

FAAME

Fisheries, Aquaculture and Marine Ecosystems Division

annual report 2011



Fisheries, Aquaculture and Marine Ecosystems (FAME) Division

annual report

2011





F A M E

SUMMARY

This report reviews the achievements of the Fisheries, Aquaculture and Marine Ecosystems Division in 2011, and outlines work planned for 2012.

The division has made good progress during 2011 in implementing the work programme. The achievement of higher level objectives is difficult to evaluate on an annual basis but will be analysed during an internal review of the strategic plan in early 2012.

Some new work areas are being developed in response to decisions by Heads of Fisheries. More emphasis on helping to understand and adapt to the impacts of climate change is planned.

At present the division is quite well supported by project funding, but the reduction in recurrent funding is a concern. It is proving difficult to provide services to territory members who are excluded from access to the main sources of project funding.

The report is supplemented by five annexes:

- Progress against strategic plan objectives
- Main country specific activities completed in line with joint country strategies (JCS)
- Major publications
- Main sectoral meetings and workshops
- Outcomes of the 7th Heads of Fisheries Meeting



FAME

THE DIVISION

The Fisheries, Aquaculture and Marine Ecosystems (FAME) Division mainly consists of two programmes: the Oceanic Fisheries Programme (OFP) and the Coastal Fisheries Programme (CFP). The Director's Office provides oversight and support for both programmes.

The goal of the division is **the sustainable management of the marine resources of the Pacific Islands region for economic growth, food security and environmental conservation.**

The goals of the coastal and oceanic programmes are respectively:

Coastal fisheries, nearshore fisheries and aquaculture in Pacific Island countries and territories (PICTs) are managed and developed sustainably

and

Fisheries exploiting the region's resources of tuna, billfish and related species are managed for economic and ecological sustainability using the best available scientific information.

The work that contributed to the achievement of these goals during 2011 is reported in Annex 1 by objective and result area.

Annex 2 displays some of the important national activities by country, showing the range of services provided in implementing the fisheries sector part of the various joint country strategies.

Finance

The revised budget for the division for 2011 was 13,016,300 CFP units (equivalent to approximately USD 14.5 million at current exchange rates). The breakdown between the two programmes and the Director's office (which includes some projects which are implemented by both programmes) is shown in Table 1.

Table 1: Revised expenditure budget of FAME for 2011 in CFP units

	Director	OFP	CFP	Division
Recurrent	540,600	1,170,300	1,295,600	2,992,400
Project	1,717,600 ¹	6,050,100	2,256,200	10,023,900
Total	2,258,200	7,220,400	3,551,800	13,030,400

Project funding was boosted by the approval of several projects in late 2010 and early 2011 (as foreseen in last year's report), while recurrent funding was reduced by 8% when the budget was revised as a result of cuts in SPC overall programme funding.

Although total funding is at a higher level than in previous years, the cut in programme funding puts the division in the paradoxical position of having to leave key programme-funded positions vacant (they were programme funded precisely because this was thought to be a sustainable source of finance) and also causes difficulty in delivering services to some members, as much of the project funding is restricted to support for members of the African Caribbean and Pacific Group of States (ACP). This is discussed further below.

Staffing

In the last quarter of 2011 the division had 86 staff, of whom 34 are female (40%). The breakdown is shown in Table 2.

Table 2: Staffing of FAME as at September 2011

	Director's Office	OFP	CFP	Total
Professional	3	28	18	49
Technical	3 ²	28	1	32
Administrative	1	2	2	5
Combined	7	58	21	86

Staffing levels increased since 2010, with more professional (internationally recruited) and considerably more technical staff employed. The increase in technical staff reflects the recruitment of additional data control technicians, on short-term contracts, to enter oceanic fisheries data, particularly data collected by observers. The number of administrative staff has been reduced by one.

Nineteen nationalities were represented among the professional staff, and 16 of the 49 posts were held by nationals of Pacific Island countries. The number and proportion of both Pacific Island and female professional staff employed by the division has increased. As in previous years, there were technical staff seconded to national fisheries administrations (of New Caledonia, French Polynesia, Solomon Islands and Federated States of Micronesia [FSM]). The division continues to take a cautious approach to decentralisation of staff. In 2010 one professional position was placed in each of the Suva and Pohnpei offices, and by the end of 2011 they were joined by two new professional staff (working in aquaculture enterprise development and observer training) based in Suva. In addition, two data control technicians have been recruited to work in the Pohnpei office.

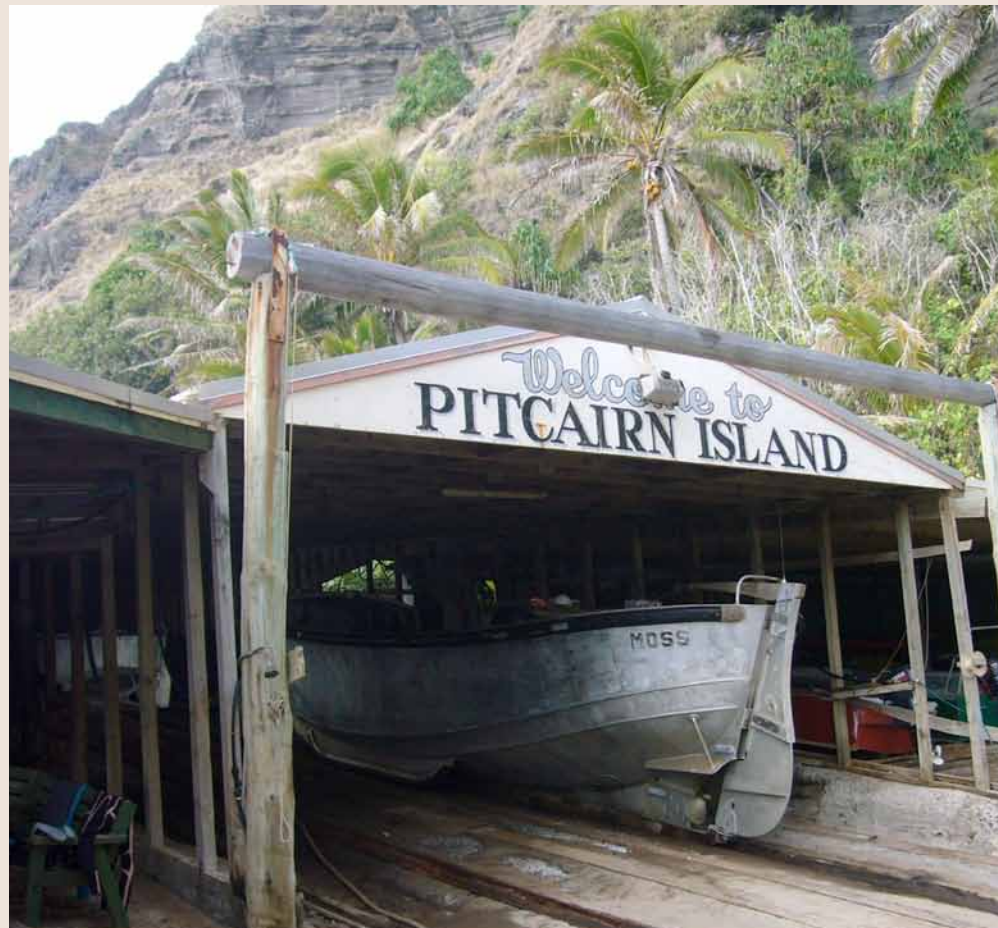
¹ Includes CRISP (Coral Reef Initiatives for the Pacific) and DevFish 2 (Development of Sustainable Tuna Fisheries in Pacific ACP Countries – Phase II) projects for which the Director has administrative oversight.

² Includes one person replacing an officer on maternity leave.

FFA

PROGRESS TOWARDS ACHIEVING STRATEGIC PLAN OBJECTIVES

A statement of work under each strategic plan objective and result area is provided as Annex 1, which details progress in implementing the work plan for 2011. This section therefore just highlights some of the main results to date in support of the objectives of each programme.



Director's Office

❖ Objective 1 – Develop and sustain effective relationships between the division and its stakeholders.

Highlights under this objective included the successful conclusion of HoF7, which provided guidance for the future direction of the programmes; and the development of fisheries components for the joint country strategies of Papua New Guinea (PNG) and New Caledonia. Relations with regional organisations involved in the management of tuna fisheries remained strong, and a new memorandum of understanding agreed with the Parties to the Nauru Agreement (PNA) formally appoints SPC to provide scientific services to this important group. The Director is also a convener of the Marine Sector Working Group (MSWG) – an informal grouping of agencies with an interest in ocean policy and management. The group has the responsibility of taking forward the Pacific Oceanscape initiative, launched by the Forum Leaders.

Pacific oceanscape

The Pacific Oceanscape was conceived by His Excellency Anote Tong, President of Kiribati, in early 2009 and the concept was endorsed by Pacific Islands Forum leaders at their 40th Meeting in August 2009. The Marine Sector Working Group (MSWG) developed the **Pacific Oceanscape Framework** in 2009/10 which was endorsed by the Leaders at their 41st meeting.

The overall intent of the Pacific Oceanscape Framework is to foster stewardship at all levels to ensure in perpetuity the health and wellbeing of our oceans and ourselves. The key principles are:

- Improving ocean governance: engaging leaders and other decision-makers in strengthening governance mechanisms;
- Sustainably managing ocean resources: educating and training scientists, and informing policymakers and other stakeholders in better management practices, including multi-use marine protected areas at all scales;
- Maintaining ocean health: reducing negative impacts of human activities, protecting and conserving biodiversity;
- Expanding our understanding of the ocean: increasing scientific knowledge to better inform decision-making;
- Protecting ocean security: bringing together the economic, environmental, political and military sectors to fight illegal and criminal practices; and
- Facilitating partnerships and cooperation: fostering collaboration to make conservation efforts more effective, from national exclusive economic zones (EEZs) to the high seas.

The Secretary General of the Pacific Islands Forum Secretariat, Tuiloma Neroni Slade, has been appointed the Pacific region's first **Ocean Commissioner**. This role is to '...provide the necessary high level representation and commitment that is urgently required to ensure dedicated advocacy and attention to ocean priorities, decisions and processes at national, regional and international levels.' The technical and scientific support to the Ocean Commissioner is being provided by relevant agencies and is facilitated by MSWG.



In the area of resource mobilisation, a joint Forum Fisheries Agency (FFA)/SPC project was signed with the New Zealand Aid Programme in March that will provide SPC with more than USD 2 million over three years to support the development of national fisheries observer programmes. Approval was also granted by the Australian Agency for International Development (AusAID) for a second phase of the Pacific Fisheries for Food Security project. This will provide AUD 4.7 million over four years for inland aquaculture development, national tuna fisheries monitoring and data management, and deepwater snapper stock assessments.

❖ **Objective 2 – Promote informed policy decisions and public awareness of marine resource issues in the Pacific.**

This objective is the basis of much of the work of the Fisheries Information Unit, which continued to produce a range of high quality publications, including the SPC *Fisheries Newsletter* – now in full colour. Other ‘routine’ work included improvements and regular updating of the website, incorporation of new publications in the fully searchable digital library (available on the Web or on CD), and the 2011 Fisheries Address book providing over 1,700 fisheries related regional contacts. An inventory of all print materials held at SPC was completed, and distribution of these to member countries is a priority. A large order of training materials was supplied to the National Fisheries College in PNG.

A new initiative has been the production of a series of fact sheets for community workers on important groups of fish and invertebrates. These provide accurate, easily understood information for use when developing community based management measures. This has drawn on the expertise of the CFP staff as well as that of non-government organisations (NGOs) working in marine conservation, and the Locally-Managed Marine Area (LMMA) Network, who are now getting this resource out to their fieldworkers. Communications targets for the year have been achieved, with several articles in regional and national print media and a number of radio interviews given to inform the wider public on fisheries issues. For 2012 FAME has decided to outsource the communication of the results of some of the division’s major projects, and a specialist has been selected following international tender to develop material using print and video media.

Coastal Fisheries Programme

❖ **Objective 1 – Assist governments and administrations in the development of scientifically informed and socially achievable coastal fisheries management policies and systems in line with the guiding principles of the Apia Policy.³**

This largely involves improving the ability of the Pacific Island countries and territories (PICTs) to evaluate and manage coastal fisheries resources, with a focus on beche-de-mer, which has been widely overfished, which is a focus on the EU-funded SciCOFish (Scientific support for the management of coastal and oceanic fisheries in the Pacific islands region) project. Following in-country practical training missions, two countries, Marshall Islands and Vanuatu, now have the capacity to carry out invertebrate resource assessments, with similar capacity building underway in Solomon Islands. In Tonga, where this field training was carried out in 2010, national fisheries administration staff worked with SPC counterparts to analyse the results and develop management advice. It was strongly recommended that Tonga close its beche-de-mer fishery in 2012, joining other countries that have already taken this step so that stocks can rebuild.

A new specialist in the marine aquarium export trade joined the section in September and assistance was provided to Nauru to investigate the viability of exporting aquarium fish and provide training for staff. During 2012 a thorough review of the status of the trade in PICTs will be carried out, identifying opportunities for development and problems.

Improved legislation and management measures have also resulted from work under this objective. Tuvalu has a draft Fisheries Management Bill with the Crown Law Office for submission to Cabinet. (FFA provided support for oceanic fisheries components, while SPC helped to develop the coastal measures). Assistance in developing national management plans for specific fisheries was provided in Tonga, Marshall Islands, Kiribati, PNG, Solomon

³ The Pacific Islands Regional Coastal Fisheries Management Policy 2008–2013 (‘the Apia Policy’) was endorsed by the 4th Ministerial Forum Fisheries Committee (FFC) in 2008.

Islands and Cook Islands. Tonga, Samoa, Nauru and Kiribati have all been able to expand the range of their community based management arrangements with SPC help.

Climate change represents a long-term threat to coastal fisheries resources, and PICTs need baseline data to monitor its impact. Teams in Marshall Islands and Tuvalu and Kiribati can now conduct baseline surveys for finfish and invertebrate resources and their habitats thanks to support provided through the climate change project, with the same surveys and capacity building to take place in FSM and PNG in 2012. This project uses work with SPC as a career building step, and is mainly implemented by young professionals on 12 month contracts who return to work on fisheries in their home countries with new skills and experience.

Monitoring impacts of climate change on coastal resources

Higher sea temperatures, rising sea levels and particularly increased ocean acidification are predicted to have severe impacts on coral reefs and other important habitat for coastal fisheries resources – but how will we know if these changes are really happening and whether they are caused by climate change or other impacts?

This Australian funded International Climate Change Adaptation Initiative (ICCAI) project is establishing monitoring sites in five Pacific Island countries in which changes in coral cover and the abundance of fish and invertebrates can be monitored over an extended period. SPC assists with baseline surveys which are used to train local teams in the techniques, and installs equipment to monitor water temperature. The techniques have, as far as possible, been standardized with survey methods that are already used in US and French territories to allow comparisons across a Pacific-wide network. A number of sites are in marine protected areas, to try to isolate the effect of fishing pressure from climate change impacts.



❖ *Objective 2 – Provide a regional framework for sustainable aquaculture, in the areas of planning, research, development and trade, for Pacific Island governments, private enterprises and other stakeholders.*

Beche-de-mer was also a focus of the Aquaculture Section at the start of the year, when SPC co-hosted with the Australian Centre for International Agricultural Research (ACIAR) an international meeting to review experience with the culture and stock enhancement of sandfish (one of the more valuable species). Fisheries staff members from Cook Islands, Fiji, FSM, Kiribati, PNG, Samoa, Solomon Islands, Tonga and Vanuatu are now fully up to date regarding opportunities and constraints in this area. There was also strong interest from New Caledonia, where there are ambitious plans to restock and farm sandfish.

As usual, technical advice was provided across a wide range of aquaculture activities – from the design of a milkfish hatchery in Nauru to the compilation of an aquaculture development plan for the Northern Mariana Islands. The completion of a risk assessment for the introduction of Nile tilapia into Solomon Islands will allow the government to make an informed decision on whether to use this species to boost production for food security.

Building skills in aquaculture is essential for the development of this fledgling industry. SPC staff completed a training needs assessment for PNG – a country that has many more inland fish farmers than the rest of PICTs put together – and will help develop the curricula for the necessary courses, which will be delivered mainly by the National Fisheries College. Two MSC students completed their projects under the supervision of SPC aquaculture staff, and two more are in progress.

A major study on the opportunities and constraints to development of mariculture in the Pacific Islands was carried out, and the initial results presented at a regional meeting jointly organised with the UN Food and Agriculture Organization (FAO). This is expected to provide some new directions for the future of this sector.

Opportunities for the development of the Pacific Islands mariculture sector

This study was carried out by a team of three consultants with extensive experience of aquaculture development and global markets for aquaculture products. SPC's fisheries development economist accompanied consultants on most of the country visits. Assessments were made of mariculture activities in five Pacific Island countries (PNG, Solomon Islands, Fiji, Cook Islands and Marshall Islands). Fisheries staff, fish farmers, traders, processors and finance organisations were consulted in these countries.

The study reviewed the results of mariculture development in PICTs, to draw lessons for future opportunities. It found that many mariculture projects had been undertaken in the past without proper economic studies, particularly of the costs involved and the potential markets for products. Potential difficulties include expensive feed, long cropping cycles, competitive markets, expensive transportation and products requiring high labour inputs. Mariculture has been promoted as an inherently 'good thing' rather than developing in response to market demand and commercial opportunities.

It calls for more through market appraisals and estimates of production, distribution and marketing costs of any proposed new venture. The involvement of private industry at an early stage in research and development helps add a dose of realism.

The report is not entirely gloomy about the prospects for mariculture. The opportunities vary greatly from one country to another. Some products in some countries show considerable promise, but their potential has to be rigorously assessed to see if they could become sustainable industries. The report noted the current problems in the pearl industry, but identified farming seaweed, shrimp, coral, sponges and some types of fish as mariculture activities which can work under the right conditions.



❖ **Objective 3 – Develop sustainable nearshore fisheries in PICTs to provide food security, livelihoods and economic growth.**

To increase sustainable fishing opportunities, Solomon Islands, FSM (Pohnpei) and Kiribati have been provided with the necessary skills to construct and deploy fish aggregating devices (FADs); associated with this programme has been training in new fishing skills to enable dozens of fishermen to increase their effectiveness fishing around FADs. As part of this capacity building, fishers and government staff are also being made more aware of sea safety issues. Experimental fishing trials were set up in Marshall Islands, targeting community-based fishing for small pelagic fish for food security. This is another opportunity to increase fish production in a sustainable manner.

The Bagan Project

With growing pressure on traditional coastal fisheries resources, fishing for small pelagic fish – sardines, anchovies and scads - provides an opportunity to sustainably increase fish production for food security. As an added advantage, in countries where ciguatera is a problem these fish are unlikely to be affected.

For this project, a technique from Indonesia will be tested, using light to attract the pelagic species at night and catching them with lift nets from a special floating platform known as a bagan. This was built in Kiribati and shipped to Majuro where it was assembled.

Fishing trials will start in early 2012, with experienced Indonesian fishermen providing guidance on the techniques. The project will add to regional experience with the method, which is also being tested in Solomon Islands under an FFA project to provide baitfish for pole and line vessels.



Fishing associations have been supported in Cook Islands, Tuvalu and Solomon Islands under the EU-funded Development of Sustainable Tuna Fisheries in Pacific ACP Countries – Phase II (DevFish2) project, providing stakeholders with a voice in the formulation of tuna fishery development and management arrangements, and providing a direct channel for support to the private sector.

Two new services provided by in support of this objective were also been greatly in demand:

- Economic analysis has been provided for a number of projects, including the FAD programme in Niue, an assessment of fish production and marketing options for Pitcairn and longline fishing trials in Wallis and Futuna; and
- The authorities involved in certifying seafood exports to Europe ('competent authorities') in Solomon Islands, Fiji, PNG and Vanuatu have received the first parts of an extended programme of technical assistance to help meet the demanding requirements through Phase I of the AusAID Fisheries and Food Security project.

Oceanic Fisheries Programme

❖ **Objective 1 – Provide high-quality scientific information and advice for regional and national fisheries management authorities on the status of, and fishery impacts on, stocks targeted or otherwise impacted by regional oceanic fisheries.**

Region-wide stock assessments were completed on all four of the major tuna stocks and accepted by the Scientific Committee of the Western and Central Pacific Fisheries Commission (WCPFC). It is hoped that these will form the scientific basis of a new management measure, aimed at further reducing catches of bigeye tuna; as well as establishing exploitation targets for skipjack and yellowfin tuna. Analysis of existing measures has shown that, while not sufficient, the three-month closure of fishing on FADs is having some effect, and this will probably be continued and possibly extended. In terms of non-target species that are of concern, good progress was also made in the implementation of the shark research plan. Management measures at WCPFC are largely driven by the FFA member countries and the subregional groupings, which also develop measures for application in their own areas of jurisdiction. Considerable effort was devoted to providing these groups with the scientific advice and support that they require, including provision of a scientist to work full-time on such initiatives, with support from other programme staff.

The programme released two new products during the year to assist national fisheries administrations. Secure national webpages for each member now provide regularly updated analysis of the key features of the tuna fishery in their waters. This supplements, but of course does not replace, direct national-level advice – which has recently focused on supporting the development of a new tuna management plan in Solomon Islands. A second product – the TUNA Management Simulator (TUMAS) can be downloaded from the Internet and – based on the current stock assessments for skipjack, yellowfin and bigeye tuna – allows anyone to model the effects of expanding or reducing the various fishing fleets. This allows fisheries managers to test for themselves the likely impacts of management measures. The capacity of national tuna managers to interpret stock assessments was developed with workshops both at the advanced level and for less experienced staff – part of the ongoing series of stock assessment training workshops. Twenty-one of SPC's twenty-two members participated in this training, with many sending extra participants at their own expense.

Marine Stewardship Council (MSC) Certification

An important milestone in the management of the region's tuna resources is the decision that a large part of the fishery for skipjack tuna should be designated as a 'sustainable fishery' by the respected certification body, the Marine Stewardship Council. It is the first purse seine tuna fishery in the world to receive this designation, which has been made possible by the high quality of fisheries data and rigorous stock assessments provided by the Oceanic Fisheries Programme, as well as the comprehensive fisheries observer coverage developed with training and support from SPC. Full observer coverage will also be needed to support the chain of custody – the system for ensuring that the MSC certified fish really comes from the approved fishery.

SPC will work with the PNA to develop reference points and harvest control rules for the fishery which are conditions for this certification. The MSC approval should provide important advantages for catches from PNA waters in international markets, as well as giving an incentive for further improvements in the management of the resource.



An encouraging result in terms of OFP's overall objective is the recent decision that the purse-seine fishery on free schools skipjack tuna in PNA waters should be certified as a sustainable fishery by MSC. It is the first major tuna fishery in the world to get the MSC certification. The OFP staff have assisted the certification process by providing information to the assessment team, and will work with PNA to develop the additional measures that have been specified as conditions of the certification.

❖ **Objective 2 – Collect and analyse accurate and comprehensive scientific data for regional and national fisheries management authorities on fisheries targeting the region's resources of tuna, billfish and other oceanic species.**

The programme continued to tackle the huge volume of data entry and analysis needed to maintain an accurate picture of the region's oceanic fisheries. The volume of data processed has grown enormously with increased observer coverage, and additional data entry staff have been employed in Noumea and Pohnpei to handle this workload as well as staff to manage data quality. To give an idea of the work involved, in 12 months the following data were entered: 191,663 fishing operation records on **logsheets** (includes catch by species, effort and positional information); information from 156,773 events recorded by **observers** (includes detailed catch by species, detailed effort and position information); and 1,723,996 individual fish measurements collected by **observers** and **port samplers**.

While nearly all the work focuses on SPC members, fishing in neighbouring countries impacts on the resource and the data on these fisheries is in need of improvement. Technical assistance from SPC has been provided to Indonesia, the Philippines and Vietnam, funded by the Western Pacific East Asia Oceanic Fisheries Management Project (a project funded by the Global Environment Facility and being implemented by WCPFC and the three countries mentioned), resulting in considerable refinement of catch and effort estimates.

The analysis of this data is provided to countries and regional groupings on a regular basis through the Catch and Effort System (CES). Training was provided to the FFA fisheries managers to improve their skills in using the CES system, which itself has been upgraded by including data from the region's vessel monitoring system. The system for management of data at the national level, Tuna Fishery Data Management System (TUFMAN), also continues to be refined and now incorporates new routines to help detect illegal fishing. TUFMAN training was conducted at regional Tuna Data Workshop, and in-country in FSM, Fiji, Marshall Islands, Palau, Samoa, Solomon Islands, Tonga and Tuvalu. SPC has also provided data audit services to FSM and Fiji to identify gaps in data coverage.

A further 100 trained observers were available for deployment by the end of the year, bringing the total in the region up to 660; this is a significant number of jobs and represents an improvement in the monitoring of the fishery. The SPC staff are increasingly turning their attention to the personnel and systems needed to support the rapid growth of this activity, with training of trainers and debriefers delivered, as well as support to national observer coordinators in managing their national observer programmes.

'Deep Blue' – A new video for observer training

To improve the quality of observer training a new video has been produced on the work of tuna fisheries observers on purse seine vessels. Funded by the EU SciCOFish project and filmed by Pasifika Communications, the video shows the life and work of a Papua New Guinea observer on board a locally based fishing boat.

The video gives trainee observers a good understanding of how the purse seine technique works, as well as highlighting basic rules for personal safety on board. Interviews with SPC staff deliver a series of messages on the importance of the work that they will be doing.

The excellent action footage of purse seine fishing operations has already found another use – the development of a crew training video which will support plans to increase employment of Pacific Islander crew. Meanwhile another video for training observers for work on tuna longliners will be completed in 2012.

❖ Objective 3 – Improve understanding of pelagic ecosystems in the western and central Pacific Ocean

The ‘flagship’ project in support of this activity in 2011 was the new PNG-funded tagging project, which completed its first year of activities, including tagging operations from April to July with 40,000 tuna tagged and released. This was supported by two central Pacific cruises in October and November, targeting the tagging of bigeye tuna in particular. Since the start of the current programme of tagging operations, over 320,000 tuna had been tagged by the end of 2011, and around 14% of all tags had been returned.

Of course, despite the widespread publicity, rewards offered, and a network of tag recovery officers, not all of the tagged tuna captured are reported back to SPC – a tag may simply not be seen when large volumes of fish are being handled, for example. To estimate the level of under-reporting, a series of trials have been set up in which observers insert tags into fish that have already been caught onboard the vessel. The proportion that are returned to SPC, and whether they come from the vessel crew, stevedores unloading the catch, or workers in fish factories processing it, both allows estimates of reporting rates from different fisheries and pinpoints where more awareness-raising may be needed. Data from the recent tagging programmes were used in 2011 to improve the stock assessments of skipjack, yellowfin and bigeye tuna.

SPC has, for some time, been working with *Collecte Localisation Satellites* of France (CLS) on the development of a new tuna population modelling programme called SEAPODYM. This system relies less on information from the fishery, but estimates the abundance and distribution of tuna from knowledge of their behaviour in response to the availability of food and oceanographic conditions. This allows prediction of the impacts of changes in climate, as well as the opportunity to look at what will happen in relatively small areas of ocean (national exclusive economic zones [EEZs] or even parts of an EEZ). The system is now fully functional for three species (skipjack, bigeye and South Pacific albacore) and should include yellowfin tuna by early 2012. The model has already been used to predict climate change impacts on tuna, as well as to produce two national tuna resource profiles.

This objective also covers the work to improve knowledge of the basic biology of tuna and related species – growth rates, reproduction, and diet – through a programme of sampling and analysis. These parameters are used to improve the models used for stock assessment. Important new information on the growth of bigeye tuna was provided during the year. Work on understanding the food chains of tuna continues.

PNG tuna tagging programme

2011 saw the first tagging cruises under the PNG tuna tagging programme. Funded by the PNG National Fisheries Authority (NFA), this is believed to be the first major tuna tagging programme financed by a developing coastal state. Building the capacity of NFA staff to manage a large field project is an important objective of the project.

Technical support for the programme is provided by SPC, and the aim is to tag 120,000 tuna over three years. As with earlier large scale tagging operations, a pole and line vessel from Solomon Islands is being chartered for the fishing operations.

Purse seine fishing activity in PNG waters has increased rapidly in recent years, and the EEZ now accounts for more than a third of the catch in the western and central Pacific Ocean. The tagging programme is intended to provide more information on the stocks of this major fishing ground. The intense fishing effort is already providing high rates of tag return.



Coral Reef Initiatives for the Pacific (CRISP)

The aims of the CRISP project are to develop a vision for the future of coral reefs and of the people who depend on them and to introduce strategies and projects to conserve their biodiversity while developing the economic and environmental services that they provide both locally and globally.

As the programme officially ended in December 2011, the year was mainly dedicated to synthesising the results and outputs and trying to secure new funding for the continuation of several successful activities that have been developed under CRISP. Some existing activities were, however, still ongoing in 2011.

The synthesis of outputs of the CRISP programme draws on four round-table meetings that were held in New Caledonia (March 2011), French Polynesia (March 2011), Fiji (April 2011) and Vanuatu (April 2011) to gather lessons learned and discuss future directions. An important output was an interactive DVD which allows access to more than 800 CRISP products.

The ongoing CRISP activities in 2011 were essentially to develop the capture and culture of postlarvae (focusing on clams in French Polynesia), economic studies (Vanuatu and regional), a shark connectivity study in the Coral Sea and support to the sustainable management of reef fish spawning aggregations in partnership with the Society for the Conservation of Reef Fish Aggregations (including presentations at the International Coral Reef Initiative meetings and HoF7).

Cross-cutting initiatives

Gender

The SciCOFish ‘Gender in Oceanic and Coastal Fisheries Science and Management’ assessment was conducted through a consultancy and benchmarked the current situation in Solomon Islands (Melanesia), Marshall Islands (Micronesia) and Tonga (Polynesia). The report and four-page summary brochure outlines some steps that can be taken to break down the barriers to gender equality in the sector, which include raising the profile of fisheries as a potential career and of women already working in the sector, providing a support network, and improving the work environment and conditions at the institutional level.

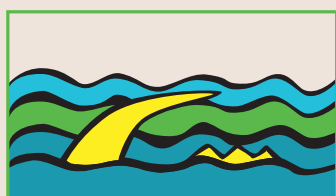
Some of the interventions recommended include the development of promotional materials and special interest stories focusing on successful women in the sector; facilitating the dissemination of information to schools and universities covering opportunities in fisheries and marine science and management; and providing funding for scholarships, fisheries staff training and attachments, and short-term attachments for youth in the fisheries sector. The outcomes of this study are now being assessed and incorporated across the work areas of the division.

Climate change

Staff from all FAME work areas have contributed to the *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change* publication, and the topic formed the basis of a full day of presentations and discussion at HoF7. Both programmes are implementing specific projects in the climate change area, with a focus on predicting and monitoring impacts. The division has also worked closely with the Coping with Climate Change in the Pacific Islands Region project funded by the German Department for International Development (GIZ) to develop a work plan for climate change adaptations for the fisheries sector in most of the 12 PICTs that will benefit from this initiative.



OUTCOMES OF THE 2011 HEADS OF FISHERIES MEETING



7th SPC HoF
28/02–4/03, 2011
Noumea, New Caledonia

The seventh SPC Heads of Fisheries (HoF) Meeting took place at SPC headquarters in Noumea from 1st to 4th March 2011. It was chaired on behalf of PNG by Leban Gisawa. HoF is a regional meeting of the heads of SPC member country and territory fisheries departments, or their deputies, covering the entire range of interests for which they have responsibility and on which the FAME Division provides advice and assistance. As such, the HoF meeting plays a unique role in providing strategic guidance to both CFP and OFP.

The full report of outcomes of the meeting is presented as Annex 5. To summarise briefly, HoF reviewed the work programme of the division and expressed strong support for the continuation of services proposed. Some recent changes of emphasis also met with approval. For CFP this includes new work areas on coastal fisheries economics, support for countries in meeting export requirements for fisheries products, and a renewed focus on fisheries legislation (in partnership with FFA). For OFP the meeting noted with appreciation the new systems for delivering national level scientific advice, and the increased emphasis on managing the data collected by fisheries observers. The meeting identified the areas in which FAME support for members is an ongoing requirement, and endorsed efforts to secure more sustainable sources of funding for these. Members from the territories also expressed their concern that an increasing reliance on project funding can see them excluded from activities that target the ACP countries in particular.

Three new work areas were identified as priorities for FAME:

- assisting members with stock assessment of deepwater snapper resources;
- support for national tuna database development, particularly for small-scale fisheries; and
- assistance with inland aquaculture development, with emphasis on the areas of biosecurity and aquatic animal health.

These three areas, with their close links to food security in PICTs, were identified as suitable for support under Part 2 of the AusAID Fisheries for Food Security project, which was approved later in the year.

Benefiting from expertise of the new Applied Geoscience (SOPAC) division of SPC, the meeting discussed the issue of maritime boundaries and noted the urgency of finding solutions to the long-running problem faced by many members in properly establishing their boundaries. SPC was urged to be proactive in providing support, with the assistance of other partners. A full-day session was also devoted to climate change, with presenters giving a comprehensive preview of the findings of the vulnerability assessment. The meeting provided detailed guidance on the structure of the national summaries which have now been developed as part of this project.



F A M E

2012 WORK PROGRAMME AND BUDGET

The expected outputs of the division for 2012 – which can be achieved with the financial resources that have been secured – are summarised in the ‘green book’ SPC budget. It is not always easy to separate the results of recurrent and project funding – some results require the input of resources from both, reflecting the alignment of projects with the strategic plan and a chronic shortage of recurrent funding.

These results are developed into a more detailed work plan in the first weeks of the year, which itself feeds into the performance appraisal system. Each member of staff is effectively assigned responsibility for delivering on relevant parts of the work programme. While the general areas of work are well defined, the benefits of detailed planning must be balanced against the need for flexibility. Fisheries issues can evolve quickly, making planned work redundant but bringing up new requirements. Member fisheries agencies often state that they value the flexibility and responsiveness of SPC in helping them deal with the unexpected; they can get help from other partners when the needs are foreseen well in advance.

The main work areas and projects of the division are described in the report on 2011 results. During 2012, implementation of these programmes will of course continue. This section of the report will therefore focus on some new initiatives.

Director's Office

Strategic plan

The year will begin with an internal mid-term review of the FAME strategic plan. It is often difficult to measure progress towards higher level objectives on an annual basis, so the review will evaluate positive developments in the region's fisheries and the extent to which FAME's work has contributed to these and lessened the impacts of unfavourable changes. It will also provide an opportunity to incorporate some of the new emphasis in FAME's work arising from direction by the Heads of Fisheries meetings and joint country strategies. A greater focus on adaptation to climate change in the fisheries sector is envisaged. The outcomes of the review will be presented for discussion and approval to a 'mini' Heads of Fisheries meeting in Noumea in June.

Communications

There will also be a new focus on communication of project results, following the outsourcing of this task to a professional communications consultant. A new policy brief on oceanic fisheries and fact sheets on the requirements for a sustainable aquarium export business are planned, along with a series of policy briefs covering climate change effects on fisheries and aquaculture and the use of inshore FADs, and additional information sheets for fishing communities. A second new initiative will be the development of educational materials on marine resource management for use in schools as part of the 'life skills' curriculum.

Oceanic fisheries

Stock assessment

In addition to the assessment of tuna, with a new assessment of the albacore resource planned in 2012, there will be a new focus on non-target species impacted by the fisheries. Assessments of striped marlin and preliminary assessments of two shark species will be completed during the year.

Reference points

Turning scientific advice into effective management action continues to pose a challenge at the regional level; those who are concerned about overfishing of bigeye tuna will have noticed that warnings have been given for the last five years. Currently management action is often delayed and 'watered down' to reach a compromise that takes account of various national interests. As a result, there is interest in developing pre-agreed 'triggers' that will automatically result in management measures (for example a closure of the fishery may be agreed if the stock declines below a limit reference point). This should result in more timely and effective action. Reference points are now a priority for WCPFC and will also be needed if PNA is to retain sustainability certification for a large part of its skipjack fishery. SPC will work with FFA to develop reference points, initially for skipjack and bigeye tuna.

Observer programme

Training of observers will continue, with increasing emphasis on the region's longline fisheries. With 100% coverage on purse seiners maintained, the next challenge is to have observers present for 5% of all longline operations by mid-2012. A new observer training officer has started work based in Suva and will focus particularly on the South Pacific countries to build observer numbers. The emphasis on training observer trainers and debriefers (who interview observers after each trip and review their reports) will continue, with four new trainers and 16–20 debriefers expected to become qualified during the year.

Use of tagging results

While large scale tuna tagging will continue in the PNG waters (with two six-week cruises planned) as well as in the central Pacific, more effort will be devoted to analysis of the results. A report on tuna dynamics in the PNG EEZ (which has accounted for more than a third of the WCPFC purse-seine catch in recent years) will be a priority. Additional resources would facilitate this work.

Cross-cutting – Gender

To progress the gender objective of the SciCOFish project, some of the recommendations from the Gender study undertaken in 2011 will be implemented, including raising the profile of equal employment and training opportunities for people (male and female) wishing to enter a career in observer work and developing the appropriate training modules and a “code of conduct” for the work environment of observers.

Coastal fisheries

Working with NGOs in project delivery to coastal communities

FAME collaborated with The Nature Conservancy (TNC) on the development of community-based fisheries management guidelines for the Pacific, with the Locally Managed Marine Area (LMMA) Network in the production of information sheets for fishing communities, and with other NGOs through a workshop on monitoring for management of coastal resources. FAME will pursue this collaboration and develop new links, including relating to the standardisation of monitoring protocols and data collected when working with coastal communities and participation in the Nature Conservation Roundtable processes.

Moving forward with the development of mariculture commodities in the region

The results of the current review of mariculture development opportunities and constraints in PICTs will set the focus for SPC assistance in the coming years on the commodities that can be realistically developed in the region. This will be the first task of the new Aquaculture Officer (Mariculture) who started with SPC in October 2011, and the PICT aquaculture specialists have had the opportunity to discuss this at the SPC/FAO Regional Aquaculture Workshop.

FAD technology and cost-effectiveness

The use of moored FADs has been identified as one of the most effective ways to improve the productivity in nearshore fisheries targeting tunas and other pelagic species. An international symposium on FADs was held in French Polynesia in November and brought together experts from around the world to assess FAD designs and their effectiveness, and to share experiences. The outcomes will be used to improve current national FAD programmes in the Pacific. SPC will also be undertaking cost benefit analyses of FAD programmes to highlight their importance for nearshore fisheries.

2012 budget

The 2012 approved expenditure budget is as follows:

Table 3: Estimated expenditure budget of FAME for 2012 in CFP units

	Director	OFP	CFP	Division	Change on 2011 (rev.)
Recurrent	477,700	1,142,700	1,199,200	2,809,600	-6%
Project	1,357,200	5,825,500	2,295,300	9,478,000	-5%
Total	1,834,900	6,968,200	3,494,500	12,297,600	-5%

The decline in recurrent income, coming on top of a reduction of 8% in the 2011 revised budget and an earlier cut in 2009, obviously presents some challenges at a time of rising costs. The fall in project funding, which reflects the end of three projects in oceanic fisheries, is now largely taken up by new projects that were approved after the finalisation of the budget for CRGA approval.



FUTURE DIRECTION, OPPORTUNITIES AND CHALLENGES

There are future opportunities to develop work in two main thematic areas that will involve both FAME programmes; in both cases new project funding is now available. A significant challenge facing the division is the delivery of services to territory members when much of the project funded is reserved for other groups.

Food security

Part 2 of the AusAID Fisheries for Food Security project was agreed before the end of 2011. This project, with a budget of AUD 4.75 million (4 million CFP units) over four years, responds directly to priorities identified by the HoF meeting:

- assisting members with stock assessment of deepwater snapper resources;
- support for national tuna database development, particularly for small-scale fisheries; and
- assistance with inland aquaculture development, with emphasis on the areas of biosecurity and aquatic animal health.

Climate change

Two other new projects will start in 2012 and a third is under consideration by the proposed donors. SPC FAME may also be involved in implementing some bilateral projects.

- a) A fisheries component of the CCCPIR project funded by GIZ will support: (1) further analysis of the impacts of climate change on the region's tuna resources, and (2) technical assistance to support adaptation measures for coastal communities. The budget for these totals EUR 700,000 (830,000 CFP units) over 2–3 years and becomes available in early 2012.
- b) A proposal was developed for support under AusAID climate change funding to start to implement SPC's broader climate change strategy. This will build on earlier AusAID support for climate change work in fisheries and will raise awareness of the vulnerability of fisheries at the national level, help countries improve monitoring and develop adaptation measures, and build capacity in all areas relating to fisheries and climate change. The proposal was approved at the very end of 2011, and provides FAME with funding of around AUD 2 million (1.7 million CFP units) over two years also starting in 2012.
- c) A new proposal which would build on the results of the CRISP project – entitled Restoration of Ecosystem Services against Climate Change Unfavourable Effects (RESCCUE) – has been proposed for funding by the French Development Agency (AFD) and the French Global Environment Fund (FFEM). If approved, the proposal would see the commitment of EUR 7 million (8.4 million CFP units) for the development of integrated coastal zone management to aid adaptation to climate change. A feasibility study for the project will be carried out in May 2012.

Service delivery to territories

While the growth in project funding is extremely welcome and allows FAME to provide improved services to members, there is a downside in terms of service provision to the territories. In 2012, for example, some 43% of the division's income will come from the European Union and is restricted to work for the 14 Pacific ACP members of SPC plus Timor Leste, the GIZ project is restricted to 12 of these countries, and so on. In the past, services to member territories have largely been financed through programme support. As this becomes increasingly constrained, the funds needed to carry out work in the field, and even support participants' attendance at meetings, are disappearing.

Of course, the work of SPC has always tended to be focused more on the independent countries. The territories are generally wealthier, have more capacity, and can call on the direct support of their 'mother' country. Nevertheless, FAME provides services to these territories that are not available elsewhere; while their expertise and experience means that their integration in activities and meetings benefits the whole membership. It is recommended that development partners, and particularly the metropolitan powers responsible for these territories, consider funding modalities that would further support their integration into SPC projects and programmes.

FAME

CONCLUSION

The division has made good progress during 2011 in implementing the work programme. The achievement of higher level objectives is difficult to evaluate on an annual basis but will be analysed during a review of the strategic plan in early 2012. Some new work areas will also be developed in response to decisions by Heads of Fisheries. More emphasis on helping to understand and adapt to the impacts of climate change is planned, with the approval of new projects. The division is generally well supported by project funding, but the reduction in recurrent funding is a concern.



Workplan's objectives and outputs

Divisional – objective 1: to develop and sustain effective relationships between the division and its stakeholders		
Results	2011 activities	Status at year end
<p>1.1 Programme plans and activities that respond to the needs and priorities of members</p>	<p>2011 activities</p> <ol style="list-style-type: none"> 1. Full Heads of Fisheries meeting is held in Noumea in March, with special session on climate change. 2. 2011 work programmes completed by March, with >80% implementation of activities during the year 3. Effective participation by FAME in 4 JCS missions; JCS reports used as basis for activity planning in 2011. 4. Regular visits to member Fisheries Departments for consultations; meet with all heads of fisheries on fringes of regional meetings; regular email communications. 5. Support development of Institutional Strengthening projects in at least 2 countries (in conjunction with FFA and AusAID). 6. Future of Fisheries video translated in 10 languages and distributed. 7. Contribute to development of Oceanscape initiative. 8. FAME annual report completed by March. 9. Other Divisional reporting requirements – to CRGA, donors and others – are met. 	<ol style="list-style-type: none"> 1. Successful meeting completed as planned 2. On track for achievement 3. Missions to PNG (by Director) and New Caledonia (by other staff) completed. RMI and Cook Is. Postponed to 2012 4. Visits to Fiji, Samoa, Tuvalu, PNG – mainly covering regional meetings 5. Consultation with NZ on Tuvalu IS project; donor workshop for Kiribati project now deferred to 2012. 6. Video distributed in French, English and Samoan – RMC proceeding with other language versions 7. Forum SG appointed as Oceans Commission; contributed to draft proposal for GEF project 8. Completed, printed and distributed 9. Reporting generally completed as planned – some delays with SciFish and DevFish 2 payments
<p>1.2 Effective working relationships maintained with other regional agencies and development partners</p>	<ol style="list-style-type: none"> 1. FFA/SPC technical meeting and colloquium successfully completed, with follow-up actions undertaken. 2. Joint activities with SPREP developed following discussions. 3. MSWG meets twice during the year and develops submissions to CROP Heads and/or Forum. 4. New AusAID food security project approved by end of year. 5. NZAid Observer project and subsidiary agreement with FFA both signed before end of April. 6. Division participation in workshops to develop work plan for GIZ climate change programme. 7. Effective contribution by FAME to efforts to secure NZ programme funding in 2011. 8. Case developed for more programmatic approach to EU funding under EDF11. 9. Fisheries issues continue to be addressed in Food Secure Pacific strategy implementation. 10. Appropriate funding mechanisms are developed/approved to continue key activities of CRISP project 11. New SPC document management and management information systems are successfully rolled out in FAME. 	<ol style="list-style-type: none"> 1. Successful meeting completed as planned 2. Collaboration with SPREP on Oceanscape as well as EBSA workshop. 3. 3 meetings held to date (2 attended by Director) with 2 submissions to CROP heads and Forum resolution 4. Project passed all approval processes by September and agreement was signed in November. 5. Project signed as planned and SPC implementation progressing well. 6. Director covered regional GIZ workshop and FAME staff participated in all national consultations. 7. Submissions prepared as required but funding was nevertheless cut by NZ\$3.5 million; submission to retain funding in 2012 was successful. 8. Director will arrange meetings in Brussels in early 2012. 9. FAME has continued to participate fully in the network. 10. Supported CRISP proposals; endorsement obtained from CRGA; feasibility study in May 2012. 11. Participated in planning discussions – FAME selected for roll-out of IRIS and Document Management System in 2012.

Results	2011 activities	Status at year end
<p>Objective 2: To promote informed policy decisions and public awareness of marine resource issues in the Pacific</p> <p>2.1 Policy-makers and the general public are better informed of marine resource issues, the importance of fisheries and the need for management action</p>	<ol style="list-style-type: none"> 1. New coastal resource management information materials for NGO workers developed and distributed. 2. At least one new SPC 'policy brief' on a key fisheries issue written and distributed. 3. Awareness materials or policy-related documents are designed and produced for at least three countries or territories. 4. All new FAME-produced documents are made available to the general public on SPC website 5. FAME and CFP websites are continually updated and improved. 6. Regional media are regularly informed of regional marine resource issues, and FAME activities and outputs, through the provision of press releases, radio interviews and articles for newspapers/magazines. 7. Part-time consultancy arrangement developed mid-year for more effective communication of fisheries issues. 	<ol style="list-style-type: none"> 1. Designed and laid out for printing – ready for distribution before end of 2011 2. Brief on FADs to be completed before November for launch at Tahiti FAD conference 3. Materials produced for Vanuatu, N. Marianas and Samoa. 4. Ongoing activity – web-pages significantly improved this year 5. Ditto 6. Several press releases in the early part of the year. 4 articles in Islands Business (2 from CRISP); at least 2 international radio interviews. 7. Communications consultant appointed in August and visited Noumea for briefings in September
<p>2.2 Stakeholders in PICTs are fully informed of the results of SPC activities, and shared experience and knowledge across the region</p>	<ol style="list-style-type: none"> 1. 3 issues of the SPC Fisheries Newsletter are published in English and French in colour. 2. 6 issues of SPC's Special Interest Group Information Bulletins, related to important marine resource issues, are published in French and English. 3. An updated version of SPC Fisheries Address Book, which gives access to more than 1700 regional fishery-related contacts, is produced and distributed. 4. An updated fully searchable digital library with all FAME publications available in digital format is produced on a DVD, which is distributed throughout the region, and on SPC's website. 5. Results of SPC activities are documented in various media, such as the SPC website and the SPC Fisheries Newsletter. 6. Major distribution effort is undertaken to circulate materials currently held in storage to member countries, including for vocational training. 7. Project initiated to develop materials to introduce fisheries into schools curriculum. 	<ol style="list-style-type: none"> 1. Newsletters 133, 134 and 135 produced as planned. 2. Bulletins in all six areas produced and distributed in English – some delays with French translations. 3. Address book compiled, printed and circulated. 4. Digital library updated; new DVD is only prepared in alternate years. 5. Website and newsletters carry full account of SPC activities. 6. Inventory of publications completed with big consignment sent to PNG. 7. Project deferred to early 2012.
<p>CFP objective 1: to assist governments and administrations in the development of scientifically informed and socially achievable coastal fisheries management policies and systems in line with guiding principles of the Apia Policy</p>		
<p>1.1 Assessment of the status of national coastal living marine resource user groups, impact on resource, existing impact management systems, and the current status of the resources themselves, in order to inform management</p>	<ol style="list-style-type: none"> 1. Training provided in appropriate methodologies and assistance in assessment of aquarium fisheries provided to 2 countries. 2. Training provided in coastal fisheries data analysis for 4 countries. 3. Regional data repository maintained and national data provided for backup from at least 3 countries/fisheries. 4. Monitoring and data needs identified, national workshops/trainings and assessments completed for finfish fisheries in 2 countries. 5. Invertebrate resource assessment and national workshops/training provided for at least 3 countries 6. At least 3 attachment trainings are undertaken in Noumea for data entry and analysis for developing management arrangements. 	<ol style="list-style-type: none"> 1. Fisheries Scientist (Aquarium Trade) commenced in late September; training provided to Nauru. 2. Training provided in data analysis for Tonga; training for 3 other countries deferred to early 2012, due to countries needing to collect data after initial training prior to the attachment. 3. Procurement of back-up servers in progress, data provided for back-up by Palau and Kiribati. 4. Monitoring needs for coastal fisheries identified; National training workshop likely to occur in 2012. 5. Invertebrate resources assessment training completed in Marshall Islands, Vanuatu and Solomon Islands; additional training under climate change project undertaken in Marshall Islands, Tuvalu and Kiribati. 6. One training attachment complete (Tonga); Vanuatu and Solomon Islands attachments for early 2012.

<p>7. Development of market survey database in progress and scheduled for completion in early 2012.</p> <p>8. Workshop completed, currently developing market survey forms/ methods.</p> <p>9. Slow progress; deferred completely to first half of 2012.</p> <p>10. Slow progress; deferred completely to first half of 2012.</p> <p>11. Database development completed and database trialled in Vanuatu and Solomon Islands; users have requested additional features to be added/ incorporated.</p> <p>12. Market and creel survey manual development in progress; completion of draft expected in early 2012.</p> <p>13. Ongoing; progress report provided to PNG on ornamental trade review; assisted Cook Islands and Kosrae draft trochus assessment reports based on data they had collected.</p> <p>14. All five climate change sites finalised.</p> <p>15. Completed training and baseline surveys in Marshall Islands, Tuvalu and Kiribati; temperature data loggers deployed at all 5 sites.</p> <p>16. Photo quadrat data completed, developing database for storing temperature data, resources assessment data stored in RFID.</p> <p>17. Basic CEAFM database developed for Samoa, needs further work so other countries can use database.</p>	<p>7. Develop database modules for market/creel surveys.</p> <p>8. At least 1 subregional workshop covering monitoring protocols, data collection and analysis.</p> <p>9. Underwater visual census methodology manual produced and disseminated to member countries.</p> <p>10. Invertebrate methodology manual produced and disseminated to member countries.</p> <p>11. Develop regional database module for export data and trial in 3 countries with national databases established.</p> <p>12. Develop draft survey manuals for market and/or creel surveys and supporting database, and test these in at least 2 countries to assess methodology.</p> <p>13. Progress reports available to countries within 1 month of providing technical assistance.</p> <p>14. Finalise remaining 4 sites for climate change monitoring.</p> <p>15. Conduct baseline surveys (fish, invert, habitat) for at least 3 project sites including the deployment of temperature loggers.</p> <p>16. Develop database for climate change work.</p> <p>17. Develop database for CEAFM work.</p>	<p>1.2 Assistance to members, in partnership with other stakeholders, in developing an appropriate mix of community-based approaches and national management arrangements, incorporation of ecosystem-based principles, and the review of coastal fisheries legislation.</p>
<p>Additional work undertaken</p> <ul style="list-style-type: none"> Developed sampling protocols for Kiribati EIA for proposed sand mining venture in the lagoon and provided training in these methodologies. Developed sampling protocols for Tuvalu for monitoring algal blooms and ciguatera and provided training in these methodologies. 	<p>1. Marine aquarium fisheries policy/management framework completed in at least 2 countries.</p> <p>2. Progress aquarium fishery management arrangements in 2 countries where drafts exist.</p> <p>3. At least 5 countries receive capacity building and provided with assistance in reviewing/developing CBFM plans or models incorporating EAF principles.</p> <p>4. Assistance provided to at least 4 countries with scientific advice that is used to develop species specific management plans or resources profiles.</p> <p>5. Assistance provided to at least 3 countries for the coastal component of legislation reviews/development.</p>	<p>1.2 Assistance to members, in partnership with other stakeholders, in developing an appropriate mix of community-based approaches and national management arrangements, incorporation of ecosystem-based principles, and the review of coastal fisheries legislation.</p>
<p>1. Provided management advice to Papua New Guinea; management workshop held for New Caledonia covering policy framework and fishing practices for sustainability.</p> <p>2. Ornamental fishery management plan and regulations drafted for the Marshall Islands.</p> <p>3. Capacity building in CBFM provided to Tonga, Samoa, Nauru, Kiribati and FSM.</p> <p>4. Assistance in developing management plans provided to Tonga, Marshall Islands, Kiribati, Solomon Islands for sea cucumber fisheries, and Cook Islands and FSM (Kosrae) for trochus fisheries. Facilitated workshop on sea cucumber fisheries management; 14 member countries participated.</p> <p>5. Assistance provided to Tuvalu (Fisheries Act), Marshall Islands (amend Fisheries Act; develop regulations for sea cucumbers, ornamental fishery and seafood safety), Vanuatu (review Fisheries Act), Solomon Islands (comments on revised Fisheries Act) and Cook Islands (develop regulation for trochus fishery and for enforcing or compliance of MPAs).</p>	<p>1.2 Assistance to members, in partnership with other stakeholders, in developing an appropriate mix of community-based approaches and national management arrangements, incorporation of ecosystem-based principles, and the review of coastal fisheries legislation.</p>	<p>1.2 Assistance to members, in partnership with other stakeholders, in developing an appropriate mix of community-based approaches and national management arrangements, incorporation of ecosystem-based principles, and the review of coastal fisheries legislation.</p>

Results	2011 activities	Status
	<p>6. National legislation ready for endorsement in 1 country (this is a multi-year process).</p> <p>7. Under coastal component of SciCoFish, assess monitoring, assessment and management needs in 5 Pacific ACP countries.</p> <p>8. Establish stronger collaborative working partnerships with NGOs working towards similar goals/objectives.</p>	<p>6. Draft Amendments to Fisheries Management Bill and Fisheries Regulations for Tuvalu, completed and handed to Tuvalu Crown Law Office, for preparation for Cabinet. Amendments to Marshall Islands Fisheries Legislation completed and submitted to Attorney General's office.</p> <p>7. Assessment of monitoring needs completed through workshop with six countries and NGOs.</p> <p>8. Good progress and ongoing.</p>
1.3 Practical assistance to members in the designing and targeting of appropriate awareness raising and educational information.	<p>1. Training provided to at least 2 countries to develop and disseminate fisheries information.</p> <p>2. Fisheries website development training provided for at least 1 country.</p> <p>3. Coastal fisheries posters revised/developed for at least 2 countries.</p> <p>4. Develop regional policy brief for trochus.</p>	<p>1. Training completed for trainees from Papua New Guinea and Samoa.</p> <p>2. No requests received for this activity to date.</p> <p>3. Revised and reprinted posters for Vanuatu; produced and distributed 16 information sheet and guide booklet got community-based coastal resource management.</p> <p>4. Developed regional management advice sheet for invertebrate species & SCUBA safety policy/checklist card.</p>
<p>CFP objective 2: to provide a regional framework for sustainable aquaculture, in the areas of planning, research, development and trade, for Pacific Island governments, private enterprises and other stakeholders</p>		
2.1 Improved regional and national capacity for strategic policy, planning and administration to establish clear priorities and enable the aquaculture sector to meet current and future needs, with the guidance of the SPC aquaculture action plan 2007.	<p>1. Aquaculture Planning Workshop in 2 countries.</p> <p>2. Participate in 2 JCS, programme missions.</p> <p>3. Aquaculture commodity development plans published for 2 countries.</p> <p>4. Independent consultant economist to review aquaculture/mariculture.</p> <p>5. PNG program mission food security.</p> <p>6. Assist and review PNG fish pond farmer census.</p> <p>7. Regional review of aquaculture statistics published.</p> <p>8. Aquaculture Portal updated with statistics and market notices, meeting's presentation, articles etc.</p> <p>9. Participate in Giant Prawn Conference in India.</p> <p>10. Participate in AQUARAMA conference 2011, Singapore.</p> <p>11. Organise SPC/ACIAR Regional Sea cucumber symposium for Pacific Is parties to attend.</p> <p>12. Participate in the Heads of Fisheries Meeting.</p> <p>13. Aquaculture Legislative support provided to at least 2 PICTs.</p> <p>14. Develop funding proposal for a regional project on sea cucumber aquaculture.</p> <p>15. Produce post-Tahiti Aquaculture Proceedings in both English and French.</p>	<p>1. Planning workshops completed in Fiji and the Cook Islands and draft reports provided.</p> <p>2. Feedback provided on PNG & Wallis and Futuna JCS.</p> <p>3. All consultations for Fiji and Cook Islands completed, with the plans to be published in early 2012.</p> <p>4. Country visits on economic assessment completed and outcome presented at October regional aquaculture workshop.</p> <p>5. PNG Training Needs Assessment on in-land aquaculture and mariculture conducted instead and report completed.</p> <p>6. Internal procedures need to be sorted before aquaculture production and value database is addressed. Activity is deferred to 2012.</p> <p>7. Discussions held with countries and FAO and noe developing a regional fisheries database for aquaculture statistics, to be completed in 2012.</p> <p>8. On-going activity.</p> <p>9. Completed, Fiji & Vanuatu participated with SPC In-land Aquaculture Officer.</p> <p>10. Completed, SPC Mariculture Officer attended.</p> <p>11. Completed, ACIAR/SPC Workshop report on outcome drafted for ACIAR approval.</p> <p>12. Completed.</p> <p>13. Legislative support provided to Fiji and the Cook Islands.</p> <p>14. A regional TCP concept was prepared and submitted to FAO, however, no funding is available.</p> <p>15. Report drafted and will be published in early 2012.</p>
2.2 Increased skills and knowledge base in the SPC region and its member countries and territories, so as to maximise the return on investments in aquaculture through innovative, profitable and sustainable approaches.	<p>1. Launch the final 6 mini-projects under phase II of the project.</p> <p>2. Programming mission to Cook Islands pearl industry and freshwater hatchery development.</p> <p>3. Proceedings of tilapia expert consultation published.</p>	<p>1. All 6 projects launched and completed.</p> <p>2. Completed freshwater hatchery development assessment together with Aquaculture Strategy consultation.</p> <p>3. Consultations completed and report drafted and will be published in early 2012.</p>

<p>2.3 Competent authorities established and/or supported, using science-based approaches to manage aquatic biosecurity risks and to facilitate trade.</p>	<p>4. Assist Samoa Fisheries with tilapia broodstock introduction and post-tsunami recovery. 5. Assist lobster and scallop culture trials, New Caledonia. 6. Planned assistance for lobster pueruli collection in FSM. 7. Support to all current mini-projects (12) including those being supervised by JCU and USP directly. 8. Support or supervision by section staff of ACIAR Mini-Project related MSc students and PhD. 9. Finalise EDF to trade diversification project and implement the aquaculture component. 10. Submit joint project (IFREMER – French Research Institute for Exploitation of the Sea) for aquaculture feeds from tuna fish meal in Fiji Islands and PNG. 11. Review status of freshwater fisheries and opportunities for culture based fisheries. 12. Support invertebrate (sea cucumber) restocking initiatives. 13. Implement satellite Farmer Group Project on freshwater aquaculture in Fiji under AusAID. 14. Assist RMI in developing a capture based aquaculture project involving rabbit fish and or mullet. 15. Assist Vanuatu with Freshwater hatchery and Bio-security facility setup.</p>	<p>4. Consultations held the need for an aquaculture development plan to be drafted in early 2012. 5. On-going. 6. Activity deferred to 2012. 7. All projects completed and reports produced and distributed. 8. On-going and two additional postgraduate students from Solomon Islands at USP have joined in for supervision by In-land Aquaculture Officer. 9. IACT Aquaculture Officer Position filled and the project has commenced. 10. Activity commenced and ongoing; scheduled for completion in late 2012. 11. Ongoing activity with a focus on PNG. 12. Support provided to Fiji under ACIAR Mini Project for sandfish on breeding, hatchery rearing and land-based nursery rearing. Initial discussions held with Kiribati to develop health guidelines on import of sandfish. 13. Activity cancelled due to main industry partner based in Fiji switched management and not interested in project, therefore funds had to be returned to the donor. 14. Activity may be deferred to 2012 due to current Mariculture Officer leaving (August) and replacement starting in October. 15. Activity deferred to 2012 as the hatchery and biosecurity facility was not completed in 2011. 16. Additional activity: assisting Nauru in developing floor plan for a new milkfish hatchery and distribution facility and sourcing fingerlings to initiate culture.</p>
<p>2.3 Competent authorities established and/or supported, using science-based approaches to manage aquatic biosecurity risks and to facilitate trade.</p>	<p>1. Provide desktop advise on introductions as needed. 2. Assistance to undertake a risk assessment for a possible introduction of the GIFT tilapia through a consultancy in the Solomon Islands. 3. Assist key PICTs on OIE reporting of live aquatics to EU. 4. Aquaculture portal is updated with trade statistics (official and provisional). 5. Prepare a concept note for a regional biosecurity framework. 6. Assist French Polynesia with Training on diagnosis and management of health problems in cage aquaculture.</p>	<p>1. This is an on-going activity. 2. A draft report has been provided by the consultant and the final report is expected to be published in early 2012. 3. Activity deferred to 2012 due to lack of funding to hold a workshop. 4. On-going activity. 5. Completed and presented at HOF7. 6. Activity deferred, with the training now scheduled for June 2012.</p>
<p>CFP objective 3: to develop sustainable nearshore fisheries in PICTs to provide food security, livelihoods and economic growth</p>		
<p>3.1 Subsistence, artisanal, sport and industrial fishing activities within the sustainable production level of the available fisheries resources.</p>	<p>1. Assistance to at least 5 fishing associations provided under the DevFish-2 project. 2. An HRD plan for the fisheries sector is produced/updated in at least 1 country 3. A Tuna Fisheries Development Plan is produced/updated in collaboration with FFA, in at least 1 country 4. Economic assessment of fisheries and/or aquaculture projects conducted in at least 5 PICTs</p>	<p>1. Assistance provided to PITIA as well as associations in Cook Islands, Tuvalu, Solomon Islands, and Papua New Guinea. 2. Done for Pitcairn as part of Fisheries Development Plan. 3. Fisheries Development Plan produced for Pitcairn Islands. 4. Economic assessments completed in Niue (FADs), Pitcairn (fish marketing in FP), Vanuatu (prawn farming), New Caledonia (fish silage), Wallis (longline vessel economics), Cooks/PNG (mariculture), regional vessel economics data collection framework developed.</p>

Results	2011 activities	Status
3.2 Resource materials, advice and training in appropriate fishing techniques and technologies.	<ol style="list-style-type: none"> 5. A feasibility study for sport-fishing development is conducted in at least 1 PICT. 6. A giant trevally tagging project is ongoing in New Caledonia and data is analysed. 7. A small-scale pole-and-line fishing project is started in collaboration with FFA, with technical and training inputs from the Nearshore Fisheries Development Section (NFDS) including an assessment of community-based bait fishing to supply fishing operations. 8. At least one exploratory fishing project conducted in New Caledonia, pending availability of funding. 9. International FAD conference organized with IFREMER and French Polynesia fisheries administration. 10. NFDS web portal is updated on an ongoing basis. 	<ol style="list-style-type: none"> 5. Niue study postponed to 2012. 6. Ongoing activity. 7. Bagan project started in November in Marshall Islands, full implementation scheduled for early 2012. 8. Spanner crab exploratory fishing conducted in New Caledonia. 9. Conference organized in November with participation from PICTs. 10. Ongoing.
3.3 Optimum benefits from the resource through improved seafood quality standards and value-adding.	<ol style="list-style-type: none"> 1. FAD projects are implemented with extensive capacity-building in at least 3 PICTs and advice/technical assistance is provided to a minimum of 5 other PICTs. 2. FAD fishing workshops are conducted with parallel training of counterparts in at least 2 PICTs. 3. NFDS remains active on the bycatch mitigation front with ongoing awareness-raising in PICTs and inputs to regional initiatives. 4. Small boat safety training is conducted with parallel counterpart training in at least 3 PICTs. 5. Collaboration on sea safety issues with FAO and other regional/international organisations is ongoing. 6. At least 1 regional fisheries course or workshop is organised and implemented. 7. Purse-seine crew training introduced in Kiribati pending funding assistance from NZAid. 8. Technical assistance and/or training in the area of small fishing/aquaculture business management is provided to at least 5 PICTs. 9. Vernacular version of the SPC small boat safety checklists is produced in at least 1 PICT. 10. One Sea Safety information bulletin is produced in both English and French. 11. Guidelines for the safe handling and release of coastal sport-fishing fish species is produced (third species group). 12. French version of manual on small-scale bait fishing methods is produced. 13. One DVD on best practices in coastal sport fishing is produced. 	<ol style="list-style-type: none"> 1. FAD projects implemented with capacity-building in Solomon Islands, FSM and Kiribati. 2. FAD fishing workshops conducted in Solomon Islands, Kiribati and Niue. 3. No particular work done in this area. 4. Small boat safety training conducted in Solomon Islands, Kiribati and Niue. 5. FAO/SPC collaboration on sea safety is ongoing. 6. Fisheries Officers course completed in October in Santo, Vanuatu. 7. Purse-seine crew training delivered in October/November in Kiribati, training DVD produced. 8. SPC Fisheries Officers course (Santo), aquaculture economics (Samoa), vessel economics data collection (Samoa), vessel economics (training package), aquaculture economics (training package), marine ornaments (exporters training manual). 9. No progress – awaiting translated captions from 1 PICT. 10. Issue#6 produced and distributed in English and in French. 11. “Good practices and Safety in spearfishing” cards developed; printing and distribution scheduled for early 2012. 12. Awaiting translation of manual. 13. No progress.
3.3 Optimum benefits from the resource through improved seafood quality standards and value-adding.	<ol style="list-style-type: none"> 1. Training in onboard catch handling is provided to local fishers in at least 2 PICTs. 2. At least one tuna grading workshop is organised and conducted (national, sub-regional or regional). 3. Technical assistance and/or training in the area of Competent Authorities and seafood safety standards is provided to at least 5 PICTs. 4. Technical assistance and/or advice on the utilisation of fish offal to produce fish silage is provided to at least 2 PICTs. 	<ol style="list-style-type: none"> 1. Training provided in Solomon Islands and Niue as part of FAD workshops; tuna handling workshop conducted in French Polynesia. 2. Tuna grading workshop conducted in French Polynesia. 3. Assistance and/or training provided to Competent Authorities in Solomon Islands, Fiji, PNG and Vanuatu. 4. Technical assistance provided to New Caledonia and French Polynesia.

OFF objective 1: to provide high-quality scientific information and advice for regional and national fisheries management authorities on the status of, and fishery impacts on, stocks targeted or otherwise impacted by regional oceanic fisheries.		
Results	2011 Activities	Status
<p>1.1 Regional oceanic fisheries management policy and decision-making by WCPFC are informed by the best science-based stock assessment and advice.</p>	<p>Regional stock assessments</p> <ol style="list-style-type: none"> 1. Conduct stock assessments for skipjack, yellowfin, bigeye and South Pacific albacore tuna and related management analyses. 2. Conduct a Preparatory Stock Assessment Workshop at SPC Headquarters. 3. Undertake an analysis to investigate the use of alternative reference points for the management of WCPO tuna fisheries. 4. Communicate information on tuna stock status and related issues in appropriate forms. 5. In conjunction with WCPFC, develop the 2011 service agreement and report on the implementation of services to WCPFC8. <p>Stock assessment research and development</p> <ol style="list-style-type: none"> 6. Release version 1 and a later updated version of TUMAS, the TUNA Management Simulator. 7. Conduct analyses of catch per unit effort (CPUE), size and tagging data in support of regional tuna stock assessment. 8. Conduct analyses to determine appropriate biological parameters for use in regional tuna stock assessments. 9. Continue development, testing and documentation on the MULTIFAN-CL stock assessment software, with updated software and documentation posted on www.multifan-cl.org. 10. Implementation of the shark research plan. 11. Develop preliminary indicators of stock status of key shark species. 12. Develop data sources and methods for assessment of silky shark. 13. Complete development of the shark tagging meta-database. 14. Communicate information on shark stock status and research. <p>FFA support</p> <ol style="list-style-type: none"> 1. Provide scientific support to the bioeconomic evaluation of management options. 2. Provide scientific support to the evaluation of potential management options. 3. Provide scientific support to US Tuna Treaty consultations and negotiations. 4. Communicate the information on management-related scientific work conducted for FFA. 	<ol style="list-style-type: none"> 1. Completed – http://www.wcpfc.int/meetings/2011/7th-regular-session-scientific-committee various SA WPs. 2. Completed – http://www.wcpfc.int/doc/sa-ip-02/report-spc-pre-assessment-workshop-noumea-april-2011. 3. Completed – http://www.wcpfc.int/node/3651. 4. Various presentations to FFC, PNA, TVM as well as NGOs such as WWF. 5. Service agreement developed, providing funding support of USD820,000 in 2011. 6. Version 1 released – www.tumas-project.org. Updated version to be released before end of 2011. 7. Completed – http://www.wcpfc.int/meetings/2011/7th-regular-session-scientific-committee various SA IPs. 8. Completed – http://www.wcpfc.int/meetings/2011/7th-regular-session-scientific-committee SA WPs 1, 5. 9. Completed – http://www.wcpfc.int/node/3667. 10. Completed – http://www.wcpfc.int/doc/eb-wp-01/indicator-based-analysis-key-shark-species-based-data-held-spc-ofp. 11. Continuing. 12. Completed – http://www.spc.int/oceanfish/en/ofpsection/sam/343-the-shark-tagging-information-system. 13. See http://www.spc.int/oceanfish/en/ofpsection/sam/sam/221-shark-short. 14. and Fisheries Newsletter article http://www.spc.int/coastfish/en/component/content/article/381-spc-fisheries-newsletter-133.html. <ol style="list-style-type: none"> 1. Routine inputs to be provided for October FFC. 2. Participated in planning workshop (Brisbane, April), Management Options Consultation (May, Honiara). 3. Attending annual consultations in Majuro, provided 2 papers on fishery overview and sampling programmes. 4. Communication of information through FFA meetings.
<p>1.2 FFA's oceanic fisheries management initiatives are supported by the best science-based stock assessments and advice.</p>	<p>FFA support</p> <ol style="list-style-type: none"> 1. Provide scientific support to the bioeconomic evaluation of management options. 2. Provide scientific support to the evaluation of potential management options. 3. Provide scientific support to US Tuna Treaty consultations and negotiations. 4. Communicate the information on management-related scientific work conducted for FFA. 	<ol style="list-style-type: none"> 1. Routine inputs to be provided for October FFC. 2. Participated in planning workshop (Brisbane, April), Management Options Consultation (May, Honiara). 3. Attending annual consultations in Majuro, provided 2 papers on fishery overview and sampling programmes. 4. Communication of information through FFA meetings.

Results	2011 Activities	Status
	<p>PNA support</p> <ol style="list-style-type: none"> 1. Provide scientific information and analyses in support of the development of the longline vessel days scheme 2. Provide scientific information and analyses in support of the implementation of the purse seine vessel days scheme 3. Provide scientific information and analyses to inform MSC assessment of purse seine fisheries 	<ol style="list-style-type: none"> 1. Formal inputs completed in 2010, but ongoing work in developing EEZ-based effort estimates using VMS data 2. Presentations provided to Annual PNA meeting held in Funafuti in April 2011 3. Detailed inputs to assessment documented in final assessment report http://www.msc.org/track-a-fishery/in-assessment/pacific/pna-western-and-central-pacific-skipjack-tuna/assessment-downloads. Specific submission provided in response to ISSF objection – http://www.msc.org/track-a-fishery/in-assessment/pacific/pna-western-and-central-pacific-skipjack-tuna/assessment-downloads
	<p>Support to the Sub-Committee on South Pacific Tuna and Billfish Fisheries</p> <ol style="list-style-type: none"> 1. Conduct research to improve understanding of the albacore fishery 2. Provide scientific information and analyses to support the development of a southern longline management system 3. Conduct characterizations of fisheries catching albacore, swordfish and striped marlin <p>Support for Te Vaka Moana</p> <ol style="list-style-type: none"> 4. Develop a work plan for future support of TVM initiatives 	<ol style="list-style-type: none"> 1.2.3. Work on these topics was presented to the Sub-Committee meeting held in Apia in May 2011 4. Support for TVM provided on request, including participation in meetings in April (Honiara) and September (Auckland)
<p>1.3 National tuna oceanic fisheries policy and decision-making are informed by the best science-based stock assessments and advice.</p>	<p>National Tuna Fisheries Status Reports</p> <ol style="list-style-type: none"> 1. Develop and maintain secure national web pages containing updatable National Tuna Fisheries Status Report (NTFSR) components. 2. Finalize NTFSRs for Marshall Islands, Kiribati, Samoa and Tokelau. 3. Complete NTFSRs in the new format for at least three of Cook Islands, Tuvalu, Solomon Islands, Fiji, CNMI and American Samoa. 4. Complete at least two Issue-Specific National Reports on issues of broad regional and sub-regional interest. 5. Communicate in appropriate forms the work conducted in support of national tuna fisheries management. <p>Support for development of National Tuna Management plans and associated instruments (with FFA)</p> <ol style="list-style-type: none"> 6. Provide technical support to national tuna management plan development in Cook Islands, Tuvalu, Solomon Islands, Fiji, CNMI, and American Samoa (if required) 7. Respond to <i>ad hoc</i> requests for scientific information and analyses in support of national tuna management 	<ol style="list-style-type: none"> 1. Completed – web pages accessible via secure login at http://www.spc.int/OPFMemberCountries/ 2. NTFSRs completed for Marshall Islands, Samoa, Tokelau and Kiribati. 3. Drafts completed for Cook Islands and Solomon Islands. 4. One ISNR completed on ENSO effects on national albacore longline fisheries. 5. Communication focused on direct stakeholders, wider dissemination scheduled from late 2011. 6. Provided advice on request and attended TMP stakeholder meetings in Fiji and Solomon Islands. 7. Responded to <i>ad hoc</i> requests for information by Cook Islands and Solomon Islands, with information also included in draft NTFSRs.
<p>1.4 Enhanced capacity of SPC members to interpret stock assessment information and advice.</p>	<p>Stock assessment training workshops (SAWs)</p> <ol style="list-style-type: none"> 1. Develop updated workshop materials that address current issues of importance. 2. Develop funding proposals to support participation in the SAWs. 3. Deliver two (preliminary, advanced) SAWs. Conduct <i>ad hoc</i> training in stock assessment where possible. 	<ol style="list-style-type: none"> 1. Materials updated. 2. Successful proposal to Japan Trust Fund. 3. Courses conducted in June-July 2011 with participation from 21 of the 22 SPC Island Members.

	<p>Attachments</p> <p>4. Complete attachments of fishery officers for at least three of Cook Islands, Tuvalu, Solomon Islands, Fiji, CNMI and American Samoa.</p> <p>Support of member participation at regional meetings</p> <p>5. Contribute to briefing material and talking points for WCPFC SC7 and WCPFC8 (led by FFA).</p>	<p>4. Attachments completed for Cook Islands, Solomon Islands.</p> <p>5. Attended (2 staff) pre-SC7 FFC Science Working Group to provide briefing on science issues.</p>
<p>OFP objective 2: to collect and analyse accurate and comprehensive scientific data for regional and national fisheries authorities on fisheries targeting the region's resources of tuna, billfish and other oceanic species.</p> <p>2.1 WCPFC is provided with efficient and cost-effective data management services to support regional oceanic fisheries.</p>	<p>Compile and manage WCPFC databases</p> <ol style="list-style-type: none"> 1. Compile, quality check and manage the WCPFC databases (Annual catch estimates, Aggregated catch and effort data, Operational (logsheet) data, Aggregate Size composition data). 2. Review Chinese data and liaise with China to address problems relating to catch attribution. 3. Incorporate shark species data into WCPFC databases. 4. Process, quality check and manage WCPFC Regional Observer Programme data. <p>Routine Papers for WCPFC meetings</p> <ol style="list-style-type: none"> 5. Scientific data provided to the Commission. 6. Annual catch estimates for the WCPFC Area. 7. Overview of WCPFC tuna fisheries. Including economic conditions. 8. Recent changes in scientific data provided for stock assessments. <p>Estimation of catches</p> <ol style="list-style-type: none"> 9. Update the estimation of selectivity bias based on paired spill and grab samples collected by observers on purse seiners, pending availability of new data. 10. Adjust purse-seine length data based on grab samples corrected for selectivity bias. 11. Estimate catches of key shark species based on observer data and of other non-target species based on observer data <p>Data dissemination</p> <ol style="list-style-type: none"> 12. Produce and publish on the commission's website the Tuna Fishery Yearbook, containing annual catch estimates by gear type, flag and species. 13. Maintain relevant web pages on the WCPFC website – BMIS, data provision tables, ROP data provisions 14. Disseminate data to members and others according to the WCPFC rules and procedures 15. Prepare and publish public domain data on the WCPFC website 	<p>OFP objective 2: to collect and analyse accurate and comprehensive scientific data for regional and national fisheries authorities on fisheries targeting the region's resources of tuna, billfish and other oceanic species.</p> <ol style="list-style-type: none"> 1. Ongoing task. Data status reported at http://www.wcpfc.int/wcpfc-data-catalogue and status of data provision at http://www.wcpfc.int/statprov. 2. Completed – http://www.wcpfc.int/node/3679. 3. Completed. 4. Ongoing task – progress reported in http://www.wcpfc.int/node/3682. <ol style="list-style-type: none"> 5. http://www.wcpfc.int/doc/st-wp-01/scientific-data-available-western-and-central-pacific-fisheries-commission. 6. http://www.wcpfc.int/doc/st-ip-01/estimates-annual-catches-wcpfc-statistical-area. 7. http://www.wcpfc.int/doc/gn-wp-01/overview-tuna-fisheries-western-and-central-pacific-ocean-including-economic-conditions. 8. http://www.wcpfc.int/doc/sa-ip-03/changes-data-available-stock-assessment. <ol style="list-style-type: none"> 9. http://www.wcpfc.int/doc/st-ip-02/purse-seine-length-frequencies-corrected-selectivity-bias-grab-samples-collected-observ. 10. Completed. 11. http://www.wcpfc.int/doc/eb-ip-02/estimation-catch-rates-key-shark-species-tuna-fisheries-western-and-central-pacific-oce. <ol style="list-style-type: none"> 12. 2010 edition to be posted to http://www.wcpfc.int/statistical-bulletins by December 2011. 13. Completed – see http://www.wcpfc.int/science-and-scientific-data-functions. 14. Completed on request. 15. Completed – see http://www.wcpfc.int/science-and-scientific-data-functions/public-domain-data.

Results	2011 Activities	Status
2.2 FFA's oceanic fisheries management initiatives are supported by the best science-based stock assessments and advice.	<p>Technical support to the WCPFC Secretariat</p> <ol style="list-style-type: none"> 16. Provide advice on data-related procedures of the commission, e.g. rules and procedures for the protection, access to and dissemination of non-public domain data and information compiled by the commission; and 'Scientific Data to be Provided to the Commission' 17. Prepare data summaries for the evaluation of conservation and management measures (CMMs). 18. Prepare catch data summaries to determine WCPFC member budget contributions. 19. Provide quarterly updates of tuna fishery database systems. 20. Provide training to Secretariat staff in CES and Observer Trip Viewer. <p>Technical support to the Western Pacific East Asia Oceanic Fisheries Management Project</p> <ol style="list-style-type: none"> 22. Install data management software and provide training in Philippines and Vietnam. 23. Review databases and conduct data collection and management system audits in Indonesia, Vietnam and Philippines. 24. Import WPEA data into WCPFC databases for use in 2011 stock assessments. <p>Provision and receipt of data and database systems</p> <ol style="list-style-type: none"> 1. Provide quarterly updates of the CES data system incorporating logsheet data, catch by EEZ and public domain data to the FFA Secretariat and PNA Office. 2. Improve estimates in the EEZ database, including monthly time stratification, stratification by set type for purse seine, inclusion of longline effort, improve estimates of raising factors using recent VMS data. 3. Provide CES training to FFA staff. 4. Provide CES training to PNA Office staff. 5. Receive and import US Treaty and FSM Arrangement observer data. 6. Process the PS-4 forms and import into observer database. 7. Receive, enter and import US Treaty and FSMA logsheet data. 8. Receive and import VMS data. 9. Receive and import FFA vessel register data. 10. Receive and import regional licensing data. 11. Review data exchange protocols for SPC/FFA Colloquium. <p>Provision of reports and data summaries</p> <ol style="list-style-type: none"> 12. Provide routine papers for US Treaty Annual Consultation. 13. Provide data summaries and reports for the PNA purse seine vessel days scheme. 14. Provide data summaries and reports for the PNA longline vessel days scheme. 15. Provide data summaries for FFA in advance of WCPFC sessions, as required. <p>Joint database initiatives</p> <ol style="list-style-type: none"> 16. Review status of FFA using the TUBS (Observer database system) 17. Review status of TOAD (observer administration database system) with FFA 18. Participate at Regional Licensing Officers Workshop to present TUFMAN MCS capabilities 	<ol style="list-style-type: none"> 16. Advice provided on request. 17. Inputs provided for WCPFC TCC meeting. 18. To be provided in November for WCPFC8. 19. Completed. 20. Completed. 22. Completed. 23. Completed in November 2011. 24. Completed. 1. Completed. 2. Improved purse seine EEZ database released, use of VMS data to improve EEZ-based effort estimates has commenced. 3. Completed in February 2011. 4. Yet to be undertaken. 5-10. Ongoing task. 11. Reviewed and discussed at February 2011 Colloquium. 12. Completed. 13. Summaries provided on request. 14. Completed. 15. Completed. 16. Ongoing. 17. Ongoing. 18. Completed.

<p>2.3 Enhanced national oceanic fishery monitoring and data management by SPC members to meet national and international obligations.</p>	<p>Data processing services</p> <ol style="list-style-type: none"> 1. Register, enter and verify logsheet, observer and port sampling data provided by SPC members. 2. Import data provided by SPC members in electronic form. 3. Conduct and evaluate a trial of observer-based data entry at sea (FSM). 4. Provide technical support for data scanning in SPC member countries. <p>Provision of database systems</p> <ol style="list-style-type: none"> 5. Install updated TUFMAN systems in fisheries offices – FSM, Samoa, Fiji, Solomon Islands. 6. Continue ongoing development of the TUFMAN system. <ol style="list-style-type: none"> a. Review and upgrade of reporting system. b. Implement entry of vessel sightings (GEN-1) forms. c. Entry of important fields from PS-2 and PS-3 forms. d. Incorporate VMS 'trip' data to allow logsheet coverage computation. e. Develop data registry system. f. Investigate and implement alternative GIS to MAPINFO. g. Consider a new FLEET database and how to cater for charter vessels. h. Develop a new MCS component. 7. Distribute and install TUFMAN remotely. 8. Distribute CES quarterly. 9. Distribute the Observer Trip Viewer System quarterly. 10. National installations of TUBS (observer database system) in FSM and Marshall Islands. 11. Continuing development of CES, TUBS and Observer Trip Viewer Systems. <ol style="list-style-type: none"> 12. Improve MCS capabilities to identify IUU fishing using database systems 13. Support of the TUFMAN Artisanal Fisheries Database (TUFART), as required and where possible 14. Develop, maintain and disseminate a detailed member country resources profile 15. Develop, maintain and disseminate an in-country hardware/software minimum standards document <p>Improving data quality and coverage</p> <ol style="list-style-type: none"> 16. Conduct in-country national data audits in FSM, Fiji, Marshall Islands and Cook Islands. 17. Conduct in-country review of the Samoa fisheries data collection system. 18. Conduct port sampling data quality screening at SPC using PORT Admin system. 19. Commence development of a data quality control module post-entry logsheet checking system at SPC. 20. Develop tools to check the coverage of logsheet data. 21. Develop workbooks, standards and general documentation for data quality control and auditing. 22. Identify data gaps and follow up with countries regarding submission of missing data. 	<ol style="list-style-type: none"> 1. Ongoing task. 2. Ongoing task. 3. Trip completed, data available for evaluation. 4. Scanners now provided in all required locations. <p>5. FSM, Fiji, Solomon Islands completed, Samoa scheduled for November.</p> <p>6. Progress as follows:</p> <ol style="list-style-type: none"> a. Work commenced, will continue into 2012. b. Deferred to 2012. c. Deferred to 2012. d. Completed. e. Deferred to 2012. f. Deferred to 2012. g. Alternative database structure implemented making the FLEET database unnecessary. h. Work commenced, will continue into 2012. <ol style="list-style-type: none"> 7. Remote updates provided to 14 countries. 8. Distributed in March, April and August. 9. Distributed in March, April and August. 10. Installation in Marshall Islands and FSM (for an at-sea data entry trial and for SPC Pohnpei-based data entry staff). 11. Progress as follows: <ul style="list-style-type: none"> • VMS data and purse seine 'spill sample' catch estimates incorporated into CES. • TUBS development continues, with new Observer Data manager now taking key role. • Observer Trip Viewer refined and tutorial produced. 12. Ongoing work, to continue in 2012. 13. No additional development required in 2011. 14. In progress. 15. In progress. 	<ol style="list-style-type: none"> 16. FSM was completed in March. Fiji is scheduled for mid-October. Marshall Islands and Cook Islands have been re-scheduled for 2012. 17. Undertaken in late 2011. 18. Ongoing task. 19. Postponed until the implementation of TUFMAN for in-house data processing at SPC. 20. Completed for TUFMAN and regional databases. 21. Under development, with a first version to be tested for the Fiji audit in October. 22. Countries have been advised of gaps identified. They now need to follow up with fishing companies.
--	--	---	--

Results	2011 Activities	Status
<p>2.4 Enhanced capacity of SPC members in fisheries monitoring, data management and data use.</p>	<p>Regional coordination of national fishery monitoring and data management systems</p> <p>23. Develop and update MOUs with members for the provision of technical support and funding of sampling programmes and related positions.</p> <p>24. Review national oceanic fishery monitoring in Samoa.</p> <p>25. Review national oceanic fishery monitoring following National Tuna Data Workshops as required.</p> <p>26. Finalise the report of the 8th Data Collection Committee (DCC) and hold DCC9 if required.</p> <p>27. Prepare and publish the 9th edition of the Fork Length newsletter.</p> <p>28. Provide data collection forms on request.</p> <p>29. Facilitate the provision of national tuna data to SPC for processing.</p> <p>Develop or enhance national observer programmes</p> <p>30. Coordinate the development of and technical support provided to PIRFO programmes by observer trainers, technical advisors and field technicians as required.</p> <p>31. Further develop and document (on the PIRFO website) the PIRFO Competency Based Training (CBT) and other regional standards in collaboration with FFA, WCPFC and members.</p> <p>32. Implement the paired grab-spill sampling trials on purse seiners, including the use of motion-compensated scales.</p> <p>33. Participate in the ISSF purse seine bycatch mitigation project</p> <p>34. Provide support for the PNG observer programme and development of data collection protocols.</p> <p>Develop or enhance national port sampling programmes.</p> <p>35. Review port sampling data quality.</p> <p>36. Restart port sampling of purse seine landing categories at Noro, Solomon Islands.</p> <p>Auditing of national tuna fishery monitoring</p> <p>37. Develop procedures for reviewing data collection systems as part of auditing of national tuna fishery monitoring.</p> <p>38. Participate in WCPFC audits of observer programmes as requested by the WCPFC Secretariat.</p> <p>Artisanal fishery monitoring</p> <p>39. Develop resource materials for artisanal tuna fishery monitoring.</p> <p>Support for National Tuna Data Coordinators</p> <p>1. Conduct national tuna data workshops in Fiji, Marshall Islands, Samoa and Tonga.</p> <p>2. Conduct a regional artisanal fisheries data workshop and/or national workshops.</p>	<p>23. Six new MOUs for technical support implemented and an additional seven are pending.</p> <p>24. Completed. A report "Samoa's New Tuna Data Collection System, Implementation Notes" provided to Samoa Fisheries.</p> <p>25. Completed for Marshall Islands and Tonga, Fiji and Samoa pending.</p> <p>26. DCC8 report and revised data collection forms available at http://www.spc.int/oceanfish/en/data-collection/241-data-collection-forms.</p> <p>27. In progress.</p> <p>28. Over 5,000 units of data collection forms and other monitoring support provided to most countries, as per Annex 3. Review of Pacific regional printers (cost and quality) completed, with new providers in Fiji and NZ identified. New regional standard forms available on SPC website.</p> <p>29. Ongoing task.</p> <p>30. NZ-funded "Pacific Economic Growth Observer Programme" projected launched in March to provide additional regional capacity for PIRFO support.</p> <p>31. http://www.spc.int/oceanfish/en/lofpsection/fisheries-monitoring/observers.</p> <p>32. Six paired sampling trips undertaken since Oct 2010, but five were unsuccessful due to lack of cooperation by vessel crew. More progress expected with recent recruitment of the Data Collection Officer, under the NZ-funded project.</p> <p>33. Represented at project meeting in August.</p> <p>34. Observer trip conducted by Data Collection Officer in August.</p> <p>35. Deferred to 2012.</p> <p>36. Visit to initiate sampling carried out.</p> <p>37. Under development.</p> <p>38. Information on data quality provided to WCPFC as required.</p> <p>39. Ready in early 2012.</p> <p>1. National Tuna Data Workshops held in Kiribati, Marshall Islands and Tonga. Fiji and Samoa held in late 2011.</p> <p>2. Deferred to 2012.</p>

<p>3. Hold the annual Tuna Data Workshop (17-22 April 2011).</p> <p>4. Assist countries prepare Part 1 National Reports for WCPFC SC.</p> <p>5. Train national tuna fishery data management staff in the use of TUFMAN and other database and sampling programme management software.</p> <p>6. Develop training resources for TUFMAN and TUFART. 7. Host training attachments in fisheries monitoring and statistics for fisheries officers from Kiribati, Samoa, Solomon Islands, FSM, Palau, Marshall Islands.</p> <p>8. Assist countries improve national capacity through funded data entry positions in FSM and Solomon Islands.</p> <p>9. Assist countries improve their fisheries IT infrastructure – provision of a new scanner and monitor in Marshall Islands, a server in Tonga and a server in FSM.</p> <p>10. Provision of <i>ad hoc</i> national support through provision of data summaries and advice during WCPFC meetings.</p> <p>Observer training</p> <p>11. Sub-Regional Observer Training Course for Cook Is, French Polynesia and Samoa in Apia.</p> <p>12. National observer upgrade training for cadets in FSM.</p> <p>13. Sub-Regional Observer Training Course for FSM & Palau in Pohnpei.</p> <p>14. Sub-Regional Observer Training Course for Fiji and Tonga in Suva.</p> <p>15. Assist with Sub-Regional Observer Training Course for PNG and Tuvalu in Kavieng and develop auditing procedures for observer training courses and institutions.</p> <p>16. National Observer Training Course for Solomon Islands in Honiara.</p> <p>17. Sub-Regional Observer Training Course for Niue, Tokelau, Tuvalu and Vanuatu in Port Vila.</p> <p>18. Assist with Sub-Regional Observer Training Course for PNG and Palau in Kavieng and develop auditing procedures for observer training courses and institutions.</p> <p>19. National Observer Training Course for Kiribati in Tarawa.</p> <p>20. National Observer Training Course for Marshall Islands in Majuro.</p> <p>21. Sub-Regional Observer Training Course for Fiji, Nauru, Tuvalu and Vanuatu in Port Vila.</p> <p>Other observer programme support</p> <p>22. Conduct an Observer Trainers Workshop and Observer Trainer Certification.</p> <p>23. Conduct an observer debriefing workshop.</p> <p>24. Provide debriefer training during in-country visits or in workshops.</p> <p>25. Hold the Regional Observer Coordinators Workshop.</p>	<p>3. Completed – http://www.spc.int/oceanfish/en/meetingsworkshops/tdw/337-tuna-data-workshop-4.</p> <p>4. 9 of 18 PICT participants in SC7 submitted Part 1 reports before the start of the meeting – disappointing outcome.</p> <p>5. TUFMAN training conducted at regional Tuna Data Workshop, and in-country in FSM, Fiji, Marshall Islands, Palau, Samoa, Solomon Islands, Tonga and Tuvalu.</p> <p>6. To commence late 2011 or early 2012.</p> <p>7. Attachments conducted for FSM, Tuvalu.</p> <p>8. Funding of FSM positions continues; offer to Solomon Islands not yet taken up.</p> <p>9. Scanners/servers provided.</p> <p>10. Support will be provided at WCPFC8 in December.</p> <p>11-14. Completed.</p> <p>15. Completed (with 5 Tuvalu observer trainees).</p> <p>16. Completed.</p> <p>17. Completed late 2011.</p> <p>18. Completed, although no participation from Palau.</p> <p>19. Completed.</p> <p>20. Conducted before the end of 2011.</p> <p>21. Planned for late 2011 or early 2012.</p> <p>22. Completed (Noumea, July).</p> <p>23. Completed (Noumea, February).</p> <p>24. Conducted opportunistically.</p> <p>25. Completed (Honiara, June).</p>
---	--

Results	2011 Activities	Status
<p>OFP objective 3: to improve understanding of pelagic ecosystems in the western and central Pacific Ocean.</p> <p>3.1 Enhanced data on the biological characteristics of oceanic species and their environment are available to support stock assessment and ecosystem-based fisheries management.</p>	<p>Tuna tagging</p> <ol style="list-style-type: none"> 1. Conduct tuna tagging campaigns in the western and central Pacific for the provision of data for stock assessment – in 2011, one three-month cruise in PNG, two 4-6 week cruises in the central Pacific, one South Pacific PSAT cruise in New Caledonia. 2. Complete preliminary analyses of horizontal and vertical movements. 3. Complete preliminary analyses of temporal changes in exploitation and FAD impacts. 4. Implement tag recovery programme, including new Tag Recovery Officers in 7 transhipment locations. 5. Implement 50 tag seeding experiments on purse seiners. 6. Conduct training of observers in tag recovery during regular observer training workshops. 7. Continue the validation of tag return data. <p>Tuna biological research</p> <ol style="list-style-type: none"> 8. Continue sample collection, conduct preliminary analyses of bigeye age, growth and reproductive biology. 9. Complete analyses of albacore age, growth and reproductive biology. <p>Trophic dynamics</p> <ol style="list-style-type: none"> 10. Stomach and muscle samples and fatmeter measurements collected during tagging cruises and observer trips. 11. Albacore sampling and fatmeter observations for New Caledonia completed. 12. Participate in two scientific cruises to collect information on mid-trophic ecosystem component. 13. Analyses of the impacts of FADs on trophic ecology submitted for publication. 14. Analyses of albacore diet submitted for publication. 15. Convene expert workshop to evaluate the suitability of applying trophic-based indicators for detecting pelagic ecosystem change. 	<ol style="list-style-type: none"> 1. Cruise PNG1 conducted April – July; Central Pacific cruises CP6 and CP7 carried out in October and November – December, respectively. PSAT cruise in New Caledonia cancelled, tags to be deployed during CP6. 2-3. Will continue to 2012. 4. TROs established in Pohnpei, Majuro, Honiara, Lae, Madang, Wewak and Manta (Ecuador). 5. 20 deployments confirmed for 2011 and a further 100 kits distributed to observers for deployment. 6. Training conducted in Apia, Kiribati, Pohnpei, Honiara and Fiji observer workshops. 7. Ongoing. 8. See http://www.wcpfc.int/node/3657. 9. See http://www.wcpfc.int/doc/sa-wp-05/south-pacific-albacore-age-and-reproductive-biology-%E2%80%93-progress-report. 10. Ongoing collection during tagging cruises 11-12. Completed. 13-14. Will continue to 2012. 15. Completed and outcomes published in Reviews in Fish Biology and Fisheries (Allain et al).
<p>3.2 Appropriate ecosystem models and analyses are available to inform ecosystem-based fisheries management.</p>	<ol style="list-style-type: none"> 1. Analysis of the effectiveness of MPA's as a management measure for tuna fisheries at the regional scale completed and published in the peer-reviewed literature. 2. SEAPODYM reference fits for yellowfin tuna and South Pacific albacore completed and submitted for publication. 3. One report on impact of environmental variability on tuna distribution at the regional level. 	<ol style="list-style-type: none"> 1. Report submitted to SC7. 2. Albacore model completed, yellowfin model requires more work with higher resolution fisheries data. 3. Paper on albacore submitted for publication.
<p>3.3 Improved knowledge of the impacts of climate change on oceanic ecosystems to inform adaptation.</p>	<ol style="list-style-type: none"> 1. Two manuscripts accepted on the impacts of climate change on (1) tuna distribution and (2) changes to the oceanic food web of the WCPO. 2. Begin experiments on the impacts of ocean acidification on tuna larval survival and growth. 3. 'Phase 1' modelling of climate change impacts on tuna stocks completed. 	<ol style="list-style-type: none"> 1. Completed. Lehodey et al, LeBorgne et al. Both published in Bell et al. (eds) <i>Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change</i>. 2. Experiments commencing in October 2011. 3. Completed 31 October.

<p>3.4 Regional oceanic fisheries policy and decision-making by WCPFC is informed by science-based information and advice on ecosystem issues.</p>	<p>4. Analysis examining the potential of predator diet and tuna movement to monitor climate change completed. 5. Conduct ECOPATH simulations to assess potential impacts of climate change on key bycatch species.</p>	<p>4. Completed and presented to the International Workshop on Climate and Ocean Fisheries, Cook Islands, October 2011. 5. Will continue to 2012.</p>
<p>3.5 FFA's ecosystem-based fisheries management initiatives are supported by the best scientific information and advice.</p>	<p>Ecological Risk Assessment (ERA) 1. ERA data incorporated into Bycatch Mitigation Information System (BMIS). 2. BMIS fully populated and accessible online.</p>	<p>1. See http://www.wcpfc.int/doc/eb-ip-03/bycatch-mitigation-information-system. 2. See http://www.wcpfc.int/bycatch-mitigation-information-system-bmis 1. No requests received in 2011.</p>
<p>3.6 Ecosystem-based management of oceanic fisheries by SPC members is supported by the best scientific information and advice.</p>	<p>1. ERAs undertaken as required for National Tuna Fishery Status Reports and online materials 2. An assessment of bycatch in the New Caledonian longline fishery completed. 3. Ecosystems workshop conducted in conjunction with annual Stock Assessment Workshop. 4. Sub-regional summaries of trophic structure completed and incorporated into NTFSRs and/or ISNRs. 5. Information on seamounts included in NTFSRs and online materials. 6. Five national-level 'tuna resource profiles' produced using SEAPODYM modelling results. 7. National-level tuna tagging information released online.</p>	<p>1. Completed and analyses available through web access. 2. Completed with report published in December 2011. 3. Completed. 4. Will continue to 2012. 5. Routine incorporation in NTFSRs and also online at http://www.spc.int/oceanfish/en/ofpsection/ema/environmental-research/seamounts. 6. 2 completed with remainder to be completed in 2012. 7. Completed – see http://www.spc.int/tagging/</p>

FAME publications

Coastal Fisheries Programme

Publication produced by or for FAME

- Anon. 2010a. Handling guidelines for sportfish. Species-Part one: Bonefish. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Anon. 2010b. Handling guidelines for sportfish. Species-Part two: Giant trevelly and other large fish. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Anon. 2011a. SPC Coastal and Oceanic Fisheries Programme's Digital Library. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Anon. 2011b. SPC Fisheries Address Book. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Anon. 2011c. Fisheries, Aquaculture and Marine Ecosystems (FAME) Division, annual report 2010. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Beverly, S. 2011. A beginner's guide to using remote sensing for offshore tuna fishing. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Kinch, J., A. Teitelbaum and H. Pippard. 2011. Proceedings of the regional workshop on trade in corals and determining non-detrimental findings, 17–20 May 2010, Honiara, Solomon Islands. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Kronen, M. 2010. Socio-economic dimensions of seaweed farming in Solomon Islands. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Patrois 2011 Shrimp farming in Pacific Island countries and territories: Status and trends in 2010 Secretariat of the Pacific Community, Noumea, New Caledonia.
- Sokimi, W. and S. Beverly. 2010. Small-scale fishing techniques using light. Secretariat of the Pacific Community, Noumea, New Caledonia.
- Tuara, P. and K. Passfield. 2011. Gender in oceanic and coastal fisheries science and management: based on case studies in Solomon Islands, Marshall Islands and Tonga. A report prepared for the SciCOFish project, Secretariat of the Pacific Community, Noumea, New Caledonia.
- Della Patrona L, Beliaeff B, Pickering T (2011). The effects of sediment addition in mitigating effects of predicted sea level rise on shrimp farming in New Caledonia. *Aquaculture Environment Interactions* Vol. 2: 27–38
- Bell JD, Adams TJH, Johnson JE, Hobday AJ and Gupta AS (2011) Chapter 1 The communities of the tropical Pacific, fisheries, aquaculture and climate change: An introduction. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 1–48.
- Pratchett MS, Munday PL, Graham NAJ, Kronen M and others (2011) Chapter 9 Vulnerability of coastal fisheries in the tropical Pacific to climate change. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 493–576.
- Pickering TD, Ponia B, Hair CA, Southgate PC and others (2011) Chapter 11 Vulnerability of aquaculture in the tropical Pacific to climate change. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 647–732.
- Bell JD, Reid C, Batty MJ, Allison EH and others (2011) Chapter 12 Economic and social implications of climate change for contributions by fisheries and aquaculture to the Pacific Community. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 733–802.
- Bell JD, Andrew NL, Batty MJ, Chapman LB and others (2011) Chapter 13 Adapting fisheries and aquaculture in the Pacific Community to the changing climate: Management measures, policies and investments. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 803–876.

Fisheries Bulletins and Newsletters

- SPC Beche-de-mer Information Bulletin #31, versions in English and French
- SPC Fisheries Newsletter #132 (May–August 2010), version in French.
- SPC Fisheries Newsletter #133 (September–December 2010), versions in English and French.
- SPC Fisheries Newsletter #134 (January–April 2011), version in English.
- SPC Live Reef Fish Information Bulletin #19, version in French.
- SPC Sea Safety Information Bulletin #6, version in English.
- SPC Traditional Marine Resource Management and Knowledge Information Bulletin #27, version in

French.

SPC Women in Fisheries Information Bulletin #21, version in French.

SPC Fisheries Newsletter #134 (January–April 2011), version in French.

SPC Fisheries Newsletter #135 (May–August 2011), version in English and French.

SPC Live Reef Fish Information Bulletin #20, version in English.

SPC Sea Safety Information Bulletin #6, version in English.

SPC Traditional Marine Resource Management and Knowledge Information Bulletin #28, version in English.

SPC Women in Fisheries Information Bulletin #22, version in English.

Posters, leaflets and plastic cards

Tuara, P. and K. Passfield. 2011. Gender in oceanic and coastal fisheries science and management: based on case studies in Solomon Islands, Marshall Islands and Tonga. A brochure prepared for the SciCOFish project, Secretariat of the Pacific Community, Noumea, New Caledonia.

Tuna fact sheets, version in French

16 Information sheets for coastal communities covering 8 finfish families and 8 invertebrate families or species.

Booklet: Guide to information sheets on fisheries management for communities

Publications produced in collaboration with or for member countries and territories

Anon. 2011. Commonwealth of the Northern Mariana Islands Aquaculture Development Plan 2011–2015. Secretariat of the Pacific Community, Noumea, New Caledonia.

Vanuatu 2009 Fisheries Regulations Booklet, versions in Bislama, English and French

Poster “Healthy resources vs overfishing”, version in Bislama.

Oceanic Fisheries Programme

Papers prepared for the WCPFC Scientific Committee

GN-WP-1 Williams, P. and P. Terawasi. Overview of tuna fisheries in the western and central Pacific Ocean, including economic conditions – 2010.

EB-WP-01 A5.2 S. Clarke, S. Harley and S. Hoyle. An indicator-based analysis of key shark species based on data held by SPC-OFP.

EB-WP-02 A5.2 Shelley Clarke, Kotaro Yokawa, Hiroaki Matsunaga, and Hideki Nakano. Analysis of North Pacific shark data from Japanese commercial

longline and research/training vessel records.

EB-WP-03 A5.2 W. Walsh and S. Clarke. Analyses of Catch Data for Oceanic Whitetip and Silky Sharks reported by Fishery Observers in the Hawaii-based Longline Fishery in 1995-2010.

EB-WP-04 A5.2 S. Clarke. A status snapshot of key shark species in the western and central pacific and potential mitigation options.

EB-WP-05 A5.2 S. Clarke. A Proposal for a Process for Designating WCPFC Key Shark Species for Data Provision and Assessment.

EB-WP-06 A5 P. Lehodey, I. Senina, B. Calmettes, John Hampton, Simon Nicol, Peter Williams, J. Jurado Molina, M. Ogura, H. Kiyofuji, and S. Okamoto. SEAPODYM working progress and applications to Pacific skipjack tuna population and fisheries.

EB-IP-01 A5 Shelley Clarke, Shelton Harley, Lea Protoy and Peter Williams. A progress report on the shark research plan.

EB-IP-02 A5.2 T. Lawson. Estimation of Catch Rates and Catches of Key Shark Species in Tuna Fisheries of the Western and Central Pacific Ocean Using Observer Data

EB-IP-03 A5 L. Fitzsimmons. Bycatch Mitigation Information System.

EB-IP-04 A5 Valerie Allain, Simon Nicol, Jeffrey Polovina, Marta Coll, Robert Olson, Shane Griffiths, Jeffrey Dambacher, Jock Young, Jesus Jurado Molina, Simon Hoyle, Tim Lawson, Johann Bell. Report of the international workshop on opportunities for ecosystem approaches to fisheries management in the Pacific Ocean tuna fisheries.

EB-IP-05 A5 J. Jurado-Molina, K. Bigelow, S. Hoyle, S. Nicol, K. Briand. Developing a spatially adjusted CPUE for the albacore fishery in the South Pacific.

EB-IP-06 A5 J. Jurado-Molina, P. Lehodey, I. Senina, S. Nicol. SEAPODYM perspectives as management tool for albacore (*Thunnus alalunga*) in the South Pacific Ocean.

EB-IP-07 A5 Melanie Abecassis, Patrick Lehodey, Inna Senina, Jeffrey Polovina, Beatriz Calmettes, Peter Williams. Application of the SEAPODYM model to swordfish in the Pacific Ocean.

MI-WP-01 A4.3 J. Hampton, P. Williams. Analysis of purse seine set type behavior in 2009 and 2010.

MI-WP-02 A4.3 SPC-OFP. Projections based on 2011 assessments (Excel file).

MI-WP-04 A4.2 S. J. Harley and N. Davies. Evaluation of stock status of bigeye, skipjack, and yellowfin tunas against potential limit reference points.

MI-IP-01 A4 S. Hoyle, F. Bouyé, and S. Harley. TUMAS: a tool to allow analysis of management options using WCPFC stock assessments.

ST-WP-01 A6.1 P. Williams. Scientific data available to the Western and Central Pacific Fisheries Commission.

ST-WP-02 A6.1 J. Hampton and P. Williams. Misreporting

- of purse seine catches of skipjack and yellowfin bigeye on logsheets.
- ST-WP-03 A6.1 T. Lawson and P. Sharples. Report on Project 60: Collection and Evaluation of Purse-Seine Species Composition Data.
- ST-IP-01 A6.1 P. Williams. Estimates of annual catches in the WCPFC Statistical Area.
- ST-IP-02 A6.1 T. Lawson. Purse-Seine length frequencies corrected for selectivity bias in grab samples collected by observers.
- ST-IP-03 A6.1 P. Williams. Issues with Chinese longline fleet data submitted by the WCPFC.
- ST-IP-04 A6.1 Peter Williams, Shelton Harley and Robert Campbell. South Pacific swordfish data available for stock assessments.
- ST-IP-05 A6.4 S. Nicol, B. Leroy, S. Caillot, J. Hampton, A. Lewis, A. Williams, T. Usu, B. Kumasi, L. Kumoru. Pacific Tuna Tagging Project progress report and workplan for 2011-2012.
- ST-IP-06 A6.2 P. Williams. Status of observer data management.
- SA-WP-01 A3.1 S. Nicol, S. Hoyle, J. Farley, B. Muller, S. Retalmaj, K. Sisor, A. Williams. Bigeye tuna age, growth and reproductive biology (Project 35).
- SA-WP-02 A3.1 Nick Davies Simon Hoyle, Shelton Harley, Adam Langley, Pierre Kleiber and John Hampton. Stock assessment of bigeye tuna in the western and central Pacific Ocean.
- SA-WP-03 A3.2 Adam Langley, Simon Hoyle, and John Hampton. Stock assessment of yellowfin tuna in the western and central Pacific Ocean.
- SA-WP-04 A3.4 Simon Hoyle, Pierre Kleiber, Nick Davies, Adam Langley and John Hampton. Stock assessment of skipjack tuna in the western and central Pacific Ocean.
- SA-WP-05 A3.5 Jessica Farley, Ashley Williams, Campbell Davies, Simon Nicol. Regional study of South Pacific albacore population biology: Year 3 – Biological sampling and analysis.
- SA-WP-06 A3.5 S. Hoyle. Stock assessment of albacore tuna in the south Pacific Ocean.
- SA-WP-07 A3 Adam Langley. A preliminary analysis of VMS data from the equatorial purse-seine fleet – the potential application of VMS data in the analysis of purse-seine catch and effort data.
- SA-WP-08 A3 Hoyle et al. Biological inputs and structural assumptions for future stock assessments: a discussion.
- SA-IP-01 A3 S. Hoyle and H. Okamoto. Analysis of Japanese longline operational catch and effort for bigeye and yellowfin tuna in the WCPO.
- SA-IP-02 A3 SPC-OFP. Report from the pre-assessment workshop in April 2011.
- SA-IP-03 A3 P. Williams. Changes to the data available for stock assessments.
- SA-IP-04 A3 Nick Davies, Dave Fournier, John Hampton, Pierre Kleiber, Simon Hoyle, Fabrice Bouyé, and Shelton Harley. Update of recent developments in MULTIFAN-CL software for stock assessment.
- SA-IP-05 A3.2 SPC-OFP. SPC-OFP response to the CIE review of the 2009 yellowfin tuna assessment.
- SA-IP-06 A3 S. Hoyle. Research outline for size data in WCPO length-based stock assessments.
- SA-IP-07 A3 S. Hoyle. Research outline for longline catch per unit effort data.
- SA-IP-08 A3 S. Harley. Preliminary examination of steepness in tunas based on stock assessment results.
- SA-IP-09 A3 S. Hoyle and A. Langley. Spatial size data stratification for length-based stock assessments.
- SA-IP-10 A3 S. Hoyle. Tag reporting rate prior distributions for the 2011 bigeye, yellowfin, and skipjack stock assessments.

Other OFP Publications

- Anonymous. 2011. Report of the Seventh Meeting of the Tuna Fishery Data Collection Committee, 16-19 November 2009, Noumea, New Caledonia. Oceanic Fisheries Programme, Secretariat of the Pacific Community, Noumea, New Caledonia and Forum Fisheries Agency, Honiara, Solomon Islands 149pp.
- Allain V, Nicol S, Polovina J, Coll M, Olson R, Griffiths S, Dambacher J, Young J, Jurado Molina J, Hoyle S, Lawson T 2011. International workshop on opportunities for ecosystem approaches to fisheries management in the Pacific Ocean tuna fisheries. Review in Fish Biology and Fisheries. DOI 10.1007/s11160-011-9220-z
- Le Borgne R, Allain V, Griffiths SP, Matear RJ and others (2011) Chapter 4 Vulnerability of open ocean food webs in the tropical Pacific to climate change. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 189–250.
- Lehodey P, Hampton J, Brill RW, Nicol S and others (2011) Chapter 8 Vulnerability of oceanic fisheries in the tropical Pacific to climate change. In: JD Bell, JE Johnson and AJ Hobday (eds) *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*. Secretariat of the Pacific Community, Noumea, New Caledonia, pp. 433–492.
- A J. Williams, S J. Nicol, N Bentley, P J. Starr, S J. Newman, M A. McCoy, J Kinch, P G. Williams, F Magron, G M. Pilling, I Bertram, M Batty (2011) International workshop on developing strategies for monitoring data-limited deepwater demersal line fisheries in the Pacific Ocean. Rev Fish Biol Fisheries DOI 10.1007/s11160-011-9234-6.
- A J. Williams, K Loeun, S J. Nicol, P Chavance, M Ducrocq, S J. Harley, G M. Pilling, V Allain, C Mellin, C J. A. Bradshaw (submitted). Population biology of deep-water Eteline lutjanids in New Caledonia: An application of spawner biomass-per-recruit models to assess vulnerability to fishing. Aquatic Living

Resources

CRISP Publications

SYNTHESIS

- Chenet A. (2011) CRISP consolidated report for the period mid-2009 until end-2010. SPC Nouméa 38 pp.
- Clua E. (2011) Synthesis of the CRISP final roundtables in New Caledonia, French Polynesia (March 2011), Fiji and Vanuatu (April 2011). SPC Noumea, 20 pp.
- Gabrié C. (2011). Six years for the conservation, management, and development of coral reefs in the Pacific, 150 pp.

MARINE CONSERVATION PLANNING AN ECOREGIONAL ANALYSIS

- Anderson P. (2011a). Findings for Fiji Extinction Resistance Project. Scientific report, SPREP/CI, 24 pp.
- Clua E., Gardes L., McKenna S., Vieux C. (eds), 2011. Contribution à l'inventaire biologique et à l'évaluation des ressources des récifs de Chesterfields : contribution to the biological inventory and resource assessment of the Chesterfield reefs. –Apia, Samoa : SPREP. 264 p.

INTEGRATED COASTAL MANAGEMENT

- Cohen P. (2011). Social networks to support learning for improved governance of coastal ecosystems in Solomon Islands. Study report, ARC/James Cook University, 37 pp.
- Govan, H. 2011. Building on what we have for a better life: Asking the right questions to improve livelihoods. Workbook. FSPI Reports, Suva, Fiji, 25 pp.
- Wilkinson, C., Brodie, J. (2011). Catchment Management and Coral Reef Conservation: a practical guide for coastal resource managers to reduce damage from catchment areas based on best practice case studies. Global Coral Reef Monitoring Network and Reef and Rainforest Research Centre Townsville, Australia, 120 P.

REEF RESOURCES MANAGEMENT

- Clua, E., Brena, P. and Lecasble, C. (In press). Prevalence and proposal for a cost-effective management of

the ciguatera risk in the Noumea fish market, New Caledonia (South Pacific). Toxicon.

- Ferraris J., Emmanuelli E., Gonson C. (2011). Guide pratique sur les indicateurs d'évaluation et de suivi des écosystèmes coralliens – Collecter, analyser et interpréter des données sur l'état de santé des récifs coralliens et des pêcheries récifales – Application aux îles du Pacifique Sud. IRD, 60 p.
- Kulbicki M., MouTham G., Vigliola L., Wantiez L., Manaldo E., Labrosse P., Letourneur Y. (2011). Major coral reef fish species of the South Pacific with basic information on their biology and ecology. Scientific report, 107 pp.

CAPTURE AND CULTURE OF POSTLARVAE

- Ellis, S. (2011). a collaborative project for the development of post-larval capture and culture (PCC) in pohnpei as a sustainable way of supplying the ornamental fish market. Project final report, 11 pp.
- Warren R., Baea P., Albert J. (2011). Solomon Island Aquarium Farming, Hard and Soft Coral Identification Guide, World Fish Center, 98 pp.
- World Fish Center, 2011. Strengthening sustainably cultured marine ornamentals in Solomon Islands. Summary of activities and achievements, final report, 8 pp.

ECONOMIC STUDIES

- Pascal, N. 2011. Valuation of the economic impacts of Community based Marine Managed Areas: 5 case studies in Vanuatu, South Pacific, Component 3A, Socio-economic and coral reef ecosystems, CRISP Research reports. 95 pp.

SHARK CONSERVATION

- Clua, E., Buray, N., Legendre, P., Mourier, J. and Planes, S. (2011) Business Partner or simple prey ? The economic value of Lemon shark in French Polynesia. Mar. Fresh. Res. 62 : 764-770.
- Clua, E. and Séret, B. New Caledonia as a potential wintering ground for the white shark (*Carcharodon carcharias*) (in press). In Global Perspectives on the Biology and Life History of the Great White Shark, ed. Michael L. Domeier, CRC Press, Boca Raton, FL.

Significant regional meetings/workshops

SPC/ACIAR Asia-Pacific Tropical Sea Cucumber Symposium (14–17 February 2011) held in Noumea, New Caledonia.

Seventh Heads of Fisheries Meeting held in Noumea (1st – 4th March 2011)

Steering Committee meetings for the SciFish, SciCOFish and DevFish 2 projects held in Noumea (28th February 2011) linked to the Heads of Fisheries meeting.

Fifth Tuna Data Workshop held in Noumea (18th – 22nd April 2011)

Basic monitoring needs for effective management of coastal fisheries and resources for Pacific Island countries and territories workshop (26–29 April 2011) held in Nadi, Fiji.

Oceanic Fisheries Stock Assessment Workshops held in Noumea (20th June – 5th July)

Deepwater Snapper Stock Assessment Planning Workshop held in Noumea (6/7th July)

Training workshops on database fundamentals for coastal fisheries (19–23 September for 7 countries) and (03–07 October for 8 countries), held in Noumea, New Caledonia.

Regional Fisheries Officers Course held in Santo, Vanuatu (3rd – 28th October 2011).

SPC/FAO Joint Pacific Islands Aquaculture Scoping Workshop held in Nadi (11th – 14th October)

SPC also contributed to 'Tahiti FADS 2011' – a global conference organised by IFREMER, IRD, the French Polynesia Fisheries Service and SPC (28 November – 02 December 2011) held in Papeete.

HoF7 meeting outcomes

The seventh SPC Heads of Fisheries (HoF) Meeting took place at SPC Headquarters in Noumea, from 1st to 4th March 2011.

HoF was chaired on behalf of Papua New Guinea by Mr Leban Gisawa.

HoF is a regional meeting of the heads of SPC member country and territory fisheries departments, or their deputies, covering the entire range of interests for which they have responsibility and on which the SPC Division of Fisheries, Aquaculture and Marine Ecosystems (FAME) provides advice and assistance. As such, the HoF meeting plays a unique role in providing strategic guidance to both the Coastal Fisheries Programme (CFP) and the Oceanic Fisheries Programme (OFP) of FAME.

The following outcomes constitute the main points of consensus agreement among delegates that the meeting felt necessary to document, either to guide the management of the FAME work programme, to draw to the attention of other regional agencies and development partners, or to signal agreement on issues that require attention by members themselves, and to inform SPC CRGA.

SPC Heads of Fisheries:

SPC FAME Division Overview & 2010 Report

- responded favourably to the overview of recent CFP and OFP activities and the proposed work plans for 2011, noted the completion of the Future of Fisheries study, welcomed major new projects like SciCOFish, Devfish-2, and planned research on the impact of Climate Change on coastal and offshore fisheries, and noted the positive response and changes implemented by the FAME Division in response to the recommendations made in the 2010 review of the Division.

SPC FAME Sustainable Funding Mechanisms

- fully supported a classification of FAME services into 'ongoing' and 'fixed term', and endorsed the selection of 'ongoing' services as those requiring recurrent or sustainable funding;
- noted the need for significant increases in recurrent funding, both immediate and particularly in 2014/15 and recommended that more sustainable programme funding is a top priority;
- endorsed an approach by FAME management to the European Union to explore options for sustained financing of regional fisheries programmes under the next round of EU funding (EDF11), as part of the broader SPC initiative; and
- noted that project funding often limits the availability of FAME services to some SPC members

Coastal fisheries

- requested that deep-sea snapper fisheries receive a level of attention more in keeping with their economic significance and supported this becoming the subject of joint work by CFP and OFP. They endorsed efforts by SPC to seek funding to build capacity in snapper fishery management;
- recognized the work of CFP to assist with development of successful pilot projects in sport fishing as a sustainable new high-value use of coastal fishery resources with good potential in PICTs, and of new products like fish silage to utilize fish-waste from processing plants, noting the scope for transfer and replication of these projects in other PICTs;
- strongly supported the substantial amount of work being done by SPC in training on nearshore FAD deployment and FAD fishing technologies, recognizing that nearshore artisanal fisheries make a vital contribution to food security and livelihoods which FADs can further enhance by making these fisheries more accessible, reducing fuel costs, increasing sea safety, and diverting near-shore fishing effort away from reef fisheries resources;
- supported the continuing work of SPC to prepare and disseminate training and awareness-raising materials in support of sea safety for small boat operators, and called for an assessment within PICT contexts of recent advances in sea safety technologies such as tracking devices;

- called for economic analyses of various nearshore fisheries and mariculture activities like baitfish production, and noted with appreciation the recent appointment within CFP of an officer with expertise in conducting economic feasibility studies and business management training for fisheries and aquaculture;
- called for more attention to training in fish-handling to meet quality standards and in post-harvest processing for value-adding in fisheries and aquaculture, and noted with appreciation the imminent appointment of an officer for post-harvest development and exports;
- noted with appreciation the assistance of SPC, jointly with FFA, toward national reviews of fisheries legislation among PICTs given that such reviews are a major exercise, and requested that in future alternative approaches be tried (where appropriate) to partition such reviews step-wise into priority sub-sectors like statutory and legislative support for Community-Based Fisheries Management; and
- noted the departure from SPC of Mr Steve Beverley and expressed appreciation for his many years of service to PICTs in the area of fisheries development.

Aquaculture

- reaffirmed that the decision on whether or not to introduce exotic species or new strains of previously introduced species for aquaculture is a national responsibility;
- noted the importance of considering carefully the potential benefits and risks of any such introduction, including an appropriate risk assessment;
- agreed that, for the time being and until more scientific knowledge is available, further introduction and spread of tilapia to countries and catchments where it is not yet established should be discouraged, and that a priority be placed firstly upon research to determine whether Nile tilapia introduced for aquaculture to areas where Mozambique tilapia is long-established will cause any significant new effects on biodiversity;
- agreed that there be review of the potential for the use of indigenous, rather than introduced, species for aquaculture, but affirmed that a complete prohibition on any new introductions is not consistent with international practices of food production;
- strongly supported the proposal to develop a regional framework for management of aquatic animal health and bio-security in support of sustainable aquaculture development; and
- noted that fish feed is a key constraint to aquaculture development in PICTs and supported further work in this area.

Oceanic fisheries

- supported the work planned by OFP in conjunction with members on several emerging issues such as port sampling for artisanal tuna fisheries, tuna ecosystem modelling information requirements, and tuna tagging to support research on impacts of climate change on tuna distributions;
- supported the concept of Issue Specific National Reports (ISNRs) for providing advice to countries on issues of national interest and concern, agreed on the proposed approach for prioritising topics for ISNRs, and suggested that SPC consider including coastal fisheries issues within the ISNR framework;
- expressed concerns over the status of tuna stocks in the region, and the need for management action at the regional, sub-regional (PNA) and national level that augments WCPFC measures, and noted specific concerns about the potential for localised depletion of albacore;
- recognised the value of TUMAS for assisting with decision-making on tuna fisheries management and development, and supported the continued development of the TUMAS software;
- noted the value of the new National websites for assisting countries to produce reports for the Scientific Committee meeting of the WCPFC;
- recognised with appreciation the support provided by OFP in national-level fishery monitoring and data management, including artisanal fisheries, and endorsed the continued support and training in this area, including the introduction of new databases (e.g. TUFART) as they become available;
- supported the continued work from OFP on spill sampling to provide better estimates of species composition and size distribution of purse seine catches;
- acknowledged the importance of the OFP Stock Assessment Workshops for national fisheries staff to gain an understanding of the data and analyses underpinning stock assessments and to actively and effectively engage in WCPFC meetings;

- recognised the additional workload involved in completing 4 stock assessments scheduled for 2011, but noted that extra resources are to be provided by WCPFC so that the additional work will not adversely impact other areas of the OFP work programme;
- recognised the importance of observer training workshops in providing the required number of observers to meet WCPFC requirements, and noted the substantially large volume of observer data that has been generated by the increased observer coverage which is causing problems for data management, and the urgent need for additional resources to address this issue;
- noted the need for PICTs to provide additional support where possible for ancillary observer training courses (e.g. first aid), stressing the value of using national maritime institutes, to allow existing funds to be dedicated to training more observers, debriefers and observer trainers;
- noted the increased level of resources that are now available online but noted that local internet bandwidth needs to be assessed to determine its adequacy; and
- noted the departure from SPC of Dr Don Bromhead and expressed appreciation for his many years of national-level support to PICTs.

Maritime boundaries

- noted that maritime boundary development is a country-led, multi-disciplinary (technical, legal, and diplomatic) and multi-stakeholder process of lasting sovereign importance that is critical and increasingly urgent not only for fisheries but for all marine resources governance, and encouraged SPC to be proactive in providing advice to PICTs on ways to accelerate national level processes for maritime boundaries delimitation; and
- encouraged the support of fisheries managers and their respective governments for the processes to delimit maritime boundaries being run by SPC SOPAC Division and its collaborating partners and other national and international initiatives to the same effect.

Spawning aggregations

- recognized the general need for management of spawning aggregations of high-value reef fish through a range of measures that include mapping and seasonality of exploited aggregations, closed-area or closed-season protection, and monitoring of spawning aggregations as indicators of high-value reef fisheries status and effectiveness of management measures.

CEAFM Workshop outcomes

- endorsed the approach to promote and facilitate interagency cooperation and collaboration at national and regional level to further develop legal frameworks in support of CEAFM, accelerate the introduction of suitable adaptive management approaches, and seek appropriate levels of resourcing at national level for CEAFM implementation; and
- noted that the CEAFM approach will strengthen existing community-based management programs and facilitate improved engagement between Fisheries and Environmental Departments and NGOs, and articulated the need to engage with resource developers in other sectors when developing approaches to implementing CEAFM.

Fisheries training

- agreed that the joint University of Wollongong- SPC initiative for a Masters course in Oceanic Fisheries Management is suited to supply Pacific Island Fisheries agencies with upskilled staff and, noting both the difficulty for continued availability of fisheries staff for all course activities throughout the degree and the limited number of scholarship opportunities available for the fisheries sector among PICTs, called for scholarship opportunities to be explored and if possible expanded, and for such courses to be offered in-country via Distance Learning mode as far as is practicable;
- noted the continued commitment of the Nelson Marlborough Institute of Technology to regional fisheries training in collaboration with SPC, and their expanded range of facilities and training opportunities that include mariculture hatchery, sea safety, fish capture, post-harvest processing, fisheries observer, marine engineering and navigation; and
- noted the consultation document tabled by the New Zealand Aid Programme announcing a Pacific Fisheries Training Programme proposed for the various countries that New Zealand engages with in the Pacific, about which feedback and comments are sought on its relevance to the Pacific.

Climate Change

- noted the update provided for the fisheries and aquaculture vulnerability assessment project through a series of presentations from lead authors summarising the key findings to date;
- considered the companion Summary for Policy Makers and in Discussion Groups reviewed an example PICT summary. The example was tailored to a single country (Solomon Islands) and groups were asked to provide feedback on the approach, the structure and the information presented for fisheries managers;
- supported the general structure of the example PICT summary and the level of information provided. Groups provided useful comments on improving specific content that was collated and will be used to improve the drafting of the Summary for Policy Makers;
- supported the efforts of the CFP in implementing the Monitoring the Vulnerability and Adaptation of Coastal Fisheries to Climate Change project, including the focus on capacity building; and
- noted the progress made in assessing the possible impacts of climate change on tuna stocks and fisheries, and supported the initiatives to further enhance tuna and climate change modelling, including the collection of specific data on tuna tagging and tuna diet.

Presentations by other organisations

- thanked FFA and WCPFC for the continued close links and positive working relationship with the OFP at SPC, and noted the availability for short-term attachments of PICT staff to projects at WCPFC, and the possibility of attachment at Deputy Executive Director level for a period of up to one year; and
- noted the proposed increased engagement by FAO in Pacific coastal fisheries and aquaculture stemming from PICT participation at FAO international fisheries meetings in 2010 and 2011, , requested FAO to increase dialogue with eligible countries to develop priority areas of activity for possible FAO support in the Pacific, and supported the proposal for SPC and FAO to jointly to develop a regional strategy along with other national, regional and international stakeholders to achieve better communication, prioritisation, coordination and avoidance of duplication for development assistance in aquaculture to PICTs.