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Oceanic Fisheries Programme Workplan 2003

Secretariat of the Pacific Community



Oceanic Fisheries Programme
Secretariat of the Pacific Community

Workplan for the Year 2003

First Six-Monthly Progress Report
(1 Jan – 30 Jun 2003)

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Part I: Introduction

This report is the first six-monthly report on progress under the Oceanic Fisheries Programme's Workplan for the year 2003. The report includes all AusAID, Core, French and NZAID programme funding, plus project funding for specific tasks being undertaken by one or more of the Sections that make up the programme.

Oceanic Fisheries Programme

The Oceanic Fisheries Programme is made up of three sections: Stock Assessment & Modelling, Statistics & Monitoring, and Biology & Ecology. While separate activities of this workplan are listed under each section, the work of the sections is tightly coordinated and highly integrated. A current listing of staff of the Programme is provided in Annex I.

Stock Assessment & Modelling

The Stock Assessment & Modelling Section provides the OFP outputs that are of the highest priority to PICTs: the expert scientific analyses and reports that support their sovereign management of EEZ tuna fisheries and their shared responsibilities for the regional management of transboundary stocks. In producing these outputs it also draws on the outputs of the other two OFP objectives – the data compiled by the Statistics & Monitoring Section and the understanding of basic ecosystem and biological processes generated by the Biology & Ecology Section.

Statistics & Monitoring

The Statistics & Monitoring Section provides the fundamental basis for the programme's output of assessments of regional tuna and billfish species, as well as providing direct outputs essential to national and international migratory species management and global overviews. Most PICT members licence fishing vessels that are required to submit logbooks or other records of fishing operations, and national capacity to process and manage this information is not always comprehensive. In the interests both of improving the availability of processed information to PICTs, and of developing a regional view of these highly-migratory stocks, SPC acts as the catch and effort data depository and processing centre for most of the tuna vessels operating in the region under bilateral access arrangements, by arrangement with member PICTs. The Forum Fisheries Agency (FFA) acts as the depository for multilateral arrangements and operates the Regional Register of (tuna) Fishing Vessels and the regional Vessel-based Monitoring System. SPC and FFA collaborate in maintaining the resulting Regional Tuna meta-Database (i.e. source data are shared between organisations) and in programming views at various levels of aggregation and confidentiality for various purposes according to the focus of each agency, for member countries, and for other analyses.

To cross-check these fishing records and estimate raising factors to account for under-reporting, non-reporting, and bycatch, SPC requires access to vessel unloading statistics and independent observer reports. Whilst FFA co-ordinates the placement of on-board observers for compliance purposes under multilateral agreements, SPC co-ordinates the placement of observers for scientific purposes, requiring specialised fish identification and biological sampling knowledge, and has progressively devolved capacity in this area from the regional to the national level. Whilst FFA collects information on transshipments and landings, SPC also supports national port sampling activities for scientific purposes, and both agencies share processed information, as relevant. With its wider membership, and non-political, scientific focus, SPC is also in a position to fill in parts of the regional overview unavailable directly to FFA – a regional overview that is essential for managing regional stocks.

Biology & Ecology

The Biology & Ecology Section undertakes research on the biology of selected tuna and by-catch species, and on the ecosystem in which they live. Information on tuna biology, such as age and growth and vertical habitat utilisation, is incorporated directly into regional tuna stock assessments. As assessments for important by-catch species are developed, similar biological information will also be required for these species. The nature and impacts of ocean climate variability on tuna fisheries is also a focus of the section's work, with modelling techniques used to integrate basin-scale observations and models of physical and biological oceanography with the biology and physiology of tunas. Research is also underway to characterise and model the western tropical Pacific warm pool ecosystem in a holistic way, with initial work focusing on defining the trophic relationships existing among the broad assemblage of pelagic species inhabiting the system.

Part II: Workplan for the Year 2003 – Objectives, Outputs and Activities

The 2003 workplan is organised, as per the Programme Strategic Plan, as a hierarchical series of objectives (one per section), outputs and activities. A brief description of objectives, outputs and activity areas to be pursued in 2003 follows below. The detailed activities planned for 2003 and the first six-monthly progress report on progress are given in Part III of this report. An annual report for 2003 with a final assessment of achievements against activities and indicators will be provided early in 2004.

Component 1 – Stock Assessment & Modelling

The Stock Assessment & Modelling Section uses fisheries statistics and biological information provided by the other sections to conduct scientific analyses that inform management decision making at regional, sub-regional and national levels. Outputs and corresponding activities fall into four areas:

- i. The production of overviews, reports and assessments leading to advice on the status and prospects of tuna fisheries and associated species at the regional level;
- ii. The production of overviews, reports and assessments leading to advice on the status and prospects of tuna fisheries and associated species at the national level;
- iii. Scientific support to, or on behalf of, PICTs during regional and international meetings and negotiations; and
- iv. Development of practical scientific methodologies and models to help address output 1.1, to help develop the capacity of PICTs to carry out scientific assessments and to promote the use of comparable methodologies by all States exploiting regional migratory resources.

Objective 1 – Comprehensive regular assessments of status and prospects of oceanic fisheries for PICT fisheries departments and regional processes

Output 1.1: Overviews, reports and assessments leading to advice on the status and prospects of tuna fisheries and associated species at the regional level

The main activity areas planned to achieve this output in 2003 are:

- Researching and producing annual regional status reports for each of the 4 main tuna stocks – skipjack, yellowfin, bigeye and South Pacific albacore tuna

Generic performance indicator: *Assessments over various scales and time-periods continue to be regarded by PICTs as useful in helping them achieve their fishery management goals, and by eminent peers as being scientifically excellent (as evidenced by review, by requests for assessments, and publication in peer-reviewed journals)*

2003 performance indicator: *Four stock assessment papers presented at SCTB 16 in July 2003. Note that one such assessment (yellowfin tuna) will be subjected to detailed review by the SCTB Methods Working Group prior to SCTB 16.*

Output 1.2: Overviews, reports and assessments leading to advice on the status and prospects of tuna fisheries and associated species at the national level:

The main activity areas planned to achieve this output in 2003 are:

- Researching, producing and updating National Fisheries Status Reports (NFSRs) covering the status and fisheries prospects for tuna and billfish stocks within individual PICT member EEZs;

- Providing fisheries data summaries, reports and analyses to support the development and implementation of National Tuna Management Plans (TMPs).

Generic performance indicator: *NFSRs and TMP inputs continue to be regarded by PICTs as useful in helping them achieve their national fishery management goals, as evidenced by requests for such services by PICTs; NFSRs and TMP inputs inform and impact management decision making at the national level.*

2003 performance indicator: *Production of NFSRs for five PICT members and attendance at TMP-related advisory meetings on request*

Output 1.3: Scientific support to, or on behalf of, PICTs during regional and international meetings and negotiations

The main activity areas planned to achieve this output in 2003 are:

- Producing scientific analyses and summaries, and status papers, and advising the Forum Fisheries Committee, and other international fora on request by PICTs;
- Providing organisational support and scientific input to the Standing Committee on Tuna and Billfish and associated working groups, and facilitating the reporting of that meeting to relevant fora

Generic performance indicator: *Advice continues to be regarded by member countries as useful in helping them achieve their goals, and by eminent peers as being scientifically excellent and persuasive*

2003 performance indicator: *Attendance and presentation of material at various regional and international for a; SCTB 16 meeting successfully held in July 2003*

Output 1.4: Development of practical scientific methodologies and models to help address output 1.1, to help develop the capacity of PICTs to carry out scientific assessments and to promote the use of comparable methodologies by all States exploiting regional migratory resources

The main activity areas planned to achieve this output in 2003 are:

- Coordinating research, development, and validation of computer-based models of fish stock dynamics, particularly progressively more spatially-detailed and ecosystem-inclusive models;
- Promoting the use of validated and robust assessment methodologies by other relevant bodies involved in scientific aspects of the management of tuna fisheries

Generic performance indicator: *Methodologies developed result in progressively more comprehensive assessments, and are more widely used at the national and international level*

2003 performance indicator: *MULTIFAN-CL software and documentation available on web site*

Component 2 – Statistics & Monitoring

The Statistics & Monitoring Section provides the fundamental data resources for the programme's assessments of regional tuna and billfish stocks, provides direct outputs essential to national and international migratory species management and global overviews, and provides specialist technical services and training to PICT fishery departments in fishery monitoring, data processing and data management. Outputs and activities fall into five main areas:

- i. Regional tuna fishery and related database maintenance and development;
- ii. Data dissemination at appropriate levels of resolution to other OFP sections, fishery departments and research agencies of SPC members, regional and global fisheries agencies, and the general public;
- iii. Statistical analyses of tuna fishery data conducted as required;
- iv. Enhancement of national oceanic fisheries databases, statistical capability and linkages to regional databases; and
- v. Enhancement of information resulting from tuna fishery port samplers and observers as a result of improved national and regional capacity.

Objective 2 – Oceanic fishery data collection and analytical support to PICT fisheries departments and regional processes

Output 2.1: Regional tuna fishery and related databases maintained and improved in content and functionality

The main activity areas planned to achieve this output in 2003 are:

- Collection, compilation and processing of a wide range of data for incorporation into the regional tuna fishery database;
- Development and maintenance of database software, including data entry and query interfaces;
- Provision of technical support to SPC members for data collection.

Generic and 2003 performance indicators: *Annual logsheet data holdings increase towards 100% of the estimated annual amount of tuna fishing in the SPC member EEZs; coverage of aggregated catch and effort data bases approaches 100% of fishing activity in the western and central Pacific Ocean.*

Output 2.2: Data disseminated at appropriate levels of resolution to other OFP sections, fishery departments and research agencies of SPC members, regional and global fisheries agencies, and the general public

The main activity areas planned to achieve this output in 2003 are:

- Dissemination of data summaries via the internet and publication of hard copy statistical bulletins;
- Provision of statistical support to the Standing Committee on Tuna and Billfish;
- Maintenance of OFP-owned content in the Fisheries Global Information System (FIGIS) managed by FAO.

Generic performance indicator: *PICTs and other clients continue to regard OFP data products as the authoritative source of information on tuna fisheries in the western and central Pacific Ocean.*

2003 performance indicator: *Data dissemination schedules are met*

Output 2.3: Statistical analyses of tuna fishery data conducted as required

The main activity areas planned to achieve this output in 2003 are:

- Analysis of the proportion of bigeye in the purse-seine catch of 'yellowfin plus bigeye'
- Examination of the relationship between observer coverage rates and the accuracy and reliability of estimates of catches of non-target species, for certain fleets

Generic performance indicator: *Analyses are based scientifically sound, as indicated by peer review by SCTB and/or publication in the scientific literature.*

Output 2.4: National oceanic fisheries databases and statistical capability enhanced and linkages to regional databases maintained or enhanced

The main activity areas planned to achieve this output in 2003 are:

- Provision of technical support for national tuna fishery database systems
- Provision of assistance in producing national tuna fisheries data summaries, including attachments of national staff to the OFP

Generic performance indicator: *All PICTs with significant tuna fishing activities in their EEZs have in place active national tuna databases and data maintenance and reporting capacity.*

Output 2.5: Enhanced information resulting from tuna fishery port samplers and observers as a result of improved national and regional capacity

The main activity areas planned to achieve this output in 2003 are:

- Provision of technical assistance, including the development of reference materials and training, for the development and coordination of national observer programmes and port sampling programmes
- Development and implementation of procedures for the control of port sampling and observer data quality in national programmes

Generic performance indicator: *Coverage rates of national port sampling and observer programmes approach regionally agreed standards and PICTs develop capacity to sustain programmes at the required levels.*

Component 3 – Biology & Ecology

The Biology & Ecology Section undertakes research on the biology of selected tuna and by-catch species, and on the ecosystem in which they live. Information on tuna biology, such as age and growth and vertical habitat utilisation, is incorporated directly into regional tuna stock assessments. As assessments for important by-catch species are developed, similar biological information will also be required for these species. The nature and impacts of ocean climate variability on tuna fisheries is also a focus of the section's work, with modelling techniques used to integrate basin-scale observations and models of physical and biological oceanography with the biology and physiology of tunas. Research is also underway to characterise and model the western tropical Pacific warm pool ecosystem in a holistic way, with initial work focusing on defining the trophic relationships existing among the broad assemblage of pelagic species inhabiting the system. Outputs and activities fall into two main areas:

- i. Enhanced models of regional pelagic ecosystem processes that promote progressively better prediction of tuna stock distribution, abundance and availability to fisheries; and
- ii. Better knowledge of tuna biological processes important to stock assessment and ecosystem assessment, including tuna movement, habitat utilisation, age structure, growth, feeding ecology, recruitment, and reproduction.

Objective 3 – Understanding pelagic ecosystems in relation to tuna and associated species stocks

Output 3.1: Enhanced models of regional pelagic ecosystem processes that promote progressively better prediction of tuna stock distribution, abundance and availability to fisheries

The main activity areas planned to achieve this output in 2003 are:

- Developing population models of tuna from which the impacts of ocean climate variability on various time and space scales (from spatially localised effects of El Niño Southern Oscillation inter-annual variability to basin-scale effects of global warming) on tuna distribution and abundance can be predicted
- Developing individual-based models for selected tuna and by-catch species in which individual variability of biological and physiological processes and their responses to the environment can be explicitly represented
- Describing and modelling the western tropical Pacific warm pool ecosystem, and in particular the trophic relationships that exist among pelagic species and species groups
- Developing collaborative linkages and projects with appropriate sources of data and expertise on climate and elements of the living and non-living ocean environment that are not internally supported, to elucidate elements of the pelagic ocean ecosystem;
- Reporting, publishing and generally making results and models available to other OFP sections, other researchers and PICT fisheries administrations

Generic performance indicator: *Progressively more accurate predictive models of WCTP pelagic fisheries ecosystems*

Output 3.2: Better knowledge of tuna biological processes important to stock assessment and ecosystem assessment, including tuna movement, habitat utilisation, age structure, growth, feeding ecology, recruitment, and reproduction

The main activity areas planned to achieve this output in 2003 are:

- Implementing field work to support biological studies, including ageing, habitat utilisation and trophic dynamics
- Developing database and sample storage systems to systematically archive information and samples
- Using results generated to assure biological realism in stock assessment and ecosystem models

Generic performance indicator: *Output contributes to progressively more rigorous stock assessments by the OFP*

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
Component 1 – Stock Assessment & Modelling		
Objective: Comprehensive regular assessments of status and prospects of oceanic fisheries for PICT fisheries departments and regional processes		
<i>Output 1.1: Overviews, reports and assessments leading to advice on the status and prospects of tuna fisheries and associated species at the regional level</i>	<ul style="list-style-type: none"> Produce regional stock assessments for skipjack, yellowfin, bigeye and South Pacific albacore tuna for presentation to SCTB 16 (July 2003) 	<ul style="list-style-type: none"> Stock assessments for skipjack, yellowfin, bigeye and South Pacific albacore tuna completed and presented to SCTB 16. Assessment documents are available at: http://www.spc.int/OceanFish/Html/SCTB/SCTB16/index.htm
<i>Output 1.2: Overviews, reports and assessments leading to advice on the status and prospects of tuna fisheries and associated species at the national level</i>	<ul style="list-style-type: none"> Produce National Fisheries Status Reports (NFRs) for Kiribati, Fiji, Samoa and two other PICTs (to be decided at HoF) Provide ongoing support for TMP implementation in PNG and other PICTs on request Provide assistance in the development of a TMP for Tokelau 	<ul style="list-style-type: none"> NFR for Kiribati has been completed and presented during an in-country visit. A Fiji NFR is currently being finalised and will be presented at the management plan review in December. The Samoa NFR is in preparation. Support from TMP development/implementation provided to PNG, Fiji and Kiribati during the reporting period. Support for the Tokelau TMP development is programmed for the 2nd semester of 2003
<i>Output 1.3: Scientific support to, or on behalf of, PICTs during regional and international meetings and negotiations</i>	<ul style="list-style-type: none"> Prepare and present papers on <ul style="list-style-type: none"> (i) status of US treaty observer and port sampling scientific data collection; and (ii) status of the purse seine fishery at the annual US treaty consultations (March 2003) Provide and present papers on: <ul style="list-style-type: none"> (i) distribution of purse seine and pole & line CPUE as an indicator of spatial variability in skipjack relative abundance; 	<ul style="list-style-type: none"> Both papers were prepared and presented at the annual US treaty consultations, held in Majuro in March 2003 All papers were prepared and were made available and/or presented to Palau Arrangement Task Force meetings in January (Honiara), March (Majuro) and the Palau Arrangement meeting in April (Nadi). Additional work is programmed for

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
	<ul style="list-style-type: none"> (ii) effect of purse seine vessel size and other factors on fishing performance; and (iii) alternative estimates of skipjack relative biomass in PNA EEZs <p>and other analyses as required to the FFA coordinated Palau Arrangement Task Force on the use of purse seine vessel days (ongoing)</p> <ul style="list-style-type: none"> • Provide scientific support to PICT delegations at meetings of the FFC (May 2003), PrepCon 4 (May 2003) and PrepCon 5 (October 2003) • Provide organisational and scientific support to the 16th meeting of the SCTB (July 2003) 	<p>the 2nd semester, feeding into the Palau Arrangement meeting in September (Rarotonga).</p> <ul style="list-style-type: none"> • Support was provided to the May FFC and PrepCon meetings (Hampton). Further support to the September-October PrepCon and associated FFC meetings is planned (Hampton and Lawson). • Administrative, funding and scientific support for SCTB 16 was provided as planned. The SCTB 16 website contains PDF versions of all 102 papers submitted to the meeting. See http://www.spc.int/OceanFish/Html/SCTB/SCTB16/index.htm
<p><i>Output 1.4: Development of practical scientific methodologies and models to help address output 1.1, to help develop the capacity of PICTs to carry out scientific assessments and to promote the use of comparable methodologies by all States exploiting regional migratory resources.</i></p>	<ul style="list-style-type: none"> • Develop a parallel processing version of the stock assessment software MULTIFAN-CL • Clean up the MULTIFAN-CL source code to a state suitable for distribution • Write a comprehensive users' manual for the MULTIFAN-CL software • Develop a MULTIFAN-CL web site, from which the source code, executables and documentation will be available 	<ul style="list-style-type: none"> • An initial parallel processing version of MULTIFAN-CL has been completed and initial testing carried out. • This task will be completed during the 2nd semester. • A preliminary version of the users' manual has been completed. Further development of the manual will be ongoing. • The MULTIFAN-CL website has been launched – see http://www.multifan-cl.org/. Executables, document-ation, graphics utilities and test files are available for downloading. Source code will be made available at a later date.

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
Component 2 – Statistics & Monitoring		
Objective: Oceanic fishery data collection and analytical support to PICT fisheries departments and regional processes		
<i>Output 2.1: Regional tuna fishery and related databases maintained and improved in content and functionality</i>	<ul style="list-style-type: none"> • Compilation of tuna fisheries data, including annual catch estimates, catch and effort logsheet data, aggregated catch and effort data, unloadings data, port sampling data, observer data and other types of data, from SPC member countries and territories, distant-water fishing nations, southeast Asian countries and regions adjacent to the WCPO • Entry of hardcopy tuna fisheries data and import of data files into the OFP databases • Publication of the OFP Data Catalogue • Maintenance of the OFP databases, including the development of data entry programmes and query interfaces, as required, and maintenance of data quality and integrity • Provision of technical support to SPC members for data collection, including development and implementation of data collection forms through the SPC/FFA Tuna Fishery Data Collection Committee 	<ul style="list-style-type: none"> • Catch and effort logsheet coverage within the SPC Statistical Area increased in 2002 to 85.2%. Aggregated catch and effort coverage within the WCPO for 2002 is complete. Compilation of size data in 2002 was adequate for assessments, except for the lack of coverage for Indonesia, the Philippines and Vietnam. • Data entry and import during the reporting period have been on schedule. • The OFP Data Catalogue was updated and published on the SPC/OFP website. • Development of the otolith data entry system commenced; the stomach data entry system was implemented; development of the logsheet data entry system to accept scanned logsheets commenced; the port sampling data entry system was updated; the CES query interface was updated; a query interface for port sampling data was implemented. • Data collection forms were revised at the fifth meeting of the Data Collection Committee in December 2002 and distributed to SPC members in March 2003.

Part III: Summary of six-month/annual assessment of progress

Objectives and Outputs	Planned workplan for 2003	Six-month/annual assessment
<p><i>Output 2.2: Data disseminated at appropriate levels of resolution to other OFP sections, fishery departments and research agencies of SPC members, regional and global fisheries agencies, and the general public</i></p>	<ul style="list-style-type: none"> • Dissemination of public-domain catch and effort data through the SPC/OFP website and dissemination of tuna fisheries data and other information on a request basis to individuals external to the OFP, subject to restrictions related to data confidentiality • Publication of annual catch estimates in the Tuna Fishery Yearbook and monthly catch rates in the WCPO Tuna Bulletin • Provision of statistical support to the Standing Committee on Tuna and Billfish, including an overview of WCPO tuna fisheries; a report on the status of the collection, compilation and dissemination of tuna fisheries data in the WCPO; estimates of annual catches of tuna and billfish; statistical summaries for the SCTB species research groups; and responses to directives to the SCTB Statistics Working Group • Maintenance of OFP-owned content in the Fisheries Global Information System (FIGIS) managed by FAO 	<ul style="list-style-type: none"> • From July 2002 to June 2003, there were 135 releases of public domain data via the OFP website (up from 97 during the previous 12-month period), 26 releases of data by the OFP other than via the website (up from 13), and 44 releases of statistics and other information (up from 39). • The Tuna Fishery Yearbook, 2002, was published on the SPC/OFP website in October 2002 and printed and distributed in January 2003. <i>Les statistiques annuelles sur la pêche thonière, 2002</i>, was prepared and edited during October 2002 – May 2003, for the first time by the OFP Documents Officer. The WCPO Tuna Bulletin, First Half 2002, was published on the SPC/OFP website in January 2003. • Working Papers SWG-1, SWG2, SWG-3, ALB-3, BET-3, SKJ-3 and YFT-3 were prepared for SCTB16. See: http://www.spc.int/OceanFish/Html/SCTB/SCTB16/index.htm • The Fisheries Statistician attended a one-day meeting on the development of FIGIS in January 2003. The OFP is awaiting instructions from FAO on procedures for remotely updating the OFP-owned content.

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
<i>Output 2.3: Statistical analyses of tuna fishery data conducted as required.</i>	<ul style="list-style-type: none"> • Analysis of the proportion of bigeye in the purse-seine catch of 'yellowfin plus bigeye' • Examination of the relationship between observer coverage rates and the accuracy and reliability of estimates of catches of non-target species, for certain fleets • Other analyses as required 	<ul style="list-style-type: none"> • Working Papers SWG-4, "Observer coverage rates and the accuracy and reliability of estimates of CPUE for offshore longline fleets targeting South Pacific albacore," and SWG-6, "Analysis of the proportion of bigeye in 'yellowfin plus bigeye' caught by purse seiners in the Western and Central Pacific Ocean, based on observer data," were prepared for SCTB16. See: http://www.spc.int/OceanFish/Html/SCTB/SCTB16/index.htm

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
<p><i>Output 2.4: National oceanic fisheries databases and statistical capability enhanced and linkages to regional databases maintained or enhanced</i></p>	<ul style="list-style-type: none"> • Development of the electronic transfer of tuna fisheries data from SPC members to the OFP, with trials in the Federated States of Micronesia, Kiribati and the Marshall Islands • Provision of technical support for national tuna fishery database systems, including programming support through country visits, training of national staff, and the review of national systems by OFP staff • Dissemination of national tuna fisheries statistics through secure access to the SPC/OFP website • Provision of assistance in producing national tuna fisheries data summaries, including attachments of national staff to the OFP 	<ul style="list-style-type: none"> • The electronic transfer of scanned data forms was implemented in the Federated States of Micronesia and Papua New Guinea. A proposal to establish similar facilities in Kiribati and the Marshall islands was developed. • National data base systems were supported through visits by OFP staff to the Cook Islands and through attachment training at SPC headquarters of a technical officer from Palau. Other national database systems were supported by email. • National tuna fisheries statistics have been updated on the SPC/OFP website on schedule. The latest version (v7.2) of the CES query interface on CD ROM was distributed to each member. • Assistance was provided in producing the national reports of the Federated States of Micronesia, Papua New Guinea and Tonga, and the reports for Fiji and Palau were produced during attachments of staff from each country to SPC headquarters.

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
<p><i>Output 2.5: Enhanced information resulting from tuna fishery port samplers and observers as a result of improved national and regional capacity</i></p>	<ul style="list-style-type: none"> • Provision of technical assistance for the development and coordination of national observer programmes and port sampling programmes • Development of reference material for national port sampling programmes and observer programmes, including a species identification guide, a longline observer manual, a brochure on cetacean interactions, and the 'Fork Length' newsletter for port samplers and observers • Training of port samplers, observers and supervisors of national port sampling and observer programmes • Development and implementation of procedures for the control of port sampling and observer data quality in national programmes • Implementation of sampling requests from the OFP Biology & Ecology Section, as required 	<ul style="list-style-type: none"> • Technical assistance for sampling programmes was provided to the Cook Islands, Fiji, Kiribati, Marshall Islands, New Caledonia, Papua New Guinea, Samoa, Solomon Islands and Tonga. A database system to manage observer programmes was implemented in the Cook Islands, Fiji and Kiribati. • A port sampling manual was published. The development of a species identification guide and a brochure on cetacean interactions is ongoing. • Training courses for port samplers and observers were conducted in the Cook Islands, Kiribati and Papua New Guinea. A regional course was conducted in Fiji, with participants from Fiji, Marshall Islands, Nauru, Niue, Palau, Tokelau, Tonga, Tuvalu and Vanuatu. • Data quality for national sampling programmes was developed through a visit by OFP staff to Papua New Guinea and Solomon Islands. The quality of species identification data, collected by observers on purse seiners during 1988–2001 and held by the OFP, was reviewed. A data quality flagging system was added to the purse-seine port sampling database. • Otolith collection by observers has commenced in Papua New Guinea and training for otolith collection has been provided in the Solomon Islands. Stomachs have been collected through all observer programmes.

Part III: Summary of six-month/annual assessment of progress

Objectives and Outputs	Planned workplan for 2003	Six-month/annual assessment
Component 3 – Biology & Ecology		
Objective: Understanding pelagic ecosystems in relation to tuna and associated species stocks		
<p><i>Output 3.1: Enhanced models of regional pelagic ecosystem processes that promote progressively better prediction of tuna stock distribution, abundance and availability to fisheries</i></p>	<ul style="list-style-type: none"> Continued development of SEPODYM applications to skipjack and albacore tunas, including 1955–2000 bio-geochemical model output and compare with MULTIFAN-CL estimates Develop an initial SEPODYM application to yellowfin tuna Continued development of the skipjack tuna IBM, incorporating 1960–1999 environmental time series and comparisons to MULTIFAN-CL estimates Implement the PFRP project “Mixed-resolution models for investigating individual to population scale spatial dynamics” <ul style="list-style-type: none"> (i) Recruit a post-doctoral student to develop a bigeye tuna IBM; (ii) Collaborate with PFRP researchers on development of mixed-resolution advection-diffusion-reaction models Develop a preliminary model of the western tropical Pacific warm pool ecosystem using the ECOPATH-ECOSIM system, and consider alternatives to the ECOPATH-ECOSIM approach 	<ul style="list-style-type: none"> Simulations for skipjack and albacore tuna completed and presented to SCTB 16. Documents are available at: http://www.spc.int/OceanFish/Html/SCTB/SCTB16/index.htm SEPODYM simulation for yellowfin tuna completed and presented to SCTB 16. Document available at above website. Model development is continuing. First simulations have been run but more work is needed to improve biological realism before evaluation of the results against other estimates. PFRP contract was received in July 2003. Three post-doctoral candidates short-listed, final recruitment will occur after their interview. New outputs from the ESSIC model at ½ deg square resolution now available for analysis and for input in SEPODYM, SKIP-I and future BET-I. The first version has been completed with the help of a consultancy contract (O. Godinot). Final report accepted and results presented at SCTB 16. Further developments in SEPODYM envisaged to have 3 components of intermediate (forage) trophic levels and 4 tuna species together in a first version of a Spatial Ecosystem And Populations Dynamics Model (SEAPODYM).

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
	<ul style="list-style-type: none"> Review and test alternative ecosystem metrics for monitoring the status of the western tropical Pacific warm pool ecosystem 	<ul style="list-style-type: none"> Literature review in progress. Use of the Fisher Information index based on multiple time-series of physical and biological variables will be explored .
<p><i>Output 3.2: Better knowledge of tuna biological processes important to stock assessment and ecosystem assessment, including tuna movement, habitat utilisation, age structure, growth, feeding ecology, recruitment, and reproduction</i></p>	<ul style="list-style-type: none"> Maintain the OFP ageing laboratory and develop archiving system for hard part data and samples Complete a paper describing estimation of bigeye and yellowfin tuna growth as inferred from otoliths, tagging and length-frequency data Begin otolith sampling of small juvenile tropical tunas and South Pacific albacore for a study on ENSO effects on growth rates Develop a sampling protocol for small billfish in New Caledonia and French Polynesia using PROCFish observers Conduct sampling and analysis of stomach contents for tuna and main by-catch species – approximately 100 samples for each species Organise 1,000 samples for C and N isotope analysis of trophic level at Univ. of Hawaii as part of PFRP project Conduct 3 or more plankton and squid sampling cruises in New Caledonia to collect additional material for trophic level analysis Deploy 25 PSAT and 100 archival tags on bigeye and yellowfin tuna – tagging will be conducted in PNG, New Caledonia, French Polynesia, Tonga and in international waters adjacent to Kiribati 	<ul style="list-style-type: none"> Ageing laboratory has been established in new SPC facility and database is now waiting final developments with the assistance of the OFP fisheries database supervisor. Draft completed and waiting for review and input from colleagues of the stock assessment section (for MULTIFAN-CL growth estimates). First seasonal sampling of albacore in New Zealand troll fishery completed. No samples from the warm pool, but some archived otoliths may be available at CSIRO. Sampling protocol written and provided to PROCFish PTOM observer programs. 662 stomachs collected, 432 analysed. Preliminary analysis presented at SCTB 16. 148 muscle, 73 liver samples of pelagic species, 17 Particulate Organic Matter, 46 zooplankton and 100 micronekton samples sent for analysis at the University of Hawaii. Two plankton sampling trips completed and providing samples detailed above. One tagging cruise in PNG (3 PSAT deployed), one in New Caledonia (no catch), one planned in August in French Polynesia, one in the warm pool in Oct-Nov for archival tagging, and one in Tonga in December.

Part III: Summary of six-month/annual assessment of progress

<i>Objectives and Outputs</i>	<i>Planned workplan for 2003</i>	<i>Six-month/annual assessment</i>
	<ul style="list-style-type: none">• Develop a database for archival tag and PSAT data• Compile and analyse archival tag and PSAT data to determine vertical habitat utilisation by bigeye and yellowfin tuna	<ul style="list-style-type: none">• A first preliminary database has been created for archival tags only.• Deferred until Wildlife Computer (company supplying PSAT tags) provides software needed to interpret PSAT data

Part IV: Finances and Financial Statements for 2003

The Oceanic Fisheries Programme received funding (including carry over from 2002) of 3,473,883 CFP units for its operation in 2003. The table below gives a breakdown of the funding by donor and work area.

Oceanic Fisheries Programme anticipated funding for 2003 (CFP units)

Funding source	Stock Assessment & Modelling	Statistics & Monitoring	Biology & Ecology	Programme Management	TOTAL
Programme					
AusAID	208,000	312,000	0	0	520,000
Core	0	0	0	129,200	129,200
France	0	250,000	0	0	250,000
NZAID	0	70,000	0	0	70,000
<i>Sub-total</i>	208,000	632,000	0	129,200	969,200
Project					
EU	371,346	773,268	547,328	163,028	1,854,970
GEF	99,360	177,120	110,160	0	386,640
PNG	29,139	0	0	0	29,139
Taiwan/ROC (sampling)	0	27,000	0	0	27,000
Taiwan/ROC (tagging)	0	0	32,840	0	32,840
Korea	0	0	57,565	0	57,565
Misc. project funding	38,843	38,843	38,843	0	116,529
<i>Sub-total</i>	538,688	1,016,231	786,735	163,028	2,504,683
TOTAL	746,688	1,648,231	786,735	292,228	3,473,883

Note: programme funding is fully acquitted by this particular report and comes from funds (more or less) guaranteed exclusively to SPC over the strategic plan period 2003-5 (although not necessarily to individual activities or sections). Project funding on the other hand is funding received for specific projects, some of which are multi year, and are reported to the donor separate to this report.

Attached: Six-monthly statement of income and expenditure, or certified acquittals in the case of year-end reports.

ANNEX OFP Staff List

Position	Name	Nationality	Funding Source
Programme Management			
OFP Manager	John Hampton	Australia	Core
Programme Administrator	Kay Parry	France/New Zealand	EC
Programme Assistant	Hélène Ixeco	France	France/NZAID
Stock Assessment & Modelling			
Principal Fisheries Scientist	Vacant		AusAID
Senior Fisheries Scientist	Adam Langley	New Zealand	AusAID
Senior Fisheries Scientist	Marc Labelle	Canada/France	GEF
Senior Fisheries Scientist	David Kirby	U.K.	EC
Research Officer	Fabrice Bouyé	France	EC
Statistics & Monitoring			
Principal Fisheries Scientist	Tim Lawson	Canada/France	France
Fisheries Database Supervisor	Peter Williams	Australia	AusAID
Fisheries IT Specialist	Emmanuel Schneider	France	France
Fisheries IT Specialist	Colin Millar	Australia	AusAID
Port Sampling and Observer Supervisor	Peter Sharples	U.K./New Zealand	EC
Port Sampling and Observer Trainer	Siosifa Fukofuka	Tonga	EC
Fisheries Monitoring Supervisor	Deirdre Brogan	Ireland	GEF
Data Entry Technician	Sonia Savea	France	France
Data Entry Technician	Nathalie Lenormand	France	AusAID
Data Entry Technician	Christine Nguyen	France	AusAID
Data Entry Technician	Stephanie Chuvand	France	EC
Monitoring Supervisor (NC)	Geoffrey Bertrand	France	EC
Monitoring Supervisor (PF)	Vatea Escande	France	EC
Biology & Ecology			
Principal Fisheries Scientist	Patrick Lehodey	France	EC
Fisheries Scientist	Valerie Allain	France	GEF
Biological Analyst	Bruno Leroy	France	EC