information on a range of technical post-harvest fisheries subjects.

98. The Women's Fisheries Development Sub-Programme (WFDP) effectively started in May with the appointment of Shirley Steele as Women's Fisheries Programme Officer. The Women's Fisheries Programme Officer will oversee the development and implementation of projects for women from coastal communities in the region under the supervision of the Post-harvest Fisheries Adviser. The Programme will work in close consultation with SPC's Pacific Women's Resource Bureau to ensure compatibility with the overall objectives of the women's programmes at the Bureau. Most of the programme's initial activities will be in Papua New Guinea where a number of projects to support women from coastal communities are underway or planned.

5.2 National-level activities

5.2.1 Tokelau - Trial tuna processing and marketing project

99. This project dates back to a 1988 visit to Tokelau by Post-harvest Fisheries Adviser Steve Roberts, which recommended a pilot project on the improved processing of cured fish products. The Office of Tokelau Affairs (OTA) requested assistance from SPC to proceed with the project basically as recommended. The project subsequently required 8 weeks of field time by Mr Roberts between September and November 1990, including 4 weeks in-country, and additional periods spent on project-related activities in Western Samoa, Fiji and New Zealand. Assistance was provided in drawing up specifications for equipment and materials, arranging quotes and drawing up lay-out plans for three small processing buildings. All the items were purchased and fabricated through financial assistance from Tokelau's component of the Economic Development Fund of the USA Tuna Treaty. In addition, Mr Roberts provided technical training and advice for producing a high quality Marinaded Dried Tuna and set up a marketing trial for the product through the South Pacific Trade Office (SPTO) in Auckland.

100. This product is now being manufactured in Tokelau as the first commercial pilot venture of its kind in the country, with an initial monthly production target of 500 kg. A total of 15 people were trained, including the manager, processing supervisor, ice making supervisor and 12 processing staff during the four weeks spent on Atafu. Over the same period technical advice was given on the construction of the buildings to ensure that they met suitable hygiene standards for a fish processing operation. A training attachment to this project was also provided to an extension officer from Tuvalu Fisheries Division (see section 5.2.2).

101. Although the marketing trial in New Zealand with the SPTO got off to an encouraging start with an order for 200 kg of the tuna product, the expected breakthrough into the market has not yet materialised. An additional, more systematic trial during May, using a commercial marketing company, concluded that the market for this product in New Zealand was small and exclusive, and decided that further trials would not be worthwhile without some modification to the product (e.g. softening of texture). Alternative marketing strategies are now being evaluated, with Hawaii and mainland USA the most likely targets.

102. This pilot project will need continued support from the FHPP to ensure that it will develop successfully as a commercial venture. This is considered to be a critically important project by Tokelau as at present it is the only income generating activity of real potential outside traditional subsistence activities such as copra production and handicrafts.

103. The project will be reviewed after 12 months of operation to establish the potential for continuation and, if appropriate, extension to the other two atolls of Tokelau if this is considered appropriate. In addition, this project has significant potential application to many other isolated island communities in the region. It is hoped that if Tokelau can demonstrate some success with this product other countries in the region will be encouraged to follow (see section 5.3.4. on planned collaborative project with ACIAR in developing novel tuna products).

5.2.2 Tuvalu - Attachment training to the trial tuna processing and marketing project in Tokelau

104. A Tuvaluan assistant extension officer completed a training attachment with the Post-harvest Fisheries Adviser during the assignment to Tokelau on the pilot tuna processing and marketing project. Samasoni Auina spent a month on Atafu, Tokelau learning the procedures for manufacturing marinaded dried tuna and all the technical requirements to meet international standards for hygiene and quality. The experienced gained during the attachment will be valuable in the context of Tuvalu's Outer Island Fisheries Development Project (funded by AIDAB) which will concentrate on the production of dried fish.

5.2.3 New Caledonia - Fish retailers workshop

105. Following a request from the New Caledonia Authorities, a workshop for fish retailers was organised and conducted by the Post-harvest Fisheries Adviser in conjunction with the Southern Province Fisheries Department (SPFD). The workshop took place in March 1991 and was timed to coincide with the transfer of market facilities to a new municipal market site in Noumea. The workshop was divided into two modules: technical requirements for hygienic handling, processing and displaying of quality seafood products; and selling skills and customer relations. Soon after the workshop the retailers set up their stalls at the new market and a dramatic improvement was evident in the way that seafood products were being merchandised by many of the participants.

106. The SPFD will continue to monitor progress and the FHPP will assist in providing additional support to the retailers as required.

5.2.4 Papua New Guinea - Fisheries inspection and quality control workshop

107. Last year the Surveillance and Inspection Branch of the Department of Fisheries and Marine Resources, PNG, requested the Project to help organise a quality assessment workshop for fish inspectors responsible for examining seafood export products (frozen prawns, lobster, barramundi, dried beche-de-mer, etc). This project continues to develop after a number of delays. FAO has also agreed to assist with the workshop through INFOFISH in Kuala Lumpur, under the Fish Inspection and Quality Control programme. It is hoped that the workshop will take place in the last quarter of 1991 with the participation of one or two other countries in the region.

5.2.5 Papua New Guinea - Women-in-Fisheries Support Project

108. SPC has secured funds on behalf of PNG through CSPODP which will be used for follow-up support for participants of the Papuan Region Women's Fish Processing and Marketing workshop (held in Port Moresby in September 1989) and for two similar workshops and associated follow-up activities for the New Guinea Islands Region and the Momase Region respectively. A credit scheme has been included within the framework of the project to help groups of women or individuals set up income generating activities.

109. The Women's Fisheries Programme Officer will work closely with the Department of Fisheries and Marine Resources to implement this project. Ms Steele visited PNG in June/July to assist with the planning of activities. Priority was given to follow-up support for the Papuan Region and to planning the New Guinea Islands Region Women's Fish Processing and Marketing Workshop, which is now scheduled for September 1991. Both the Women's Fisheries Programme Officer and the Post-harvest Fisheries Adviser will be resource specialists at this workshop.

110. The experience gained in running these projects will be applied to the organisation of a sub-regional meeting for Melanesia (PNG, Solomon Islands and Vanuatu) to discuss the planning and implementation of women-in-fisheries projects. This meeting is scheduled for the first half of 1992.

5.2.6 Palau - Assistance with a survey of women's role in fisheries

111. From June to September 1991 the Marine Resources Division, Palau, are to conduct a National survey on the role of women in fisheries. WFDP was asked to assist with the project and has provided a detailed terms of reference for the consultant who has been hired to undertake the study. Further assistance in the form of an advisory visit by the Women's Fisheries Programme Officer and/ or the Post-harvest Fisheries Adviser may be required in the future.

5.3 Regional-level activities

5.3.1 Regional - Establishment of a Regional Post-harvest Fisheries Facility

112. The 22nd RTMF recommended that the establishment of a Regional Post-harvest Fisheries Facility (RPFF) should proceed as generally outlined in "The Establishment of a Regional Post-harvest Fisheries Facility for the Pacific" (RTMF 22/ WP 5), taking into account comments made by country representatives. The recommendation on this topic was subsequently ratified by the South Pacific Conference in October.

113. A meeting of the planning group set up to develop the details of the proposal took place at USP in December 1990 to finalise the various options proposed in the original report. The planning group consisted of representatives of the Fisheries Divisions of Kiribati (T. Tikai, Chief Fisheries Officer, chairman of the group) and Fiji (T. Adams, Acting Principal Fisheries Officer), USP (G. R. South, Professor of Marine Studies, and SPC (B. R. Smith, Fisheries Coordinator; S. Roberts, Post-harvest Fisheries Adviser; A. Robertson, Fisheries Education and Training Adviser; and M. Blanc, Fisheries Training Associate).

114. The group agreed that the facility would be best managed by SPC, but should be built on the USP campus in Suva to be close to the University's scientific laboratories, and should work in collaboration with the University's Marine Studies Programme. A more clearly defined educational programme in the format of a certificate course was agreed, the staffing level increased by one technical specialist, and a modified lay-out plan for the building requested to allow for the increased staff complement and for visiting research scientists. A modified budget was drawn up based on these changes. Establishing an SPC facility on the USP campus is an issue still to be resolved. USP has approached Fiji Government to request approval for USP land to be leased to SPC. This modified concept for the facility was also discussed and approved by the USP Marine Studies Coordinating Committee.

115. The Commission of the European Community (EC) has indicated interest in funding the project based on the modified budget and a technical project proposal in the EC format has been prepared. This document will be presented to the meeting of ACP State Ministers in Suva in October for consideration for potential funding under the Lome convention.

5.3.2 Regional - Study tour to post-harvest fisheries technology institutes in Latin America

116. A team from the Pacific Island region undertook a study tour to Pacific Latin America during April 1991 to learn about and evaluate the expertise available and the technologies developed in post-harvest fisheries technology in Mexico, Ecuador, Peru and Chile. The study tour was funded by the Canadian International Development Agency (CIDA), and was the first activity to proceed under the aegis of the Trans Pacific Fisheries Consultative Committee (TPFCC) since its creation in July 1990 at a meeting in Port Moresby.

117. The general objectives of the study tour were to explore areas of post-harvest fisheries technology expertise in Pacific Latin America which can be of benefit to Pacific Island countries and to evaluate the potential for utilising this expertise for technical assistance in areas of training and applied research in the region.

118. The study tour participants were: Steve Roberts, SPC Post-harvest Fisheries Adviser (study tour leader); Maciu Lagibalavu, Acting Principal Fisheries Officer, Fisheries Division, Fiji; Satalaka Petaia, Fisheries Extension and Development Officer, Fisheries Division, Tuvalu; and N. Rajeswaren, Senior Resources Development Officer, Department of Fisheries and Marine Resources, Papua New Guinea. The tour was also joined by Dr Gordon Munro, Coordinator PECC Task Force on Fisheries Development and Cooperation, and Señora Lola Dulanto de Soldi from Peru, who acted as interpreter.

119. The study tour members identified a number of areas of potential value to the Pacific Islands based on the impressive level of technical expertise in the Latin American countries visited. It was recognised that the establishment of the Regional Post-harvest Fisheries Facility in Suva, Fiji within the next two years will provide a focal point for cooperative applied research projects and exchange opportunities for scientists and trainers.

120. Funding for technical experts (with good understanding of English) to work on specific projects or for training opportunities in Latin America is potentially available. A report outlining these opportunities is available from the Commission and countries interested in any of the areas described can apply to SPC for such technical assistance.

5.3.3 Regional - The production of fish handling and processing videos

121. The first two videos in the Fish Handling and Processing Video Series ("An icy tale" and "A chilling story") have proved to be very popular, and are in regular use in fisheries training and demonstration activities throughout the region. Requests for copies continue to be received by the FHPP from individuals and organisations within the region and outside the Pacific.

122. ICOD has now agreed to fund the production of four new videos, which will be filmed over a period of three years from February 1991 (one topic every 9 months). The topic selected for the next video in the series will be freezing and cold storage procedures for seafood, and will be filmed in Nuku'alofa, Tonga towards the end of the year.

5.3.4 Selected countries - Collaborative project between SPC and ACIAR on developing and extending novel tuna products

123. SPC and ACIAR have started discussions on a collaborative approach to develop and implement projects on manufacturing novel tuna products in the region. This initiative is based on Tokelau's trial tuna processing and marketing project (see section 5.2.1). The aim of the SPC/ ACIAR project is to develop a systematic and integrated approach to establishing small-scale operations within isolated Pacific Island countries that would be income generating, provide employment and utilise the region's single most important and abundant natural marine resource, tuna.

124. Based on the Tokelau experience, there is a clear need to develop a range of products that this and similar operations can easily manufacture, and to extend the range of products to be exported. The collaborative project would differ in approach to what has been achieved in Tokelau in that products would be developed and initial marketing trials would be conducted prior to introducing the technology into the region. Small, isolated Pacific Island countries will be targetted in the first instance, including Tokelau, Tuvalu and Kiribati.

125. The Post-harvest Fisheries Adviser visited Tuvalu and Kiribati in February on an initial fact finding mission to establish the interest and feasibility of establishing small-scale tuna processing operations and to make a first assessment of potential sites. Both countries indicated their enthusiasm for the project which in Tuvalu's case could eventually link with the AIDAB-funded Outer Island Fisheries Development Project. While in Kiribati the Post-harvest Fisheries Adviser visited two outer islands, both of which fall under BDDP's Outer Island Project. Neither proved to be suitable for processing dried tuna. Other islands with dryer climates South of Tarawa now need to be evaluated.

5.3.5 Regional - Training to assist the chilled fish handling sector of national fisheries

126. Funding has now been identified through ICOD to run an ambitious training programme for the post-harvest fisheries sector. This a joint activity of the FHPP and the Regional Fisheries Training Project and has been discussed in detail at the last two RTMFs.

127. The aim of the project is to provide in-depth training to individuals from the region who will then be able to undertake training for small groups of fishermen, shore based fish handlers, processors and exporters of chilled and frozen seafood in their home countries. Now that funding has been secured, the stage 1 workshop has been scheduled for January/ February 1992, in Suva. The workshop will be conducted over a six week period and will include components of both technical (four weeks) and extension (two weeks) training.

128. Stage 2 will consist of in-country follow-up support. Assistance will be given to stage 1 trainees to organise and run one or two national workshops in their home countries during a two-week period, if necessary under the guidance and supervision of a visiting resource specialist. To cover all the interested countries in the region, it is expected that stage 2 will take 12 to 16 months to complete. A Savingram has been circulated to countries inviting nominations for the stage 1 workshop.

5.4 Publications

129. Only limited progress has been made with the commitment to finalise and print a number of publications. The new edition of "Beche-de-mer of the Tropical Pacific" is now in final form and is available for examination. Although a commitment has been made to produce a Field Manual for Seafood Poisoning Outbreaks, progress has been slow, mainly because country assignments and regional projects have assumed a higher priority.

5.5 Future plans

130. A number of activities planned during the last year will come to fruition during the next 12 months. These include the workshop for trainee technical specialists which will be the year's major task; the establishment of the Regional Post-harvest Fisheries Facility, the progress of which will depend on how soon funds can be secured; and two more video topics in the Fish Handling and Processing Video Series. Assistance will continue to be provided to Tokelau in marketing marinated dried tuna, while the proposal for the SPC/ACIAR novel tuna products project should be considered for funding by the end of the year. The Fish Inspection and Quality Control workshop for Papua New Guinea can proceed quickly once the official request has been received, and further training at an Institute in Ecuador is envisaged for one of PNG's senior inspectors.

131. The Women-in-Fisheries Development Programme will continue to provide assistance to the Women-in-Fisheries Support Project for Papua New Guinea. Two regional workshops are planned and both have follow-up activities at the village level. A mid-project review is also scheduled for the second quarter of 1992. To help Solomon Islands and Vanuatu to develop projects to support their coastal women, the Women's Fisheries Programme Officer will organise a sub-regional meeting which will draw upon the experience gained in Papua New Guinea. Other countries in the region interested in developing programmes to support women from fishing communities, such as Palau's initiative, will be given the fullest possible support.

6 REGIONAL FISHERIES TRAINING PROJECT (RFTP)

6.1 General

132. The Regional Fisheries Training Project has continued as its priority activity the identification of training requirements within the region which are not presently being addressed by established training institutions. Wherever possible, these needs have been met through *ad hoc* regional in-country training courses and workshops, as appropriate.

133. The project operated with its full complement of three staff until April 1991 when the Fisheries Education and Training Officer, Capt. Alastair Robertson, ended his contract with the South Pacific Commission. The position has since been offered to Mr Peniasi Kunatuba from Fiji, who is expected to take up the post at the end of August.

134. The training project has been based at the SPC Centre in Fiji since February 1990. The relocation has presented some advantages to Project operations from the point of view of operating logistics. However, there have also been significant communication problems between the Project and SPC headquarters in Nouméa. An additional disadvantage of the relocation has been the lack of input from the RFTP into training activities carried out by other elements of the Coastal Fisheries Programme. As a result of these experiences, the future location of the Project is currently being reviewed by the Commission's management.

135. "Core" funding for RFTP continues to be provided by the Governments of Australia and France, with an additional contribution from New Caledonia. The project also receives financial assistance for individual courses from a variety of funding sources, the most prominent of which are the International Centre for Ocean Development, the New Zealand Government, the Government of France, the Commonwealth Secretariat, the Commonwealth Foundation, the FAO/UNDP Regional Fishery Support Programme, the Australian International Development Assistance Bureau, the British Development Division in the Pacific and the German Agency for Technical Cooperation (GTZ).

6.2 National-level activities

6.2.1 Attachment of Fiji Fisheries Division Training Officer to Nelson Polytechnic School of Fishing.

136. A six-week attachment at the Nelson Polytechnic School of Fishing, Nelson, New Zealand has been organised by the Training Project for Mr Malakai Tuiloa, Fisheries Training Officer of the Fiji Fisheries Division. The attachment was from May 6 to June 14, 1991. The purpose of this attachment was to develop Mr Tuiloa's teaching skills in a formal atmosphere and at an institutional level and to expose him to the daily operation and administration of an institutional School of Fishing.

137. Funding for the attachment was provided by SPC.

6.3 Regional-level activities

6.3.1 Extension Training Project

138. The first extension training programme was run from 1987 to 1990 and comprised: a four-week regional course to train the trainers, run by resource persons from agencies with extension training programmes; ten subsequent in-country courses run by participants from the regional course with support from the original resource persons; and a one-week Extension Development Workshop during which the participants to the first course critically reviewed the extension project to date and made recommendations for the future development of extension training, both within their individual countries and regionally.

139. The recommendations of the Extension Development Workshop led to further initiatives in extension training that the RFTP conducted in 1991; these are reported below. An Extension and Training Manual was printed and distributed early in 1991, and was used during a second regional course to train teachers of fisheries extension and communication skills which ran in Port Vila, Vanuatu from 18 February to 8 March, 1991. This three-week workshop was similar in structure and content to the original 1987 course. The course was taught by three tutors: Mr Richard Fell, one of the original facilitators from the Queensland Department of Primary Industries; Miss Olga Gladkikh from the Coady Institute in Canada; and Mr Melchior Ware from the National Fisheries College in Papua New Guinea, who attended the first regional course as a participant. Eighteen individuals took part in the workshop.

140. Immediately after the Vanuatu course, Solomon Islands, Tonga and Fiji indicated their intention to run their own workshops in order to train their fisheries extension officers and develop the teaching abilities of their tutors. The Extension and Training Manual is expected to be the main teaching material for participants to use in running their own in-country courses extension and communication skills workshops.

141. In support of these workshops, the RFTP has organised the exchange of two Pacific Island tutors who attended the initial 'train the trainers' course in 1987. Mr Melchior Ware from Papua New Guinea will facilitate the Solomon Islands workshop, and Mr Satalaka Petaia will be one of the facilitators for the Tonga workshop. Miss Olga Gladkikh, will assist with both the Tonga and Fiji workshops.

142. All of these new initiatives in extension training have been financed through the continued support of ICOD.

6.3.2 SPC/Nelson Polytechnic Pacific Island Fisheries Officers Course

143. The twelfth SPC/Nelson Polytechnic Pacific Island Fisheries Officers Course was held from Monday 11 February to Friday 19 July, 1991. The course followed a structure similar to previous years - an eighteen-week module at the School of Fishing, Nelson Polytechnic, New Zealand, followed by a five-week practical fishing module at a Pacific Island venue. The 1991 practical fishing module was held in Fiji in conjunction with the University of the South Pacific at the Institute of Marine Resources research station at Dravuni, Kadavu, using two of the IMR vessels, the Fiji Fisheries Division training vessel, and staff from IMR, Fiji Fisheries Division, Nelson Polytechnic and SPC. The 1991 course was attended by 14 trainees.

144. In accordance with the wishes of the 22nd RTMF, a major review of this course proposed by the SPC Secretariat has been postponed pending the completion of the SPC/ ICOD study of Human Resource Development and Planning in the Pacific Islands Fisheries Sector (agenda item 5). Some minor changes were nevertheless made in the 1991 course contents to maintain relevance to the changing Pacific Island countries needs.

145. This course continues to be very popular with Fisheries Divisions within the region and has retained strong support from funding agencies. Funding for this year's course was provided by the Government of New Zealand, the Commonwealth Secretariat, the Commonwealth Foundation, the Government of France, the FAO/UNDP Regional Fishery Support Project and the German Agency for Technical Cooperation.

6.3.3 FAO/UNDP/ SPC Organisational Management Workshop for Senior Fisheries Personnel

146. This workshop was run in Suva, Fiji from 26 November to 7 December 1990. It raised considerable interest with many of the senior Fisheries Officers from the region attending. The workshop was run by an experienced team of three management consultants from the Queensland Department of Primary Industries.

147. Both the recent SPC/Human Resource Development Survey and the last Forum Fisheries Committee Workshop on Education and Training identified a need for an integrated programme of management training at regional and sub-regional levels. Some guidance on this issue will be sought from the meeting during discussions under agenda item 5. Funding for this workshop was provided by the Commonwealth Secretariat, UNDP, BDDP and AIDAB.

6.3.4 SPC Human Resource Development Survey

148. This survey was conducted in December 1990, January, February, April and May 1991 by a team of four. The team comprised Dr Paul Sutherland from Canada, Mr S. Tui Cavuilati from Fiji, the SPC Fisheries Education and Training Adviser Capt. A. C. Robertson, and Dr G. Robin South, the Director of IMR and Professor of Marine Studies at USP. A total of 15 SPC member countries were visited during two periods of regional travel.

149. The aim of the survey was to assess, within the existing economic constraints of each country and fisheries department, the future personnel needs of fisheries administrations in the region in terms of qualifications, skills, level of competence and number of people. The survey team used this information to develop recommendations which will assist countries, funding agencies and educational institutions to develop appropriate approaches and training strategies in order to better address national and regional training needs.

150. Some preliminary discussion of the study's findings took place during the 1991 Forum Fisheries Committee Workshop on Education and Training in Wellington, New Zealand. The final draft of this report is presented as Working Paper 6 and will be discussed under Agenda item 5. Funding for the survey was provided by ICOD.

6.3.5 Fishing Techniques and Training Videos

151. In conjunction with the Deep Sea Fisheries Development Project and with the assistance of the SPC Regional Media Centre, the RFTP will collaborate in the production of six training videos on some of the fishing techniques currently used in the South Pacific region. The filming of two of these has been carried out in Western Samoa (see section 4.4). Filming for the others commenced during the Nelson Course practical module in Fiji and covered vertical longlining, bottom longlining for snappers, trotlining for snappers, fresh bait trolling, bottom fishing with hydraulic reels and surface longlining. It is expected that all six videos will be distributed within the region by the end of 1991. This project is being funded by the Government of France.

6.4 Future Plans

6.4.1 Post Harvest Training

152. This major project will be a joint activity of the RFTP and the Fish Handling and Processing Project (see section 5.3.5). Phase 1 of the project will be a six-week training course for selected participants. It will consist of technical training as well as extension/communication and adult education skills. On return to their home countries, participants will be expected to run their own in-country training course (Phase 2) and in this they will be assisted by the tutors and facilitators to the Phase 1 course. The project is expected to commence in January/ February of 1992. Funding for this project is being provided by ICOD.

6.4.2 Revised Directory of Training Opportunities

153. A draft version of the 'Directory of Training Opportunities' was circulated in 1986 during the 18th Regional Technical Meeting on Fisheries. Using the experience gained and additional information that has become available since the printing of the first document, the directory is being totally revised. Some entries are updated, some outdated entries deleted and additional new entries listed. It is expected that the Directory will be completed, printed and distributed by the end of 1991.

6.4.3 Distance Course on Report Writing

154. Early this year the Training Project sent questionnaires to all the Regional Fisheries Departments regarding the need for training in Report Writing Skills. The immediate replies to this survey show the interest raised by this initiative. About one hundred potential participants in this distance course were identified. Funding is now actively being sought for this project.

6.4.4 Fisheries Training Database

155. The Database of the Training Project is currently being completed. All of the information on fisheries staff obtained during the recent Human Resource Development Survey is being entered and existing entries are being updated. It is expected that this database will be a valuable tool for course and syllabus development, for the production of statistics on training in the region, and for use in matching individuals qualifications, aptitudes and requirements with appropriate training or working opportunities.

7. HEAD X WORK PROGRAMME ACTIVITIES RELATED TO FISHERIES

7.1. General

156. Several items from SPC's core budget head X are used from time to time to fund fisheries-related activities requested by SPC member countries. The relevant core budget lines are:

10000	Short-term Experts' and Specialists' Services
10100	Assistance to Applied Research, Experiments and Field Work
10200	Inter-Country Study Visits and Travel Grants

157. Three requests for assistance in the Coastal Fisheries field under head X were received, as follows:

Cook Islands	Genetic analysis of pearl oyster stocks.
Tuvalu	Attachment of Fisheries Officer to Tokelau trial tuna processing and marketing project.
Fiji	Attachment of Senior Fisheries Training Officer to Nelson Polytechnic and Queensland Department of Primary Industry

158. The request from Cook Islands was considered in June 1991 and a grant of NZ\$ 10,000 approved from budget item 10100. The purpose of the project is to examine pearl oysters from three different lagoons in Cook Islands to identify genetic differences between stocks, prior to allowing the movement of juveniles or broodstock between lagoons. In view of the wide interest in re-establishing pearl-oyster stocks in the region, this project has implications for several Pacific Island countries. The implementation of the project is currently under discussion and will take place in late 1991 or early 1992.

159. The request from Tuvalu was transferred to the Fish Handling and Processing Project and is described in detail in section 5.2.2. The request from Fiji was transferred to the Regional Fisheries Training project and is described in section 6.2.1.

8. SUMMARY

160. The 1990/91 period has been one of considerable activity for the Coastal Fisheries Programme, with over 43 national- and regional-level projects in operation during the year. Staffing problems experienced during the past two years have been largely resolved, and alterations to the administrative organisation of the Programme implemented this year are already starting to lead to improved coordination both within the Programme and with other SPC activities. It is anticipated that a higher level of integration with other SPC programmes will be achieved in the coming years.

161. The major problem experienced by the Programme as a whole has been in the field of publication production. Final reports of projects are now routinely delivered in a timely manner but their finalisation to publication standard continues to absorb a disproportionate amount of time. This, coupled with the fact that field projects and advisory services almost always have to be allocated a higher priority than publication-related work, results in publications taking a long time - often years - to finalise. The situation is exacerbated by the increasingly heavy workloads of the Commissions centralised publications and translation departments. These latter problems are outside the capacity of the Coastal Fisheries Programme to resolve, and need to be addressed on a broader basis by the Commission as a whole.

162. In other respects the Programme has continued to function according to its mandate during 1990/1991, focussing primarily on satisfying country requests for assistance with and support to national development projects, and secondarily on developing and promoting initiatives that address regional fisheries development issues. Unless directed otherwise, the Programme will continue to pursue similar objectives in the future.