



Coastal Fisheries Programme

Secretariat of the Pacific Community

Summary Triennium Report

2003–2005

Summary Triennium Report 2003–2005

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Part I: Programme overview and highlights

This paper reports on progress against the defined outputs of the Coastal Fisheries Programme's (CFP) Strategic Plan 2003 – 2005. The outcomes and directions presented in this review will also form the basis for developing a new CFP Strategic Plan for the period 2006 to 2009, in conjunction with discussions and input from stakeholders.

The aims of the CFP fall within an area that is defined not only by the expressed priorities and needs of member governments and administrations, but also by the functionality of other CROP agencies and SPC programmes working on ocean issues e.g. the Forum Fisheries Agency; the SPC Oceanic Fisheries Programme; the SPC Regional Maritime Programme; the South Pacific Applied Geosciences Commission; the University of the South Pacific; and the Pacific Regional Environment Programme. All of these are part of the CROP Marine Sector Working Group (MSWG), with NGO observers participating as appropriate. The CFP works in its identified areas and in collaboration with other agencies where there are overlapping responsibilities.

At the start of the plan period, the overall goal of the SPC Coastal Fisheries Programme, in contributing to the achievement of the regionally-shared vision of “A healthy ocean that sustains the livelihoods and aspirations of Pacific Island communities” expressed by the Pacific Islands Regional Ocean Policy, was that “The long-term social and economic value of small-scale fisheries and aquatic living resource use in Pacific Island waters is optimised.” An independent review during through the plan period, however, recommended modifying this to clearly reflect the fact that the programme works with governments and administrations, and the goal of the overall programme was amended as follows:

“SPC member fisheries services, working with environmental and other appropriate stakeholders, have a clear vision for the sustainable management and development of coastal living marine resources, and develop and implement strategies and mechanisms to achieve this vision”

The CFP is made up of six sections working jointly towards this shared goal and addressing the six main objectives of the CFP Strategic Plan: Aquaculture, Fisheries Development, Coastal Fisheries Management, Training, Reef Fishery Assessment, and Information.

Significant, and extremely satisfactory, progress has been made towards the goal of the Coastal Fisheries Programme during the plan period. A regional aquaculture advisory service has been established and is operating at a strategic level with member governments and administrations to establish mechanisms and systems that promote long-term sustainability; the largest ever reef fisheries assessment (using fishery-independent methodologies) is being carried out in 17 SPC countries and territories including the first major sex-disaggregated socio-economic assessment of these fisheries; the number of Pacific Island coastally-based small-scale tuna fishing vessels is now 25% of the total

Part I: Programme overview and highlights

Pacific longline fleet¹; the cost/benefit ratio of coastal fixed Fish Aggregation Devices has been validated and an even lower-cost design produced; a set of coastal fisheries management strategies has been regionally agreed and is being implemented by several governments and administrations (aimed particularly at improving community and stakeholder participation in fisheries management decision-making), and a large number of practical information products have been produced and a large number of people given vocational training. A programme staff member has even won an international environmental award for the development of a bycatch-avoiding fishing gear modification.

Building upon this base, many things need to be achieved during the next plan period (2006-9), and it is intended that the different activities of the programme be framed under the overall goal of assisting Pacific Islands to achieve a commitment made by SPC member countries at the World Summit on Sustainable Development of “*Implementing the ecosystem approach to fisheries by 2010*”. Coastal fisheries in the Pacific Islands are still largely subsistence and small-scale artisanal fisheries, and certain elements of the Ecosystem Approach to Fisheries (EAF) will be need to be given more emphasis in the Pacific Community region than fisheries in other regions of the world, particularly to take account of Pacific Island marine tenure systems and the relatively significant impact of land-based processes on small-island coastal fisheries ecosystems.

Institutionally, the CFP has significantly more Pacific Island staff than at start of the triennium; in fact the majority of the professional staff of the Programme are now Pacific Islanders (12 out of a complement of 23 compared to 6 at the start of the programme triennium). The number of women in the programme has not increased significantly over the period, but it is only a matter of time before this changes because the majority of new marine studies graduates entering the system are female.

¹ And because it markets mainly fresh airfreighted fish, the share of the value is probably higher than 25%

Part II: The sector

Part II: The sector

The sector that makes up coastal fisheries is diverse in most countries and territories in the region. It can be roughly split into three broad categories; aquaculture, nearshore pelagic fisheries and reef fisheries.

Aquaculture

For the novice a basic definition may help clarify the scope of the sector. Aquaculture is simply any kind of farming that takes place in fresh or marine water (mariculture refers specifically to farming in seawater). Traditionally aquaculture has been placed in the domain of fisheries although technically it is an extension of agriculture. Aquaculture in the Pacific is best categorised into two forms – commercial and semi-subsistence.

Commercial

Intensive commercial aquaculture is relatively new to the Pacific region and its development phase typically takes several decades of research and development. Over recent years, an average value of export is estimated to be somewhere in the range of USD \$130–180 million dollars per annum. Two commodities account for about 90 per cent of the total value; cultured black pearls and marine prawns. Other aquaculture products in the region include *Kappahycus* seaweed, corals, clams and fish.

Cultured Pearls: Cultured black pearls are the product of the black-lip pearl oyster, and in the late 1990s had become the most valuable export of French Polynesia (USD \$164 million) and the Cook Islands (USD \$9 million). Subsequently, industry growth in both countries endured a slump. In French Polynesia this was due to an oversupply of poor-quality pearls, and in the Cook Islands it was from a pearl disease in 2000 (accumulative loss may be as high as NZD \$100 million dollars (USD \$70 million)). Pearl farms have been established elsewhere, including Fiji Islands where the value of the industry is estimated at FJD \$4.8 million (USD \$2.88 million), the Marshall Islands, Federated States of Micronesia, Solomon Islands, Kiribati, Papua New Guinea and Tonga.

Marine prawn: New Caledonia is the largest producer of marine prawns (*Penaeid* spp) in the region, worth USD \$22 million dollars in 2004. The Fiji Islands is also actively developing a prawn industry. The demand from the domestic market, estimated at 600 tonnes per annum, is being met mostly by imported products. A prawn farm of national significance is near completion on Vanuatu.

Kappahycus Seaweed: *Kappahycus* seaweed (trade name *cottoni*) produces carrageenan, used primarily for the food industry. For the past decade Kiribati has been the main source of seaweed in the Pacific, ranging between 1000 and 1500 tonnes of dried product annually. For the past five years, Fanning atoll in the Line Group has been almost the sole producer of seaweed. In Fiji, recent production of seaweed is small compared to the 500 tonne high of the late 1980s, with farming now being concentrated in the Lau Group. Seaweed farming in the Solomon Islands has increased from 4 tonnes in 2002 to 240 tonnes in 2004, with expansion planned for Wagina village, North Malaita, Reef Islands and the low lying atoll of Ontong Java.

Fish farming: In Fiji the GIFT tilapia is becoming a popular species for farming. Several project sites have demonstrated the feasibility of farming this fish for village consumption and modest commercial gains. In Papua New Guinea the number of inland and highland fish farming ponds has been increasing, and in 2003 the number of active fish farmers was estimated at 11,000. Initially farming was based on the common carp, but interest is now being focussed on GIFT tilapia. Cool water rainbow trout are being farmed in the mountainous highlands.

Part II: The sector

Others: The Pacific is an important supplier on the world market of corals, sponges, fish and even 'live rock' for aquariums tanks, but most of the trade involves catches from the wild. About seventy five percent of the export is from Fiji where the industry is worth some USD \$19 million. Coral cultivation for the ornamental market occurs in Fiji, Vanuatu and Marshall Islands, with the largest commercial farm, in Fiji, produces 25,000 pieces from 40 different species. In 2003 it was estimated the annual trade in live rock was 700 tonnes, almost entirely wild harvested with just 50,000 pieces currently under cultivation. Giant clam cultivation for the marine ornamental market is important in the region, with commercial hatcheries in Fiji, Palau, Marshall Islands, Tonga, Vanuatu, Cook Islands, Kiribati, Samoa and American Samoa. In 2002, Tonga alone sold around 18,000 clams to the aquarium market. It is estimated that the region exports up to 50,000 giant clam pieces per annum.

Several species of seawater, brackish and freshwater fishes are farmed for commercial purposes, with a barramundi farm in Papua New Guinea. In French Polynesia the few commercial barramundi farms have turned their interest towards the local fish species *moi* (*Polydactylus sexfilis*). In Kiribati a semi-commercial government farm produces milkfish as baitfish for tuna fishing operations. In Tonga about 250-350 tonnes of mozuku seaweed is harvested per year of which between 50 and 100 tonnes is cultivated. The freshwater crayfish (red claw) is farmed in New Caledonia with 6 tonnes produced in 2001 and production is increasing. Some small scale farming of mud crab occurs around the region.

One species of growing interest in the region is the Pacific shrimp (*Macrobrachium lar*). This species is indigenous throughout the Pacific region. *M. lar* can easily be collected as fry from the wild, attains a large size and is reputed to survive under high stocking densities. Pilot trials for farming *M. lar* are currently being undertaken in Vanuatu and Wallis and Futuna.

Restocking: Aquaculture may assist in replenishing over fished stocks. Currently the sea cucumber fisheries are under pandemic threat. Pioneering research is nearing completion in New Caledonia by the WorldFish Center on methods to breed and restock juveniles into the wild. Restocking of inland reservoirs and dams with freshwater species has been carried out sporadically in the past but little information is known about the results. The control of weeds in Rewa river of Fiji is attributed to the efforts of restocking the grass carp. Restocking of black bass in the Vaturu dam, Fiji and tilapia in Yonki hydroelectric dam has become an important source of fish protein for its communities.

Semi-subsistence aquaculture

In comparison to the neighbouring south east Asian countries, subsistence or artisanal aquaculture in the Pacific is not that well developed. But interest in freshwater fish and shrimp farming is growing amongst rural communities especially those inland with poor access to coastal fisheries.

Inland fisheries

In Papua New Guinea both of the major river systems, the Sepik River and the Fly River, support inland fisheries with potential for aquaculture development. Mozambique tilapia, originally introduced to the highlands, spread into the lowland and coastal Sepik River areas and became an important artisanal fishery. In Fiji there are diverse species of molluscs, crustaceans and fishes considered to be valuable freshwater fisheries. About 300,000 tonnes of the shellfish *Batissa violacea* is harvested per annum. Other fisheries include Mozambique tilapia, eels (*Anguilla* spp), Tawe (*Puntius* spp), ghost shrimp (*Macrobrachium lar*) and palaemon shrimp. According to Ministry of Fisheries records collected at municipal markets about 170–200 tonnes of *Macrobrachium* shrimp and 25 tonnes of Palaemon shrimp are sold per annum.

Part II: The sector

Domestic nearshore pelagic fisheries

Domestic nearshore pelagic fishing operations can be split into small-scale and medium-scale sectors, and in late 2003, the fishing activities in both components of the domestic tuna fishery² were benchmarked.

Small-scale tuna fishing

There are thousands of small-scale boats and canoes trolling and mid-water handlining close to the reef or around FADs in their respective country or territory. It is impossible to put an accurate number together as many of these boats and canoes are used for subsistence and artisanal purposes, rather than commercial or semi-commercial, and many are in the outer islands within each country.

There is a large contrast between countries in regard to fishing activity, and this generally revolves around the availability of markets to sell the catch. In countries like Tokelau, there is basically no market to sell fish, so the catch is distributed amongst the community. In contrast to Tokelau is the situation in Kiribati, where there are over 200 small-scale vessels fishing from South Tarawa to sell their catch on the local market. Many small-scale operators rely on fishing around FADs, when these are available, as they increase catches, cut operating costs, and increase sea safety.

A few countries are involved in small-scale tuna longlining, and it was successful in Samoa and American Samoa, from 1997 to 2001. In more recent years though, the catch rates have dropped off, resulting in reduced numbers of small-scale vessels in these countries. Charter fishing for pelagic species is an area that is slowly starting to pick up in the region. Five PICTs have no charter fishing vessels at present, and these are the countries with very little tourism, or are remote and difficult for people to get to. In the countries with charter boats, they are generally located in the main urban centres or tourist hotels.

Medium-scale tuna fishing and processing facilities

Medium-scale tuna fishing operations are the main focus of many countries in the region for economic development. Most PICTs are looking to promote private sector development, while a couple have opted for a mix of private and public sector development. Figure 1 shows the effectiveness of domestic tuna fishery development through the numbers of fishing vessels currently tuna longlining. This includes all small-scale, medium-scale and large-scale vessels, the latter category mainly applying to the distant water fleets of Korea, Japan, Taiwan and mainland China. As can be seen in this figure, the numbers of domestic vessels has risen in the late 1990s to around 450, with the numbers levelling off from 1998 to 2000. In 2001 the number of domestic vessels increased and from then until 2004, the number has hovered around 500.

In line with the development of medium-scale tuna fishing operations, companies have established shore-based facilities to process and pack high-quality tunas and associated species for export to markets in Japan, Hawaii, the US mainland, Europe, and to a lesser extent, Australia and New Zealand. In addition to packhouses, industrial processing facilities include two tuna canneries in American Samoa, one tuna cannery in Papua New Guinea, one tuna cannery in the Solomon Islands,

² The report 'Nearshore domestic fisheries development in Pacific Island countries and territories can be located at <http://www.spc.int/coastfish/Reports/HOF4/PDF/IP8/Full%20document.pdf>

Part II: The sector

one tuna cannery in Fiji, a tuna loining plant in the Marshall Islands, an *arabushi* (smoked tuna loins) plant in the Solomon Islands and a *tataki* (seared and frozen tuna loins) plant in Fiji.

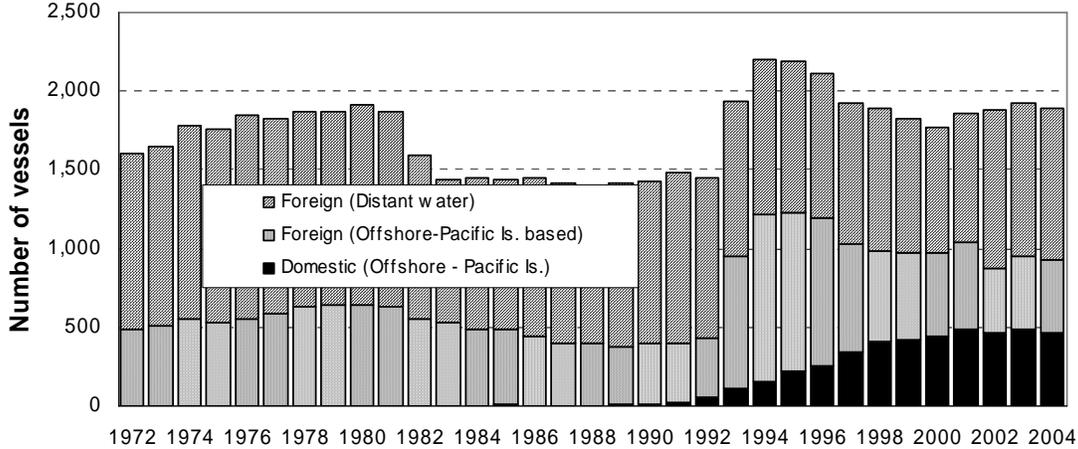


Figure 1: Longline vessels operating in the western and central Pacific Ocean

For the management of the tuna resource, most PICTs have a plan in place, or are in the process of developing or finalising a plan. All PICTs are focused on management and sustainable harvesting of the tuna resource, while reducing impacts on non-target species. Some countries are also placing equal focus on developing local capacity so that a domestic medium-scale tuna fishery can develop.

Reef Fisheries

Reef (including lagoon) fisheries in the region target a broad range of invertebrate and finfish species. These fisheries are immensely significant from a range of perspectives: cultural, social, nutritional and economic. These fisheries have traditionally been targeted predominantly for subsistence needs (for direct consumption or non-monetary exchange). Their contribution to the welfare of coastal communities in the region in terms of health, food security and social stability is enormous, with many communities directly dependent on them for their main source of protein. Reef fish fisheries in the region support far more livelihoods per tonne produced than industrial scale fisheries such as tuna.

These fisheries are vulnerable to a range of natural and human induced impacts. The continued increase in island populations has placed enormous pressure on the marine environment over the past years. The introduction of modern equipment and materials such as gill nets, scuba diving gears and bleaching agents and refrigerated storage has made fishing more efficient and destructive. Urban expansion and infrastructure development have damaged and destroyed many marine habitats and nursery areas. These impacts, coupled with natural events like cyclones and coral bleaching, are affecting the natural ability of the marine environment to sustainably cater for human needs. We are also seeing a trend towards increasing commercialization of nearshore resources at the small to medium scale enterprise level, to supply local and urban markets and for export, e.g. live reef fish trade (food and aquarium), beche-de-mer and clam and touchus, with resulting impact on subsistence food security.

Until recently, relative to other regional fisheries such as tuna, those associated with coral reefs have been lacking the management attention that is needed. These fisheries and reef systems at the national level are generally under-managed, under-funded, under-monitored, and as a consequence, poorly understood.

Part III: Narrative report

Part III: Narrative report

Under the objective for each Section, three main outputs are focused on, with many specific activity areas and activities under each output. An assessment is provided for each output against its performance indicator, by Section for the triennium period.

Aquaculture

Objective 1 – A regional support framework for economically, socially and environmentally sustainable aquaculture planning, research and development by Pacific Island governments and private enterprises;

Output 1.1: Establishment and maintenance of a regional network of contacts as a means of exchanging ideas, knowledge and experience on Pacific aquaculture issues

Output performance indicator: *SPC regional aquaculture network significantly improves communication and information flow to those involved in practical aquaculture planning, development, & management, according to independent review and Heads of Fisheries Meeting consensus.*

The SPC Aquaculture section has been firmly established as the regional focal point for the aquaculture sector. It maintains active networking among key agencies, particularly CROP agencies, such as the USP Institute of Marine Resources, SOPAC, FAO Apia, Bangkok and Rome offices, and the WorldFish Center.

The Section has developed linkages to technical organisations in Asia. In particular the Network of Aquaculture Centres for Asia-Pacific. This inter-governmental organisation represents the major Asian countries which produce over 90 per cent of the world's aquaculture. Recognising the links and synergies between the Asia and Pacific region the NACA charter was amended to allow SPC to be admitted as the first associate member free of charge. Pacific Island countries can join the organisation. The Section has also facilitated the admission of SPC to the International Network of Aquaculture Genetics (INGA) coordinated by the WorldFish Centre.

A web portal has been created (www.spc.int/aquaculture) as a means of exchanging ideas, knowledge and experience on Pacific issues, and maintain and disseminate appropriate information. The site receives an average of 70,000 hits per month. The Aquaculture Technical Series (ISSN 1683-7568) has 14 publications to its listing and a further 5 publications under layout.

The Section has convened commodity or issue specific regional meetings to assist countries to review and revise their priorities as necessary, and accordingly agree on any modification to the regional action plan. There have been 16 sub-regional or national workshops which have been mainly organised and/or funded through programming funds.

Output 1.2: Establish & maintain regional support to Pacific Government departments and private sector operators, as appropriate, in the establishment of environmentally and economically sustainable aquaculture.

Output performance indicator: *SPC aquaculture programme provides valid, useful, and rapid advice and assistance in response to appropriate requests, according to independent review and Heads of Fisheries Meeting consensus.*

Part III: Narrative report

The Section has been actively providing advice and assistance to governments in 16 nations, in the design and implementation of practical aquaculture strategies, policies and plans. To support institutional strengthening the Section has organised and participated in national aquaculture sector planning workshops in Fiji, Nauru, Samoa and Vanuatu and funded a business plan for the National Aquaculture Centre in Micronesia and a review of mariculture facilities at Motupore Island Research Centre, Papua New Guinea. The Section staff have provided a substantial amount of institutional building towards Fiji's Naduruloulou research station, which is set to become a regional training centre, and Aiyura aquaculture centre in Eastern Highland provinces of Papua New Guinea.

At the Heads of Fisheries (HoF) 2003 meeting, the delegates endorsed guiding principles for responsible practices for introduction and translocations of aquatic organism for aquaculture and fisheries³ which were drafted and submitted by the Section. At the Heads of Fisheries 2004 meeting, the delegates recognised and supported the role of aquaculture in addressing food security. Noting that feed sourcing is a common bottleneck, the SPC was supported in its efforts to coordinate regional efforts to promote the adoption of local farm-made and cost effective feeds. It endorsed SPC efforts to promote small scale aquaculture and domestication of indigenous species, particularly those which can be integrated with traditional farming practices. The Section had assisted the FAO with regional harmonisation of the aquaculture components for the FAO Code of Conduct for Responsible Fishing.

Key assistance has been provided to: Cook Islands, Kiribati and Fiji with its pearl development; New Caledonia, Vanuatu and Fiji with its marine prawn development; Vanuatu, Wallis and Futuna and Cook Islands with freshwater prawn; Solomon Islands, Kiribati and Fiji with seaweed and Papua New Guinea, Nauru, Fiji, American Samoa with GIFT tilapia. The Section is a co-leader for an ACIAR mini-project scheme, validating projects for funding. Since 2004, 9 projects have been funded.

Output 1.3: Development of the Pacific Island human resource base for aquaculture

Output performance indicator: *Sponsorship and coordination of training and professional attachments in aquaculture, in collaboration with the SPC CFP Fisheries Training Section and USP as appropriate.*

In this triennium the Section was formally set up within the SPC organisation effectively creating an entirely new regional programme. The result has been a vast improvement of our knowledge of the aquaculture sector including a database of expert contacts, which was not previously available, linkages to training institutions, and a better assessment of training needs in the region.

Developing capacity in-country has been a core activity of the Section, with 11 professionals from the region organised and/or funded to attend seven international conferences overseas including Australia, Thailand and China. Seventeen people have participated in one-on-one regional training attachments.

The Section has partnered with the USP Institute of Marine Resources on several occasions to deliver training programmes. In 2003 the SPC and USP held a three-week freshwater aquaculture training workshop involving regional participants from the Pacific. Following on from this, in 2004–2005 staff from the SPC and USP have co-authored 4 volumes of training manuals for tilapia fish hatchery and pond growout and freshwater shrimp hatchery and pond growout.

³SPC-HOF Guidelines for the Introduction and Translocation of Aquatic Organisms for Aquaculture and Culture-Based Fisheries. Refer to www.spc.int/aquaculture

Part III: Narrative report

Fisheries Development

CFP Objective 2 – Economically-viable and environmentally sound Pacific Island fishing enterprises

Output 2.1: Development of economically and ecologically sustainable Pacific Island fishing enterprises

Output performance indicator: *Enterprises assisted by the section remain sustainable, according to reasonable criteria of business success, and the Pacific Islands share of the value of regional tuna fishery landings and trade increases, according to overview information generated by FFA, SPC OFP and governments.*

The period from January 2003 to March 2005 has seen a major downturn in the tuna longline industry. High fuel prices, increased transportation costs and declining catch rates have caused economic hardship, with many domestic tuna fishing operations closing or seriously cutting back their operations. Catch rates improved in mid- 2005, with domestic tuna fishing operations increasing, although fuel and transport costs remain high. Against this economic climate, the Section has been able to assist both private and public sector fishing companies by providing training in both fishing strategy and handling techniques to improve fish quality. Many of the marginal fishing operations in the region have moved out of the fishery or gone bankrupt, resulting in the Section receiving fewer requests for technical assistance in this area. This has resulted in the Section changing its focus in line with the needs of PICTs, with more work being conducted on bycatch mitigation strategies.

The Section provided training in other areas included: the conducting of FAD site surveys and the rigging and deployment of FADs; the running of FAD fishing skills workshops to introduce mid-water fishing techniques; deep-water snapper fishing; and boat handling skills and sea safety as part of fishing workshops. Table 1 summarises the training activities of the Section over the last three years, the weeks spent delivering this training and the number of people trained.

Table 1: Training activities undertaken by the Section including the number of weeks to deliver the training and the number of people trained

Training	Countries or territories covered	Weeks of in-country training	Number of people trained
Training of 8 weeks or longer per assignment for tuna fishing deepwater snapper fishing and some FAD fishing skills training	Marshall Islands, Solomon Islands, Kiribati (Christmas Island), Tuvalu, Nauru, PNG (Kavieng)	73	207
Training from 4 to 8 weeks per assignment for tuna fishing, FAD deployment and FAD fishing skills, and deep-water snappers.	Marshall Islands, New Caledonia (Nelson course students and tutors), PNG (Kavieng), Cook Islands	19	65
Training of less than 4 weeks per assignment for FAD site surveys and deployments, FAD fishing skills, boat handling, and tuna fishing.	Niue x 2, Cook Islands, Nauru x 2, Tuvalu, Kosrae (FSM), PNG (Kavieng)	20	108
Total	10 countries and territories	112	380

Part III: Narrative report

Output 2.2: Testing, development and publication of resource materials and case-specific advice on appropriate fisheries and fishing techniques

Output performance indicator: *Significant augmentation of the body of available and useful practical information accessible to Pacific Island fisheries authorities and fishing enterprises on sustainable fishing methods, new initiatives and the results of fishing trials and experiments.*

Following on from the production of an information brochure to raise awareness of tuna longlining and the bycatch issue in late 2002, the section produced the following publications:

- ‘Horizontal longline fishing, methods and techniques — a manual for fishermen’ in 2003. This manual covers all the basics of tuna longlining, and is targeted at Pacific Islanders wanting to enter or learn more about the fishery;
- ‘Marine species identification manual for horizontal longline fishermen’ in 2005. This manual was developed in collaboration with the OFP’s Observer Programme and the Fisheries Information Section. It is being provided to all domestic tuna longline fishermen in the region to encourage them to record all species taken or interacted with by their longline gear;
- ‘Manual on fish aggregating devices (FADs): lower-cost moorings and programme management’ in 2005. This manual describing the new lower cost mooring design that was designed and successfully tested in Niue and the Cook Islands; and
- ‘Set your longline deep: catch more target fish and avoid bycatch by using a new gear design’ in 2005. This small booklet was developed to raise awareness of this new setting method with the hope that fishermen will adopt this technique in the future.

All of the Section’s publications are available on the SPC website at <http://www.spc.int/coastfish> under publications for the Section, plus technical manuals are also available on CD.

Output 2.3: National commercial fishery development plans

Output performance indicator: *A significant number of Pacific Island governments and fisheries administrations have in place specific plans and policies, that have been developed with private sector stakeholder participation and input, for the support and promotion of fully sustainable fishing enterprise.*

At the commencement of the triennium period, the Section was already involved in a collaborative project with the Forum Fisheries Agency to jointly develop tuna fishery management and development Plans for FFA member countries. During the triennium period, several of these plans were finalised with additional input by the Section, as well as input provided to five new plans (Table 2).

To complement the collaborative work between FFA and SPC on tuna fishery management and development, a new joint project has been developed and implemented. The new ‘Development of tuna fisheries in Pacific ACP countries (DEVFISH)’ project commenced in July 2005, after two years of negotiations with the EU. The aim of this project is to increase stakeholder participation in tuna fishery management and development, through the formation or enhancement of tuna fishing associations or other stakeholder groups.

Part III: Narrative report

Table 2: Progress on joint SPC/FFA developing and implementing tuna fishery management and development plans in FFA's 15 member countries

Tuna fishery management and development arrangements	2002 baseline for tuna plan development and implementation	Status at end of 2005 for tuna plan development and implementation
Countries with plans in place using SPC and FFA assistance	Solomon Islands, Vanuatu, Fiji, Tonga	Kiribati, Marshall Islands, Solomon Islands, Vanuatu, Cook Islands, Fiji, Tonga,
Countries in the process of developing plans with SPC and FFA assistance	Palau, Tuvalu, Cook Islands,	Tokelau, Nauru, Palau, Tuvalu, Niue
Countries developing and implementing their own plans without assistance	Papua New Guinea, Federated States of Micronesia, Samoa	Papua New Guinea, Federated States of Micronesia, Samoa
Total	10 countries	15 countries

Coastal Fisheries Management

CFP Objective 3 – Environmentally sound and socio-economically achievable governance of reef and lagoon fisheries

Output 3.1: To enhance the capacity of national fisheries agencies to manage sustainable fisheries and develop, or rehabilitate, and promote, socially inclusive and appropriate coastal fisheries development and governance policies and plans.

Output performance indicator: *Capacity and expertise of island fisheries agencies significantly improves in the management of fisheries resources.*

The 'Strategic plan for fisheries management and sustainable coastal fisheries in Pacific countries' – the plan, was formulated from the results of the Nadi Policy meeting and field studies undertaken in 13 countries. With the plan in place, the Section conducted two regional workshops to address some of the objectives in the plan. A gender split of PICT participants is also presented (Table 3), as one of the roles of the Section is promoting the participation of women in coastal fisheries management.

Table 3: Participants of regional meeting and trainings undertaken by the Section

Participants	SPC Regional Policy Meeting on Coastal Fisheries Management (17-21 March 2003, Nadi Fiji)	SPC/FAO Training on Fisheries Management and Statistics (15-19 November 2004, Nadi, Fiji)	SPC/WPRFMC/FAO Workshop on Fisheries Legislation and Community-Based Fisheries Management (4-8 April 2005, Honolulu, Hawaii)	Total
PICTs represented	17	21	19	
Female representatives	2	12	9	23
Male representatives	24	28	33	85
PICT participants	26	40	42	108
Other representatives	22	13	22	57
Total	48	53	64	165
Percentage of women attending as country representatives	8%	30%	21%	21%

Part III: Narrative report

The Section also focused on Institutional Strengthening of fisheries agencies, with assistance provided to Samoa, Niue and Solomon Islands. Reports to help them reshape their organisational structures including training needs and other recommendations have been submitted to the respective countries.

Output 3.2: Assistance to national fisheries agencies in their efforts to collect, store, retrieve and analyse basic data and to establish and maintain databases of information on Pacific Island coastal fisheries and fisheries management practices, network for sharing of experience in coastal fisheries management and publication of case studies and compendia.

Output performance indicator: *PICTs having improved systems of data collection and exchange of information.*

The section was working in collaboration with the Information Section to produce a booklet on fish size limits of important fish and shell fish of SPC island countries. In addition, the Section has contributed to the development of the Social Economic manual for PICTs, produced by PROCFISH.

Working in close collaboration with FAO, WPRFMC, and the Commonwealth Secretariat, two training workshops were conducted as mentioned above, one on Fisheries Management and Statistics, and the other on Fisheries Legislation and Community-Based Fisheries Management. These workshops strengthened national capacity in the areas of data collection and data statistical analysis.

Output 3.3: Assistance to countries to involve fishers and other stakeholders in fisheries management and the development of property-use rights and to review, update and/or develop practical and enforceable fisheries regulations to promote the public awareness on managing inshore fish stocks.

Output performance indicator: *Well managed inshore fisheries system established in at least one country.*

The section has assisted in the development of Community-based Fisheries Management programmes in American Samoa, Marshall Islands, Tokelau, Niue and Fiji, with National trainings carried out for each country as preparations for the development of their respective community programmes. Table 4 summarises the number of people trained during the national training activities, with a gender split.

Table 4: National training activities undertaken by the Section with a gender split of trainees

Type of training	Duration	Countries	No. of weeks	Women trained	Men trained	Total	Percentage of women trained	CFMPs* developed
Community-Based Fisheries Management	5 days	American Samoa, Marshall Islands, Niue, Fiji x 2, Tokelau	6	22	84	106	20%	15
Resource Management	5 days	Wallis and Futuna	2	45	7	52	86%	NR
Institutional Strengthening	2-8 days	Samoa, Niue, Solomon Islands	2	11	42	53	20%	NR
Total			10	78	133	211	37%	NR

* CFMPs = Community Fisheries management Plans

NR = not relevant

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The Section has also conducted a range of national in-country activities in line with the objectives of the section's strategic plan. These include the production of four different community-based fisheries management modes, the carrying out of six-monthly reviews to help countries improved further development of their respective programmes, the carrying out of socio-economic surveys of subsistence fisheries as part of resource management plans, and the carrying out of gender analysis studies in preparations for development of each country's respective tuna management and development plan.

Fisheries Training

CFP Objective 4 – Adequate human resource and technical skills capacity to manage and derive sustainable economic benefit from the fisheries sector

Output 4.1: Training courses and workshops in fisheries topics where there is high priority, with an emphasis on in-country vocational training for enterprise development

Output performance indicator: Training provided is according to priority needs of PICT enterprise development policies and significantly improves the skills base in these areas, according to independent review and Heads of Fisheries Meeting consensus.

A total of 18 Pacific Island countries and territories received training over the triennium period. The training section coordinated 5 regional and sub-regional training courses and implemented or facilitated 40 short-term in-country vocational training courses and 24 attachments, with over 707 Pacific Islanders receiving training.

At a regional level, five major projects have been completed during 2003–2005, including: an in-service training course for fisheries officers, to provide a measure of regional harmonisation of standards and skills amongst fisheries departments; a five-week 'Specialised training course for fishing vessel engineers', with 12 participants from 10 Pacific Island countries; a regional traineeship programme where fishing deckhands from Cook Islands, Kiribati, Papua New Guinea and Tuvalu attended four weeks of shore-training at the Australian Fisheries Academy campuses in Adelaide and Port-Lincoln, before two-months practical experience on board Australian commercial vessels; a 'Train the Trainers' course responding to a need for small business management training in the small-scale fisheries sectors of Vanuatu and the Solomon Islands; and follow-up, in-country training programmes on 'Start your own fishing business'.

A total of 18 in-country post-harvest training workshops were organised or facilitated with over 298 Pacific Islanders receiving training during the triennium period. Section staff have been directly involved in the running of workshops on tuna handling (American Samoa, Cook Islands, FSM, Marshall Islands, Palau, Papua New Guinea and Samoa) and tuna grading (Samoa, Cook Islands and Palau), while seafood experts have been contracted to deliver the other post-harvest and/or seafood safety/HACCP courses (Cook Islands, Solomon Islands, Niue and Tonga).

Resource materials developed include five issues (English and French) of the Special Interest Group bulletin on Fisheries Education and Training, a seaweed farming manual, a training video on tuna loining techniques and the updated version of the popular 'Onboard handling of sashimi-grade tuna' manual. The Section also produced turtle identification cards, a bycatch teaching package for training institutions, bycatch awareness materials ('Releasing hooked turtles' posters, stickers and laminated cards), and shark identification cards. The Section's 14 training videos (VHS) are now available in

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DVD format. The SPC sea safety posters were produced in local languages for Papua New Guinea, Kiribati, Niue, Tokelau and Nauru.

Output 4.2: Assessment of needs, and development of training strategies and programmes in the fisheries sector

Output performance indicator: *PICT capacity for providing in-country fisheries training is significantly increased, in priority areas identified that have been assisted by the Section, according to independent review and Heads of Fisheries Meeting consensus.*

A total of 9 sectoral training needs assessments were conducted including assessment of needs for Fisheries Officers, and 10 sectoral training strategies elaborated including a regional strategy for Fisheries Officers. The Section coordinated the FAO/SPC Regional expert consultation on sea safety in small fishing vessels in 2004. As a result of the workshop, Section staff have assisted the Samoa, Kiribati, and Fiji Fisheries Departments with the development of a proposal for the implementation of national strategies for small vessel safety.

The Section assisted Nauru with a fisheries planning exercise, undertaken by the Nauru Fisheries and Marine Resources Authority (NFMRA). The purpose was to develop, through a consultative process, a human resources development (HRD) plan to guide NFMRA's fisheries training and awareness-raising activities.

Output 4.3: Coordination of fisheries training opportunities and exchange of information on training

Output performance indicator: *Pacific Island training needs coordinators are aware of all relevant training opportunities, and fisheries training providers are aware of the needs in the region.*

Staff from the Section completed 21 in country visits. The Section continued to coordinate the management of the Fisheries Training Directory database, simultaneously updating institutions' entries in the database and the Section's website. The latest paper version of the Directory was printed and distributed in 2004. The Section continued to manage the database on fisheries personnel, which includes details on the participants to SPC fisheries courses and workshops. The Section's website is continuously developed, with the addition of the Section's latest resource materials – in both English and French - course advertisements, SIG articles and news of interest.

Reef Fisheries Observatory

CFP Objective 5 – Scientifically rigorous information on the status, exploitation levels and prospects of fisheries is used by Pacific Islanders to sustainably manage living coastal resources

Output 5.1: Establishment, and progressive improvement of quantitative assessments of the status of all aspects of reef fisheries at the local, national and regional levels

Output performance indicator: *Comprehensive assessments for 5 PICTs are published to a high scientific standard.*

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Scientific field studies have been undertaken at 40+ sites across 8 countries (Kiribati, Fiji, Tonga, New Caledonia, Niue, French Polynesia, Samoa, Vanuatu, Tuvalu) to assess the status of reef fish and invertebrate resources and the socio-economics of the resources-user relationship.

A regional database and information system has been established to house the above data and other relevant information. The PROCFish/C information system is built around a central database that contains three bodies of data: data collected by PROCFish/C team during site surveys; external data used for analysis and calculations (for example biological data); and document repository with reports and unstructured data. Software modules allow data entry, query and analysis and can be used either to access the central database or a standalone databases installed with the software. A secured web interface will allow countries to access both the PROCFish/C data and the document repository.

The Section is in the process of producing a technical report series that will include site reports for each site surveyed and also a national synthesis. A regional synthesis will be produced towards the end of the project with development of indicators for future monitoring.

Output 5.2: Assistance to Pacific Island fisheries administrations with scientific advisory or analytical input into reef fisheries management problems

Output performance indicator: *Responses to relevant requests are considered adequate and timely according to independent review and Heads of Fisheries Meeting consensus.*

Funding for continuation of the Live Reef Fish (Food and Aquarium) was secured from the MacArthur Foundation to the amount of USD \$300,000 for 3 years.

Additional surveys were undertaken in the Ha'apai group, Tonga, specifically targeted at assessment of beche-de-mer stocks. These will provide the basis for decision making with regard to the moratorium currently in place. The Act establishing the 10 year moratorium also called for a 5 year review of stocks status. The data provided by the Section will underpin the review and determine if the fishery should be reopened and what level of effort will be allowed if it is.

Assistance was also provided to Tonga to re-assess the marine aquarium trade resources and review the marine aquarium trade management plan. Part of the assistance included the training of 5 local fisheries staff in the survey method and involving them in a survey of Tongatapu. The 5 trained staff members later went on to conduct a survey of Ha'apai marine aquarium fish resources on their own. Assistance was also provided to Tuvalu, Vanuatu and Marshall Islands to assess the marine aquarium fish resources around Funafuti and look at the feasibility of starting up the trade in the country.

In New Caledonia, the Section is engaged in an ongoing study to look at the impacts of demographic change due to the construction of satellite towns to service new nickel mines at Koné. The focus on estimating potential and actual change in the dynamics of the local inshore fishery and the socio-economics of the fishery have provided an excellent opportunity for the project assessment work to feed directly into the decision making practices of the provincial government.

Also in New Caledonia, the Section is involved in the "ZoneEco" programme, a nation wide coastal resource development and management initiative. In particular the projects Community Fisheries specialist has been overseeing a study of the development potential for commercial reef fisheries operations based on domestic market absorption capacities on behalf of ADECAL (New Caledonia Economic Development Agency) and the Fisheries Department.

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Output 5.3: Capacity development of Pacific Island scientists and researchers in reef fisheries assessment.

Output performance indicator: *Three person-years of direct attachment to the project achieved, at least 30 national researchers collaborate in fieldwork and at least 30 people attend workshops.*

National Fisheries staff from Kiribati, New Caledonia, French Polynesia, Samoa, Vanuatu, and Tuvalu benefited from full-time, fully paid attachment for 6 months and participation in all aspects of field work and in undertaking additional data gathering such as market and creel surveys. Three of the above (from Vanuatu, Kiribati and New Caledonia) are now fulltime employees of the Section.

The Section engaged fisheries officers from Fiji, Tonga, Kiribati, Vanuatu and the Marshall Islands for 2–3 month periods with hands-on field training on underwater visual census in country, followed by training at SPC headquarters on data analysis and interpretation, formulation of a Live Reef Food Fish management plan and regulations, and a monitoring programme. For Vanuatu, three other fisheries staff were trained on the survey method. For Marshall Islands, the in-country hands-on field training involved 2 additional fisheries staff and 2 lecturers from the College of Micronesia.

The Section supported the Coastal Fisheries Management Section in delivery of a workshop on fisheries statistics (Training on Fisheries Management and Statistics, Mocambo Hotel, Nadi, Fiji, 15-19 November 2004).

Manuals covering both Socio-Economic Assessment and Monitoring Underwater Visual Census techniques have been developed. Accompanying software is under development. These manuals and accompanying software will be made available to Fisheries Departments and other organizations in the region. Training in the use of these tool-kits and in survey implementation is an ongoing activity during in-country work and will also be the focus of targeted workshops in 2006.

A scientific roundtable titled ‘The Status of the Marine Resource – User Relationship: Bringing Together Socio-Economic and Ecological Data to Provide the Basis for Sound Management Decisions’ was organised to bring together professionals who are actively involved in work relevant to the assessment and management of reef fisheries.

The Section has been involved with other collaborators in writing ‘Guidelines for the Management of the Live Reef Food Fish Trade in the Pacific’ (jointly with The Nature Conservancy - TNC) and ‘Ciguatera Fish Poisoning - A Technical and Field Handbook’ jointly with the French Institute for Research and Development - IRD. Information materials on the LRFT (English version) and ciguatera were developed in partnership with TNC and the Information Section and were translated into Fijian, Kiribati, Bislama and Marshallese, with electronic copies made available to the respective countries.

Fisheries Information

CFP Objective 6 – Easily-available, relevant and understandable aquatic living resource-based knowledge for member countries and territories.

Output 6.1: Availability of useful information relevant to Pacific Islands fisheries development and management

Output performance indicator: Availability of useful information is significantly increased according to independent review and Heads of Fisheries Meeting consensus.

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The Pacific Islands fisheries administrations have become more aware of the services that the Section can provide and some of them have even funded the printing costs of their awareness materials. Table 5 summarises the awareness information produced by the section and the countries and territories that have benefited. The Section has also provided technical assistance to other CFP and OFP sections in the design, production, and dissemination of information products.

Table 5: Summary of awareness materials produced for Pacific Island fisheries administrations, including posters, identification guides, pamphlets and brochures

Awareness materials	Countries or territories covered
Fish posters	Wallis and Futuna, Cook Islands (2), Vanuatu, Kiribati, Nauru (3), American Samoa, Marshall Islands, and Kosrae (2) (Federated States of Micronesia).
Invertebrate poster	Niue
Identification cards	Papua New Guinea, American Samoa, Region
Awareness packages - Ciguatera	Region, Tuvalu, Kiribati, Niue, Samoa, Fiji
Awareness packages – Live Reef Fish	Fiji, Region
Awareness package – domestic fisheries legislation	Region
Fisheries bibliographies	Papuan New Guinea, Region
Brochures, leaflets	Vanuatu
<i>Coastal Fisheries web site</i>	<i>Region</i>

Output 6.2: Provision of a medium for dialogue between specialists on topics of priority interest to Pacific Island fisheries administrations

Output performance indicator: *PICT Fisheries services and experts in topics of priority interest are mutually aware and in communication.*

Overall the Section has produced 12 issues of the Fisheries Newsletters in both English and French, and 26 English and 24 French Special Interest Group Information Bulletins during the triennium period. The major network activity has been the promotion of Special Interest Groups. The Fisheries Address Book requires a substantial amount of effort on the part of the Section to keep the 1300+ addresses current, with this book printed annually.

Output 6.3: Assistance to Pacific Islands in determining and prioritising their fisheries information needs and their strategies for fulfilling these needs

Output performance indicator: *Fisheries information needs assessed or reassessed, and mechanisms for addressing them developed in collaboration with at least 4 PICTs yearly.*

Several short-term attachments have been organised for Pacific Islands Fisheries Officer (Papua New Guinea, Tonga, Solomon Islands, and Marshall Islands). The main objective of these attachments is to widen abilities in fisheries-related information compiling and dissemination, as well as familiarisation with information searching and collection techniques. At least 4 country visits each year have enabled the Section to help the countries prioritising their information needs and develop the appropriate information ‘tools’.

Part IV: Matrix summary

Part IV: Matrix summary

Outputs, generic activities and performance indicators from the Coastal Fisheries Programme Strategic Plan (2003–2005)	Progress against performance indicators
<p>Aquaculture</p> <p>CFP Objective 1 – A regional support framework for economically, socially and environmentally sustainable aquaculture planning, research and development by Pacific Island governments and private enterprises.</p> <p><i>Output 1.1: Establishment and maintenance of a regional network of contacts as a means of exchanging ideas, knowledge and experience on Pacific aquaculture issues</i></p> <p>Output performance indicator: <i>SPC regional aquaculture network significantly improves communication and information flow to those involved in practical aquaculture planning, development, & management, according to independent review and Heads of Fisheries Meeting consensus.</i></p> <p><i>Output 1.2: Establish & maintain regional support to Pacific Government departments and private sector operators, as appropriate, in the establishment of environmentally and economically sustainable aquaculture.</i></p> <p>Output performance indicator: <i>SPC aquaculture programme is provides valid, useful, and rapid advice and assistance in response to appropriate requests, according to independent review and Heads of Fisheries Meeting consensus.</i></p>	<ul style="list-style-type: none"> • The Section has been firmly established as the Pacific regional focal point for the aquaculture sector, and is active in networking among public and private sector stakeholders, international and regional expert agencies. • The section maintains an active network amongst key government contacts whom are developing aquaculture in the region. • Links built to the Asia powerhouse producers and technical agencies, with associate membership for the Network of Aquaculture Centres Asia-Pacific (NACA) and Institutional membership with the international genetics network (INGA). • SPC Aquaculture Web Portal is online (www.spc.int/aquaculture). Average 70,000 hits/ month. • 19 publications for the Aquaculture Technical Series (ISSN 1683-7568) online or in-press. • 16 sub-regional or national workshops organised and funded through the section. • Section has provided advice and assistance in 16 member countries, with professional staff averaging 3-4 months of travel and field time per year. • Substantial support has been provided to Naduruloulou aquaculture station, Fiji to become a national and regional centre of excellence and to Aiyura aquaculture centre in Eastern Highlands, PNG as a national centre. • Guiding principles for responsible practices for introducing and translocation of aquatic organism were endorsed by Heads of Fisheries (HoF) meeting. • Aquaculture policy and legislation review carried out and presented to HoF meeting. • Economic planning support provided through modelling software package and sub-regional training workshop. • High priority need for a regional bio-security programme identified and a pre-proposal formulated for donor funding. • 14 consultancies engaged to provide advice to the region

Part IV: Matrix summary

Outputs, generic activities and performance indicators from the Coastal Fisheries Programme Strategic Plan (2003–2005)	Progress against performance indicators
<p><i>Output 1.3: Development of the Pacific Island human resource base for aquaculture.</i></p> <p>Output performance indicator: <i>Sponsorship and coordination of training and professional attachments in aquaculture, in collaboration with the SPC CFP Fisheries Training Section and USP as appropriate.</i></p>	<p>or specifically address a country need.</p> <ul style="list-style-type: none"> • Co-leader for ACIAR funded mini-project scheme which has funded 9 small projects. • 7 small grants provided for national projects. • The Aquaculture Section is an information clearing house, specifically for the aquaculture sector leading to a database of expert contacts. • 11 professionals from the region sponsored to attend international conferences. • 17 persons have participated in one-on-one training attachments to institutions or industry. • SPC and USP have partnered on significant aquaculture training activities including a sub-regional freshwater aquaculture workshop, and production of a 4 volume training manual for tilapia fish and freshwater shrimp.
<p><i>Fisheries Development</i></p> <p>CFP Objective 2: Economically-viable and environmentally sound Pacific Island fishing enterprises</p> <p><i>Output 2.1: Development of economically and ecologically sustainable Pacific Island fishing enterprises.</i></p> <p>Output performance indicator: <i>Enterprises assisted by the section remain sustainable, according to reasonable criteria of business success, and the Pacific Islands share of the value of regional tuna fishery landings and trade increases, according to overview information generated by FFA, SPC OFP and governments.</i></p> <p><i>Output 2.2: Testing, development and publication of resource materials and case-specific advice on appropriate fisheries and fishing techniques.</i></p> <p>Output performance indicator: <i>Significant augmentation of the body of available and useful practical information accessible to Pacific Island fisheries authorities and fishing enterprises on sustainable fishing methods, new initiatives and the results of fishing trials and experiments.</i></p>	<ul style="list-style-type: none"> • 10 fishing companies (both private and public sector) and over 150 self-employed small-scale fishermen received assisted. • 10 Pacific Island countries and territories received 112 weeks of training over the triennium period, with over 380 Pacific Islanders receiving training. • The Section has changed focus in line with PICTs priority needs, with increased focus on bycatch issues and ways to reduce interactions with protected species. • Study undertaken in September/October 2003 to benchmarking domestic fishing operations and fishing activities outside the 100 m depth contour, with a focus on tuna fishing activities and associated shore facilities. • Horizontal longline fishing, methods and techniques manual published in 2003. • Marine species identification manual for horizontal longline fishermen published in 2005. • Manual on fish aggregating devices (FADs): lower-cost moorings and programme management published in 2005. • Set your longline deep: catch more target fish and avoid bycatch by using a new gear design published in 2005. • Field reports produced for all long-term assignments.

Part IV: Matrix summary

<p>Outputs, generic activities and performance indicators from the Coastal Fisheries Programme Strategic Plan (2003–2005)</p>	<p>Progress against performance indicators</p>
<p><i>Output 2.3: National commercial fishery development plans.</i></p> <p>Output performance indicator: <i>A significant number of Pacific Island governments and fisheries administrations have in place specific plans and policies, that have been developed with private sector stakeholder participation and input, for the support and promotion of fully sustainable fishing enterprise.</i></p>	<ul style="list-style-type: none"> • Tuna fishery management and development plans developed for 5 countries, plus 3 that commenced before the triennium period also completed or reviewed. • New DEVFISH project commenced in July 2005. This project will assist with the formation or enhancement of tuna fishing associations and other stakeholder groups, with these groups working with government to develop national tuna fishery action plans.
<p>Coastal Fisheries management</p> <p>CFP Objective 3: Environmentally sound and socio-economically achievable governance of reef and lagoon fisheries</p> <p><i>Output 3.1: To enhance the capacity of national fisheries agencies to manage sustainable fisheries and develop, or rehabilitate, and promote, socially inclusive and appropriate coastal fisheries development and governance policies and plans.</i></p> <p>Output performance indicator: <i>Capacity and expertise of island fisheries agencies significantly improves in the management of fisheries resources.</i></p> <p><i>Output 3.2: Assistance to national fisheries agencies in their efforts to collect, store, retrieve and analyse basic data and to establish and maintain databases of information on Pacific Island coastal fisheries and fisheries management practices, network for sharing of experience in coastal fisheries management and publication of case studies and compendia.</i></p> <p>Output performance indicator: <i>PICTs having improved systems of data collection and exchange of information.</i></p> <p><i>Output 3.3: Assistance to countries to involve fishers and other stakeholders in fisheries management and the development of property-use rights and to review, update and/or develop practical and enforceable fisheries regulations to promote the public awareness on managing inshore fish stocks.</i></p> <p>Output performance indicator: <i>Well managed inshore fisheries system established in at least one country.</i></p>	<ul style="list-style-type: none"> • 3 countries received assistance in Institutional Strengthening and 2 country nationals received attachment training. • Strategic plan for fisheries management and sustainable coastal fisheries in Pacific islands was developed using results from the SPC Policy meeting and field studies. • 82 Pacific island national received training in 2 regional workshops, with women making up 26% of the participants. • Production of fish size limits booklet in collaboration with the Fisheries Information Section, and assistance provided to PROCFISH in developing a Socio-economic manual for use by PICTs. • Reputable relation with FAO, WPRFMC and Commonwealth Secretariat in joint projects such as regional fisheries training. • 106 island nationals from 5 countries received training on Community-Based Fisheries Management of which 20% were women, and 15 Community Fisheries Management Plans developed. • One country received training for women on fisheries resource management. • 3 countries received training and assistances on Institutional Strengthening. • 9 countries received assistance in a range of activities including the development of public awareness materials, the conducting of Community-Based Fisheries Management programme reviews, the conducting of

Part IV: Matrix summary

Outputs, generic activities and performance indicators from the Coastal Fisheries Programme Strategic Plan (2003–2005)	Progress against performance indicators
	socio-economic surveys, the conducting of gender studies, and the review of coastal fisheries legislations.
<p><i>Fisheries Training</i></p> <p>CFP Objective 4 – Adequate human resource and technical skills capacity to manage and derive sustainable economic benefit from the fisheries sector</p> <p><i>Output 4.1: Training courses and workshops in fisheries topics where there is high priority, with an emphasis on in-country vocational training for enterprise development</i></p> <p>Output performance indicator: <i>Training provided is according to priority needs of PICT enterprise development policies and significantly improves the skills base in these areas, according to independent review and Heads of Fisheries Meeting consensus.</i></p> <p><i>Output 4.2: Assessment of needs, and development of training strategies and programmes in the fisheries sector</i></p> <p>Output performance indicator: <i>PICT capacity for providing in-country fisheries training is significantly increased, in priority areas identified that have been assisted by the Section, according to independent review and Heads of Fisheries Meeting consensus.</i></p> <p><i>Output 4.3: Co-ordination of fisheries training opportunities and exchange of information on training</i></p> <p>Output performance indicator: <i>Pacific Island training needs coordinators are aware of all relevant training opportunities, and fisheries training providers are aware of the needs in the region.</i></p>	<ul style="list-style-type: none"> • 18 Pacific Island countries and territories received training including 5 regional and sub-regional training courses implemented or facilitated, 40 short-term in-country vocational training courses and 24 attachments, with over 707 Pacific Islanders receiving training. • New course for fisheries officers implemented. • Collaboration with other CFP Sections on 14 projects. • 1 new training video and 5 DVDs compiling the 14 fisheries training videos produced and distributed. • 2 manuals published and bycatch awareness materials produced (“Releasing hooked turtles” posters, stickers, cards, turtle identification cards). • SPC sea safety posters produced in 5 local languages. • 9 sectoral training needs assessments conducted including assessment of needs for Fisheries Officers. • 10 sectoral training strategies elaborated including a regional strategy for Fisheries Officers training. • Coordination of an SPC/FAO expert consultation on sea safety in small fishing vessel. • New curriculum for the annual SPC Fisheries Officers course developed. • Training packages on bycatch issues in pelagic longlining developed. • 21 in country visits conducted in 12 member countries and territories. • Database maintained on an ongoing basis; Australian aquaculture training opportunities included; publication of Fisheries Training Directory in 2004. • Section’s Trainees Database maintained on an ongoing basis • Website updated; inclusion of a contact list for national fisheries training institutions • 5 issues of information bulletin published in English and French

Part IV: Matrix summary

Outputs, generic activities and performance indicators from the Coastal Fisheries Programme Strategic Plan (2003–2005)	Progress against performance indicators
<p>Reef Fisheries observatory</p> <p>CFP Objective 5 – Scientifically rigorous information on the status, exploitation levels and prospects of fisheries is available to be used by Pacific Islanders to sustainably manage living coastal resources</p> <p>Output 5.1: Establishment, and progressive improvement of quantitative assessments of the status of reef fisheries at the local, national and regional levels</p> <p><i>Output performance indicator: Comprehensive assessments for 5 PICTs are published to a high scientific standard.</i></p> <p>Output 5.2: Assistance to Pacific Island fisheries administrations with policy and scientific advisory or analytical input into reef fisheries management problems</p> <p><i>Output performance indicator: Responses to relevant requests are considered adequate and timely according to independent review and Heads of Fisheries Meeting consensus.</i></p> <p><i>Output 5.3: Capacity development of Pacific Island scientists and researchers in reef fisheries assessment</i></p> <p><i>Output performance indicator: Three person-years of direct attachment to the project achieved, at least 30 national researchers collaborate in fieldwork and at least 30 people attend workshops.</i></p>	<ul style="list-style-type: none"> • Scientific field studies undertaken at 40+ sites across 8 countries to assess the status of reef fish and invertebrate resources, and socio-economic resource-user-relationship • Regional database established, housing data collected by PROCFish/C team during site surveys; external data used for analysis and calculations; and document repository with reports and unstructured data. • Software modules allow data entry, query and analysis. • Technical report series being produced, which will include site reports for each site surveyed and a national synthesis. • USD \$300,000 secured from MacArthur Foundation to continue live reef fish work over 3 years. • Beche-de-mer surveys in Tonga to be used to underpin a review of the stock, to see if the current moratorium can be lifted, and if so, what effort can be used in the fishery. • Assistance provided to Tonga to re-assess marine aquarium trade resources and management, with 5 local staff trained and further studies undertaken. • Assistance provided to Tuvalu, Vanuatu and Marshall Islands to assess marine aquarium fish resources. • Assessment being conducted in Kone, New Caledonia to look at impacts of demographic change due to construction of new towns to service new nickel mines. • Section overseeing a study in New Caledonia on the development potential for commercial reef fisheries operations based on domestic market absorption capacity • National fisheries staff from 6 countries have received paid training for 6 months and participated in field work. • 5 live reef fish trade attachments undertaken for 2–3 months each, with training provided in underwater visual census in country and data analysis at SPC • Support provided to Fisheries Management Section in delivery of regional workshop on fisheries statistics. • Training provided to Nelson Course participants on standardised methodologies. • Input provided to national workshop in Kiribati on the

Part IV: Matrix summary

Outputs, generic activities and performance indicators from the Coastal Fisheries Programme Strategic Plan (2003–2005)	Progress against performance indicators
	<p>strengthening of national coastal fisheries legislation.</p> <ul style="list-style-type: none"> • Sub-regional workshop on economics and market analysis of live reef fish trade in the Pacific undertaken in conjunction with ACIAR. • Manuals on Socio-economic assessment and Monitoring underwater visual census have been developed, with accompanying software. • Guidelines for the management of live reef food fish trade in the Pacific and Ciguatera fish poison have been developed in collaboration with TNC and IRD. • Scientific roundtable meeting held for assessment and management of reef fisheries.
<p><i>Fisheries information</i></p> <p>CFP Objective 6: Easily-available, relevant and understandable aquatic living resource-based knowledge for member countries and territories.</p> <p>Output 6.1: Availability of useful information relevant to Pacific Islands fisheries development and management</p> <p>Output performance indicator: <i>Availability of useful information is significantly increased according to independent review and Heads of Fisheries Meeting consensus.</i></p> <p>Output 6.2: Provision of a medium for dialogue between specialists on topics of priority interest to Pacific Island fisheries administrations</p> <p>Output performance indicator: <i>PICT Fisheries services and experts in topics of priority interest are mutually aware and in communication.</i></p> <p>Output 6.3: Assistance to Pacific Islands in determining and prioritising their fisheries information needs and their strategies for fulfilling these needs</p> <p>Output performance indicator: <i>Fisheries information needs assessed or reassessed, and mechanisms for addressing them developed in collaboration with at least 4 PICTs yearly</i></p>	<ul style="list-style-type: none"> • 13 fish and invertebrate posters completed for 9 countries and territories. • Awareness materials produced and distributed for 8 countries and the region in general. • Coastal Fisheries website is updated regularly with new materials placed on it as soon as they are published. • Production of fully searchable CDs with all SPC marine Resources Division publications on request • Production of 2 fisheries bibliographies • Production of technical reports for the other section of the Marine Resources Division • 50 Special Interest Groups Information bulletins published (26 English and 24 French). • 24 Fisheries Newsletter published (12 French and 12 English). • 3 Fisheries Address Book. • 14 in country visits conducted with technical assistance provided. • 4 training attachments for Pacific Islands fisheries officers conducted.

Part V: General comments and observations

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Historical perspective and lessons learned

SPC has been working in fisheries since 1951, and its activities have naturally evolved in line with changing sectoral needs. Today, the Coastal Fisheries Programme faces a basic set of priority issues that may not actually seem much different from those that faced the first SPC Fisheries Officer – Hubertus Van Pel, the “flying Dutchman” – in the 1950s: Fisheries Development, Protection/management and National Institution-building. However, things have moved on considerably, and the region is now looking at “building the superstructure” and not just wondering how to “lay the keel”.

We can probably envisage a time when all SPC members have fully-developed national fisheries services and no longer require regional support to manage coastal fisheries and aquaculture at environmentally optimum levels of sustainable production, but that time is some years off yet. The next hurdle to be jumped – the implementation of the Ecosystem Approach to Fisheries – alone will require a significant increase not only in governance linkages, but also in knowledge. As well as information about fisheries themselves, the EAF will require knowledge about all impacts on the coastal fisheries ecosystem, including land-based impacts.

Unlike the Oceanic Fisheries Programme, the Coastal Fisheries Programme does not have a continuing imperative to provide a regional service based on a need, enshrined in international law, to support cooperative inter-country management of regionally-migratory stocks of fish. Coastal fisheries are not a trans-boundary issue⁴. The justification for a regional approach to Coastal Fisheries lies mainly in economies of scale and as a vehicle for facilitating dialogue between countries about shared coastal fisheries issues (including, increasingly sharing expertise between islands). It also has a role in coordinating regional points of view and supporting regional reporting in international non-tuna fisheries processes.

Inevitably, the Coastal Fisheries Programme will continue to evolve, moving out of fields where members gain increased national capacity, and perhaps increasingly concentrating its advisory support on the smallest island members, whilst also facilitating increasing levels of interchange of expertise and dialogue between members. However, for the next programme period 2006-9, the requirements of the region in applying the Ecosystem Approach to coastal fisheries will require a full-strength Coastal Fisheries Programme.

Programme funding issues

For much of the life of the Coastal Fisheries Programme, at least over the past three decades, the bulk of the programme has been project funded. Nowadays, a larger proportion of the programme budget is made up of secure long-term programme-funding. At the start of the new funding arrangements there was a worry that the number of donors in the funding base would narrow (some argued that there was less need for programme managers to go out and raise funds when the basic funding is secured), and perhaps the work-programme might become less adaptive (some change is usually guaranteed when projects finish).

At the sectoral programme level, programme funding is not actually sufficient to carry out the full work-programme. A significant proportion of the budget for actual operations of the Coastal Fisheries

⁴ Except where they are subject to transboundary impacts, such as multinational fishing.

Part V: General comments and observations

Programme, as well as its entire fisheries scientific assessment and monitoring capability, comes from special project funding, primarily by the European Union, but also involving the Commonwealth Secretariat, Taiwan, the MacArthur Foundation and various other miscellaneous projects. Thus programme and section heads are still obliged to compete for some component of their budgets in the marketplace. More significantly, the processes that have been built into the programme management systems are unlikely to permit complacency. Programme funding has provided a solid foundation upon which to build the complete programme structure, rather than an incentive to complacency by providing for all needs from one reliable source.

On the issue of the programme's capacity to adapt, the SPC Heads of Fisheries meeting is of particular value in fisheries programme management, by providing SPC member oversight of *intra*-programme review and priority-setting processes.

The programme funding process has worked well and benefited the Coastal Fisheries work programme substantially.

Programme versus sections

The Coastal Fisheries Programme has evolved from a single person, in the early 1950s, through a miscellaneous collection of donor-funded fisheries projects, to an integrated programme operating under a harmonised set of objectives and a joint goal. The last three years have been the first period under which the programme has operated under a formal member-country endorsed strategic plan. As several observers have pointed out, however, the Coastal Fisheries Programme still does not appear to be an obvious unit – member country advisory services are normally provided at the sectional level – and is not perceived as a programme in the same way as, say, the SPC Oceanic Fisheries Programme or Pacific Women's Bureau might be.

Assisting countries to apply the Ecosystem Approach to coastal fisheries will inevitably require more of a "task force" approach to the work, and require both *intra*-programme and *inter*-CROP agency collaboration. As well as the multidisciplinary requirements, there will also be a need to help countries develop integrated national coastal fisheries ecosystem governance systems running through several functions, and this will also promote the team approach.

Strategic planning

The programme has traditionally operated on the basis of "official requests" from member countries for services, which has also promoted a more ad-hoc approach. Whilst this has been channelled within the limits of the strategic plan, referring countries to other potential sources of services for requests that fall outside the plan, and by developing requests in the form of "mini-projects" in consultation with member countries so that inappropriate requests are largely avoided, during the next strategic plan period the CFP will need to move even further away from this mode of operation, and into a more pre-planned country-by-country task force approach.

The Programme does, however, need to retain its ability to respond relatively rapidly to emergent and local coastal fisheries crises. A strategic approach theoretically does away with the need for such "firefighting" responses, but a true strategic approach will always recognise that there are events that cannot be predicted. One of the lessons learned during the current plan period is that complete concentration on a country-by-country approach, as required by the EU-funded coastal fisheries assessment project, makes it difficult to provide services or advice to countries on ad-hoc, but high-priority problems arising, where local capacity is insufficient to cope.

Part V: General comments and observations

The mechanism of providing a “Minor Projects Fund” to each SPC Division from SPC funds is one mechanism that strengthens the programme’s rapid-response capacity, and in particular supports the travel of staff to address urgent fisheries management advisory needs⁵ where project funds would be inappropriate to use.

Known gaps

The following is a brief list of areas of specific expertise that would complement the existing programme structure and further strengthen its effectiveness.

Economics: the CFP review, at the beginning of the plan period, recommended that the programme acquire a specialist economist, particularly to assess the feasibility of fishery and aquaculture development activities from an economic perspective.

Legislative: there has long been a gap in providing regional support for coastal fisheries legal processes, particularly, at this stage, legislative drafting. This need can only become more acute as the CFP moves into the implementation of the Ecosystem Approach, which is likely to require considerable restructuring or fine-tuning of national legislative codes, regulations or policies. While the Forum Fisheries Agency is seen as the lead agency for fisheries legislative issues in the region, it has several times acknowledged that it is concentrating specifically on tuna fisheries, and on legislative issues to do with the tuna fishery, which are usually entirely different to the codes governing coastal fisheries management.

Mariculture: the need for SPC support to the rational sustainable development of Pacific Island aquaculture will grow, if the changing balance of fisheries and aquaculture in the rest of the world is anything to go by. The CFP’s current expertise is concentrated in developing aquaculture governance frameworks in general, and in freshwater aquaculture farming systems, and this needs to be complemented by specialist expertise in marine aquaculture (mariculture).

Land-based impacts: One area brought up by the last SPC Heads of Fisheries Meeting is something that will be required in developing an Ecosystem Approach to Coastal Fisheries, and that is specialist capacity in the assessment of non-fishery impacts on fisheries, particularly assisting Pacific Island administrations with the establishment at the technical level of marine impact monitoring systems but also at the policy level in establishing governance linkages with land-based decision-making processes. It is possible that SPC may be able to work with SOPAC, particularly in view of their expertise in water-quality monitoring, but SOPAC’s capacity is also strained to the limit, according to the latest SOPAC Governing Council Meeting, and this fisheries ecosystem function would require new regional resources to be found.

In passing, it might be mentioned that at least one long-outstanding gap has already been filled (in addition to the new regional aquaculture support service) during the current plan period, and that is the acquisition of regional fisheries social scientific survey and analysis capability. Economic expertise would equip the programme with the “third pillar” of sustainable development.

⁵ For example, when a foreign boat shows up in port asking for a licence to explore a new coastal fishery where there are no local guidelines in place, or where a community reports a sudden inexplicable downturn in the abundance of a species that the national government has no experience in assessing.

Part VI: Finances

Part VI: Finances

The Coastal Fisheries Programme has been financed from a number of sources: SPC's core budget, programme funding and project funding, and the amounts are summarised in Tabel 6.

Table 6: Summary of income by donor source for the Coastal Fisheries Programme over the triennium period

Resources (Income budget)	2003	2004	2005	Total
Core and Programme funding				
SPC Core	152,800	139,940	148,900	441,640
Australia	800,000	765,000	720,000	2,285,000
New Zealand	250,000	340,000	315,400	905,400
France	461,400	500,000	495,000	1,456,400
Sub-total	1,664,200	1,744,940	1,679,300	5,088,440
Project funding				
ACIAR		8,280		8,280
Commonwealth Foundation	57,500	52,040		109,540
EC	974,800	1,827,010	1,615,920	4,417,730
FAO		14,010		14,010
MacArthur Foundation	183,300	199,870	85,000	468,170
New Caledonia		50,000		50,000
NZAID	110,200			110,200
Taiwan/ROC	68,400		61,660	130,060
Other	51,100	149,090	75,000	275,190
Sub-total	1,445,300	2,300,300	1,837,580	5,583,180
Total	3,109,500	4,045,240	3,516,880	10,671,620

Source: Revised budgets 2003 and 2004, Budget 2005.

The income received from Core and Programme funding each year over the triennium period has been relatively consistent. Project funding on the other hand has fluctuated considerably, not so much in total amount, but more by funding source. The main increase in project funding has come from the EU, with two new projects starting up in 2004 and 2005. The programme, particularly in the last year of the triennium, has been disadvantaged by increasing travel cost. The programme has coped through the acquisition of special project funds (the availability of which is not often predictable) and by making use of the divisional small projects fund.