

SECRETARIAT OF THE PACIFIC COMMUNITY
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COMMITTEE OF REPRESENTATIVES OF GOVERNMENTS AND ADMINISTRATIONS
(Nuku'alofa, Tonga, 6–9 October 2009)

DIVISIONAL REPORTS - 2009

AGENDA ITEM 3.2 – MARINE RESOURCES

(Paper presented by the Secretariat)

Summary

1. This paper provides a summary of the work of the two programmes that now form the SPC Marine Resources Division (Coastal Fisheries and Oceanic Fisheries) during 2009. It also provides an overview of the CRISP project, which is based at SPC Noumea. The report highlights some achievements of the division during the year – completed during the first half or planned during the second. It also identifies some of the opportunities and challenges, and the steps that are being taken to address them so as to provide better and more efficient service to member countries and territories. Finally, it proposes some ways in which the division could contribute more to building national capacity in the fisheries sector.

Recommendations

2. CRGA is invited to:
 - i. note the activities and achievements of the division during the current year;
 - ii. note the short-term funding problems faced by programmes, particularly the Coastal Fisheries Programme;
 - iii. note the opportunities and challenges for the programmes in meeting the changing fisheries needs of members;
 - iv. support strengthening of initiatives to develop capacity in member fisheries administrations and the private sector; and
 - v. note the reliance on project funding for service delivery, and the requirement for an increase of 25 per cent in longer-term funding to sustain core functions.
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MARINE RESOURCES DIVISION

Purpose of this paper

1. The purpose of this paper is to inform CRGA on the results of work by the Marine Resources Division (MRD) during 2009, highlight some broader issues in the fisheries sector in the region, and discuss SPC's future role and challenges foreseen for SPC in assisting members to address them.

Divisional structure and goals

2. The division consists of two programmes: the Oceanic Fisheries Programme (OFP) and the Coastal Fisheries Programme (CFP). The Maritime Programme, which was formerly part of the Division, was separated from MRD at the beginning of 2009. The project coordination unit of the Coral Reef InitiativeS for the Pacific (CRISP) joined the Division in 2008. This project is implemented by a number of agencies, but work that involves or directly complements SPC activities is outlined in this report.
3. Both OFP and CFP are coming to the end of their current strategic plan periods (2006–2009). An independent review of the programmes was carried out during the year, which is covered in Paper 3.2.2, and many of its recommendations are incorporated in a new draft strategic plan, which is submitted for the consideration of CRGA as Paper 3.2.4.
4. The current goal of the division (up to the end of 2009) is to contribute to the achievement of the regionally-shared vision of 'A healthy ocean that sustains the livelihoods and aspirations of Pacific Island communities.'¹
5. The goals of the coastal and oceanic programmes are respectively:

'to significantly assist SPC members in their commitment to apply the ecosystem approach to coastal fisheries and aquaculture by 2010;'

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.'
6. New goals and objectives have been developed for the new Strategic Plan 2010–2013, which is presented in draft form as working Paper 3.2.4 for consideration by CRGA. While OFP will continue with broadly similar objectives, those of CFP have been modified from the current plan.
7. The activities that contribute to the achievement of these goals during 2009 are listed by country in Annex 1, which also highlights the links to the Joint Country Strategies where applicable. Annex 2 lists the main sectoral workshops and meetings during the year and Annex 3 provides a breakdown of publications.
8. The lists of activities in these annexes provide another way of looking at what the division does, and do not replace the results-oriented programme reports and work plans that will be published toward the end of the programme year on 31 December.

¹ Pacific Islands Regional Ocean Policy, approved by Pacific Island Forum Leaders and CRGA in 2002 (see http://www.spc.int/piocean/forum/Info_papers/5_Ocean_Policy_plain_text_.pdf)

Divisional finance

9. The revised budget for the two programmes for 2009 was 8.65 million CFP units (equivalent to USD 10.4 million mid-year).
10. As is well known, funding is derived from three sources:
- **core funding**, which comes mostly from member contributions and is mainly used for division and programme management;
 - **programme funding**, which is contributed by Australia, France and New Zealand on an agreed multi-year basis to support a range of programmed activities; and
 - **project funding**, which is provided to specific projects of fixed duration, requiring separate accounts and reporting. Major project donors in the fisheries sector include EU, Australia, New Zealand, the Global Environment Facility (GEF), and the Western and Central Pacific Fisheries Commission (WCPFC).

Table 1: Revised budgets of the coastal and oceanic programmes for 2009 in CFP units

	OFP	CFP	Combined
Core	150,000	150,000	300,000
Programme	820,000	1,390,000	2,210,000
Project	4,320,000	1,820,000	6,140,000
Total	5,290,000	3,360,000	8,650,000

11. Some important differences between the finances of the two programmes include:
- A much greater proportion of project funding in OFP, from diverse sources – in contrast CFP had no immediate replacement for its largest donor funded project (PROCFish), which ends in 2009;
 - A high proportion of the total budget of CFP committed to staff costs, while OFP has more operational funds (although much of this is committed to tagging work); and
 - A general reliance on programme funding to meet staff costs for the main activities of the division.

The CRISP project coordination unit is entirely project funded.

12. There were two negative impacts on funding during the year:
- Exchange rate movements of the Australian and New Zealand dollars against the CFP due to the global economic crisis resulted in an effective loss of 17 per cent of programme funding. (Estimates for the 2010 budget are based on a reduction of 15 per cent on the original 2009 budget.)
 - Due to delays in approval of the Regional Indicative Programme for the 10th round of the European Development Fund (EDF10), no EU funding was available to build on the support provided for coastal fisheries resource assessment under the PROCFish project.
13. On a more positive note:
- A grant of project funds from the Australian Agency for International Development (AusAID) of AUD 1.5 million (1.04 million CFP units) was approved mid-year to support a number of new activities in both coastal and oceanic fisheries, as well as the 'Future of Fisheries' study; and

- When this paper was prepared, the first EDF10 regional fisheries project (SciCOFish) was progressing through the approval process and seemed likely to be operational in mid-2010. The second Development of Tuna Fisheries in the Pacific ACP Countries Project (DevFish 2), for which the Forum Fisheries Agency (FFA) is the lead agency but with some activities implemented by SPC, was running on a delayed schedule, but still seemed to have a chance of starting in 2010.

Divisional staffing

14. In mid-2009, the division had a total of 64 staff (of whom 22 were female), with the following make up:

Table 2: Staffing of MRD as of mid-2009

	Director	OFP	CFP	Total
Professional	1	23	18	42
Technical		13	3	16
Administrative	1	2	3	6
Combined	2	38	24	64

In addition, the CRISP coordination unit employs one professional staff member, one technical officer and one administrative assistant.

15. Professional staff are internationally recruited, and currently 9 of the 42 positions are held by Pacific Islanders. Technical staff are mainly data entry personnel but include laboratory technicians and publication design specialists. Together with administrative staff, they are recruited locally.
16. The number of CFP staff is shrinking rapidly. Due to lack of programme funding, the contracts of two staff from CFP could not be renewed during 2009. A further six professional staff and one support position will be lost during the year as the PROCFish and DevFish projects come to an end.

New divisional arrangements

17. The independent review of the Marine Resources Division (see Paper 3.2.2) recommended some restructuring of the Coastal Fisheries Programme, which will be implemented from the start of 2010. Instead of having five separate sections, the programme will have three: Coastal Fisheries Science and Management, Aquaculture, and Nearshore Fisheries Development. Each section will address one of the objectives of the work programme.
18. This mirrors the structure of the Oceanic Fisheries Programme, which already has three sections, each addressing one of the programme's main objectives.
19. The Information Section will form the basis of a new support unit, which will come under the Director and will provide services to both programmes. When funding permits, a Training Officer will also be added to this unit, to coordinate arrangements for training initiatives by both programmes and to strengthen SPC links with fisheries training institutions in the region.
20. During 2010, the officer dealing with freshwater aquaculture in CFP will be relocated from Noumea to Suva. A new observer training and coordination post under OFP will be based in Pohnpei. In both cases, the motivation is to put the officers closer to where most of their work takes place. This should result in greater efficiency and cost savings.

21. The review recommended that CRISP should not be further incorporated into the structure of the division; but future activities that may arise out of current CRISP work – such as a possible EDF10 project – will be fully integrated into the division.

Highlights of 2009 programme work

Divisional activities

22. Activities coordinated by the MRD Director are mainly those which relate to the work of both programmes. Following are some highlights from 2009:
- Completion of the 6th Heads of Fisheries meeting in February in Noumea. The meeting provided an opportunity for senior fisheries officials from the region to provide input into both the review of the division and the development of the new strategic plan.
 - Coordination of the MRD input and response to the independent review of the programmes.
 - Drafting of the Strategic Plan 2010–2013, incorporating the objectives and results developed by the Heads of Fisheries meeting, as well as major recommendations of the review.
 - Development and follow-up on funding proposals for the EDF10 SciCOFish (Scientific Support for the Management of Coastal and Oceanic Fisheries in the Pacific Islands Region) project and the AusAID Pacific Fisheries grant and assistance with documentation for DevFish 2 (joint FFA/SPC project).
 - Launching of the Future of Fisheries study – finalising terms of reference (TOR), selection of consultants, formation of expert panel and steering committee (see Paper 3.2.3).

Coastal Fisheries Programme

23. Objectives of the Coastal Fisheries Programme, as stated in the Strategic Plan 2006–2009 are:
- Objective 1: Assisting governments and administrations in the development of scientifically-informed and socially-achievable coastal ecosystem management systems including coastal living resource components of national ocean policies.
 - Objective 2: Consolidating a regional support framework for economically, socially and environmentally sustainable aquaculture planning, research and development by Pacific Island governments and private enterprises.
 - Objective 3: Assisting governments and administrations in the development and management of domestic nearshore commercial fisheries within a sustainable ecosystem context.
24. The work of CFP during 2009 falls into six broad categories: coastal fisheries management, coastal resources assessment, nearshore fisheries development, aquaculture, training, and fisheries information.
25. Coastal fisheries management work has successfully introduced the ecosystem approach into community-based management initiatives in a number of Pacific Island countries and territories (PICTs). Fisheries staff are now familiar with the concepts, guided by a new handbook, which provides a workable approach to this complex subject. Assistance with coastal fisheries legislation is also provided by the Coastal Fisheries Management Section, and a highlight of the year was the completion of draft legislation for Samoa.

26. Coastal resource assessment has been dominated by the work of the long-running PROCFish project, which has now produced national assessments for all Pacific members of the African, Caribbean and Pacific Group of States (ACP) and overseas countries and territories (OCT) (listed in Annex 3). The database generated by this project provides a valuable resource for future analysis, including the development of simplified resource survey methods. The Live Reef Fish Trade Initiative has developed management plans to ensure sustainable use of aquarium fish in Vanuatu, Marshall Islands and Kiribati (Kiritimati Island). Resource assessments and assistance with sustainable management of beche-de-mer fisheries was also provided in two states in the Federated States of Micronesia (FSM) and in Tonga.
27. The nearshore fisheries team continued to establish sustainable FAD programmes for coastal communities with deployments and training in Nauru, FSM, and New Caledonia. National trainers of fishing crew were themselves trained on by-catch mitigation, to reduce the capture of endangered species by commercial tuna fisheries. A new initiative was a feasibility study on the development of small-scale sport fishing in Cook Islands, with follow-up activities developing several small tourist-guiding businesses. Tuna fishers associations were supported by the DevFish project in a number of countries including Tuvalu and Niue. The successful pilot project in New Caledonia using fish waste to make silage continues to attract interest from other PICTs.
28. The work of the aquaculture team ranges from assistance with the development of broad national policies and strategies (with national strategies completed for Solomon Islands and Wallis and Futuna) to technical assistance with specific projects and trials. Examples of the latter include setting up facilities for breeding of clownfish for the aquarium trade in Vanuatu, development of a private sector coral culture venture in Tonga, and trials of farming local tilapia strains in Solomon Islands. The Aquaculture Section was successful in coordinating a regional approach to meeting disease-reporting requirements for import of live aquarium fish and invertebrates into the EU, which was approved by the European Commission during the year.
29. Many of the programme's activities involve training and capacity building, but some highlights in this area during 2009 include: assistance in developing a purse-seine training module for the National Fisheries College of Papua New Guinea, which will meet the training requirements of crew for their growing tuna industry; and a training needs assessment for the staff of the Fisheries Department of Tonga, with follow-up activities to improve performance. Fisheries staff from Tonga, Samoa and American Samoa were also trained in the ecosystem approach to coastal fisheries management through practical attachments.
30. The information section continued to provide a range of technical information for fisheries professionals across the region, as well as meeting the needs of countries for assistance with the production of high quality documents. Special publications were prepared for New Caledonia, Tonga, Tuvalu and Vanuatu during the year.

Oceanic Fisheries Programme

31. The OFP work programme in 2009 continued to focus on its key objectives:
 - 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 (the Stock Assessment and Modelling Section);
 - 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 Statistics and Monitoring Section); and
 - Improved understanding of pelagic ecosystems in the western and central Pacific Ocean, with a focus on the western tropical Pacific (the Ecosystem Monitoring and Analysis Section).

32. Regional stock assessments were completed for bigeye, yellowfin and South Pacific albacore tuna. The assessment for bigeye continues to show that this stock is being fished well above sustainable limits; yellowfin is being fished close to the sustainable limit, particularly in the core western tropical region; while albacore catches are within safe levels. An evaluation of a number of management measures introduced by WCPFC in December 2008 was also carried out. This evaluation concluded that, while some of the measures can be expected to reduce catches of bigeye, the failure to constrain the increase in purse-seine fishing effort, various exemptions on the cuts in longline catch and the exclusion of archipelagic waters from the coverage of the measures means that the management measures will not achieve their aim. Much tougher management action is required.
33. At the national level, National Tuna Fishery Status Reports (NTFSR) were produced for FSM, Kiribati, Marshall Islands, Nauru, Samoa and Tuvalu, and work was started on the reports for Cook Islands and Solomon Islands. These reports provide an essential resource to PICTs for planning tuna fisheries management and development at the national level. An analysis of the purse-seine fishery in Papua New Guinea (PNG) was also completed, and staff were involved in a number of national consultations organised by FFA to develop the ecosystem approach.
34. A strong focus of the work of the Statistics and Monitoring Section this year has been the training of a large number of new observers, which provided enough observers to meet the Regional Observer Programme target of 100 per cent observer coverage on purse-seine vessels in August and September. SPC staff were involved in national observer training courses in FSM, Kiribati, Marshall Islands, PNG, Solomon Islands and Vanuatu, as well as a sub-regional course for Tuvalu, Tonga and Vanuatu. This has been a considerable achievement. However, with a target of 100 per cent coverage year-round on purse seiners, challenges remain for 2010 in terms of the numbers of observers needed, coordination and management, data processing, and maintaining the quality of the programme.
35. A comprehensive observer database management system (TUFMAN-TUBS) was completed in July 2009 – this system will provide national fisheries offices with a tool to manage their observer data in the future.
36. The Pacific Tuna Tagging Programme (PTTP) was fully operational through 2009. The second cruise of the chartered Solomon Islands pole-and-line vessel *Soltai 105* was completed as planned in June, covering PNG, FSM, Marshall Islands, Kiribati, Tuvalu and Solomon Islands. Over 51,000 tuna were tagged, exceeding targets. A second cruise, mainly in the western part of the region (Nauru, PNG, FSM and Indonesia) was underway when this report was prepared.
37. In the eastern part of the region, a collaborative programme between SPC and the Inter-American Tropical Tuna Commission used a long-range hand-line vessel based in Hawaii for tagging in the Line Islands of Kiribati and north of the Marquesas (French Polynesia) during the first half of the year. Although the number of fish tagged was more modest, reflecting the very different fishing technique, 85 per cent of those tagged were the target species of bigeye tuna.
38. Overall, PTTP has now tagged approximately 215,000 tuna, including more than 600 with electronic tags that provide detailed information on horizontal and vertical movements. By the end of this phase of the programme later this year, it is expected that total tag releases will exceed 250,000.

39. In mid-2009, tag returns for the PTTP were running at over 11 per cent, with good return rates from processing operations in the region. OFP staff have made follow-up visits to several countries whose fleets seem to be returning fewer tags than would be expected, and trials are also in progress to determine the proportion of tagged fish that are caught but not reported. Final tag return rates are expected to be about 15 per cent, or around 35,000–40,000 returns. These data will provide a vast amount of information that will inform tuna stock assessment and related work for many years.
40. A separate tagging project to improve understanding of albacore tuna resources (which form the basis of many of the longline tuna fisheries in the south of the region) was carried out in the early part of the year. This involved tagging troll-caught albacore in New Zealand coastal waters that should be recovered after several years as they mature and migrate to where they can be recaptured by longline vessels. Although fishing conditions were poor this year, the project achieved over 90 per cent of its target by tagging 2,766 fish.
41. Trophic relationships in the pelagic ecosystem have been determined using stomach content and stable isotope analyses as well as lipid content to better understand species interactions and cascading effects of fishing activities and climate variations. Recent stable isotope analysis has detected differences in the chemical signature between regions, providing important information on the rates of movement of tuna between the western and eastern Pacific Ocean. This information will be used in future stock assessments.
42. In addition to the direct provision of scientific services to SPC members, OFP continues to conduct national capacity building activities for SPC members in the key areas of fishery monitoring and data management, training in tuna stock assessment interpretation and direct support for observer coordination and port sampling. Many of these activities are noted under Annex 1.

CRISP

43. The initiative for the conservation and sustainable management of coral reefs in the Pacific (CRISP) was established by France in 2003. Its aims are to develop a vision for the future of this unique environment and of the people that depend on it and to introduce strategies and projects to conserve their biodiversity, while developing the economic and environmental services that they provide both locally and globally.
44. This approach was developed with four objectives:
 - 1) Improve knowledge about biodiversity, status and function of the coral ecosystems;
 - 2) protect and manage coral ecosystems on a significant scale;
 - 3) develop the economic potential represented by the use and biodiversity of coral ecosystems;
 - 4) disseminate information and knowledge and develop a leadership role within local, national and international networks.
45. The project's activities include work in the following thematic areas:
 - ecosystems management;
 - better knowledge of ecosystems;
 - economic development of coral reef resources;
 - dissemination of knowledge and techniques;
 - monitoring of coral reefs and resource health;
 - raising awareness of decision-makers and stakeholders; and
 - training and institutional strengthening.

46. The project has been funded from a number of sources and implemented by four technical partners. The Secretariat of the Pacific Regional Environment Programme (SPREP) has been the main CROP (Council of Regional Organisations in the Pacific) agency involved. Until recently, the only role of SPC had been to accommodate the Project Coordinator; but with the start of a second phase in 2008 the coordination unit was integrated into SPC, and some collaborative activities begun.
47. Activities in the following areas directly complement the work of SPC, often involving Marine Resources Division staff or data collected by them. Highlights during 2009 have included:
 - *Support to the aquarium trade* with a focus on developing a viable industry based on postlarval capture and culture (PCC);
 - *Support to aquaculture for domestic consumption* by working with WorldFish Center in Solomon Islands on an initiative for growing rabbit fish, while a study in Vanuatu aims to assess the effectiveness of restocking trochus and giant clams;
 - *Support to the protection of reef fish aggregations* in collaboration with SCRFA (Society for the Conservation of Reef Fish Aggregation) – a workshop will be funded in September in Fiji, as well as an awareness film meant for managers and decision-makers;
 - *Developing a tool to identify fish and marine animals of the Pacific* – this computer learning aid (LearnFishID) will help a wide audience (including fisheries officers, scientific divers, students, etc.) to identify reef fish;
 - *Studies on the economic effectiveness of marine protected areas (MPAs)* – building on information collected and analysed by the PROCFish programme, assessment studies of MPAs in Vanuatu and Solomon Islands will be great assets for assessment of MPAs as tools for sustainable reef fish management.

Future direction and challenges

Coastal Fisheries Programme

48. The Coastal Fisheries Programme starts 2010 with fewer staff and less funding than at any time in the last 10 years. While this presents some challenges in terms of service delivery, it is hoped that this will be the low point from which to build up a new work programme that is more in line with the changing priorities of members.
49. A clear priority for many PICTs, evident in the requests for assistance received by SPC, is for the development of practical management measures – particularly for export-oriented coastal fisheries – and the means to implement and monitor their effectiveness, with supporting facilities for handling the data. In some cases, legislation also needs to be developed. During 2009, the programme had difficulty responding to requests in this area, and relied on short-term consultants. The new Coastal Fisheries Science and Management Section, supported by technical assistance under the EDF10 SciCOFish project, is expected to help meet these requirements in the future.
50. Aquaculture development across the region – measured by production value – has been uneven, dominated by culture of pearls and prawns in the French territories. In the last five years, however, significant new aquaculture enterprises have emerged in a number of PICTs. These private sector investors are looking for a favourable legal and policy environment, and in many cases a government authority that can meet the certification requirements for export of their products. SPC assistance is likely to focus increasingly on helping member governments in these areas.
51. Small-scale aquaculture, mainly of freshwater species, has the potential to meet the demand for fish from growing populations and in inland areas. PICTs face considerable challenges in promoting its development, however, and there are important lessons to be learned from elsewhere in the world.

52. Development of domestic and locally-based fisheries remains a high priority in the aspirations of PICTs. Again the emphasis is on the private sector, at all scales of operation. There will be an increasing need to direct development efforts into fisheries that target sustainable resources, particularly skipjack tuna. The role of SPC in supporting national development efforts already requires many different skills, ranging from small-scale fishing techniques (including sport fishing) and FAD deployment to developing training courses for crew of large commercial vessels. Recent challenges, which the programme has not been well equipped to handle, include meeting the increasingly demanding standards and certification requirements for export markets.
53. In summary, issues with respect to the Coastal Fisheries Programme relate mainly to the definition of realistic and relevant goals and effective activities across a range of members with very different needs and capacities, specifically:
- the need to develop some simple monitoring programmes, databases, and effective management measures for key inshore fisheries;
 - the need to provide effective support to private sector fisheries enterprises in the areas where they most require help, including post-harvest and export market requirements;
 - the need to ensure that fisheries information products are relevant to, and reaching, the people who can use them;
 - opportunities for greater engagement with the private sector and other key stakeholders in aquaculture and other programme activities; and
 - limited capacity in the programme to deal with work in the legal and economic areas.

Oceanic Fisheries Programme

54. OFP is relatively well supported by project funding, although there are likely to be some gaps as current projects end. However, the programme's administrative staff are severely stretched by current arrangements.
55. The key issue for the region's oceanic fisheries for the coming years will remain the need to reduce overfishing of bigeye tuna, and to ensure that the more robust yellowfin resource is not also put at risk. By-catch of non-target species will also remain an issue. SPC's role is to provide the scientific advice on which to base management measures, and to monitor and evaluate their effectiveness. While overfishing – exceeding the fishing effort that provides maximum sustainable yield – represents the extreme case, it is likely that the region's tuna fisheries would be more profitable at lower catch levels. Bio-economic analysis to inform decision-making will be a priority.
56. Commitments to management action are made at three levels:
- (i) by WCPFC for the fishery as a whole, including the high seas; (ii) collectively by the FFA member states, particularly the eight FFA members that make up the Parties to the Nauru Agreement and from whose exclusive economic zones (EEZs) some 80% of the regional catch of surface tunas are harvested; and (iii) at a national level, to control fishing and particularly domestic fleets inside the EEZs of individual member countries, as well as implementing regionally agreed measures. SPC contributes the scientific advice to support management at all three levels. The Oceanic Fisheries Programme is already the scientific services provider for WCPFC, works closely with FFA, and devotes considerable resources to providing advice to members on an individual basis.

57. While WCPFC initiatives are important, and provide the best hope of management of the entire stock, the effectiveness of measures to conserve bigeye and yellowfin has been limited. The same applies, to some extent, to other regional measures – where it has also been difficult to agree on restricting fishing effort to the extent required. Nevertheless, many of these initiatives have been developed and pursued by the PICTs, supported by scientific advice provided at the national and regional level, and will be developed further. In many cases, national management plans can provide a more immediate option to improve the sustainability of the resource, particularly for countries concerned to ensure the viability of domestic and locally-based fleets and protect them from the impacts of localised depletion. Strengthening scientific advice and support to individual PICTs will be particularly important – both for national tuna management planning and the regional processes.
58. Work with FFA to improve the relevance of advice provided at the national level is already in progress, and it is expected that national tuna management plans will be developed and reviewed more promptly than has been the case in the past 3–4 years. At the same time, it will be necessary to communicate the issues at a regional level more effectively and continue with the development and analysis of management measures that will achieve the required results – without being made ineffective during the process of reaching agreement. There is considerable interest globally – both at the level of the tuna industry and by consumers – in sustainability. Properly informed this may help to drive changes that are proving hard to agree on at the government-to-government level.
59. In short, there are a number of areas that need to be pursued if scientific advice is really to be translated into the management action needed to conserve the region’s tuna resources. All of these require staff time and financial resources.
60. A more immediate problem will be to sustain the efforts that have gone into building up the regional observer programme. In 2009, 100 per cent coverage of purse-seine fleets was only required for a two-month period. From 2010 the effort will have to be sustained through the whole year, allowing for shore leave of observers. More observers will be needed, their placement will require more planning and coordination, and there will be more debriefing and data analysis required. At the same time, many of the ‘cadet observers’ trained to meet the immediate shortfall will be looking to improve their qualifications and skills.
61. Although fieldwork under the current tagging programme will wind down next year, there are plans for further tagging cruises. It will be important to keep up awareness of the need for tag returns, particularly for albacore and bigeye, which may be recovered in the longline fishery after several years. It will also be important to devote adequate resources to analysis of the results to answer key questions about stock dynamics and the impact of FADs.
62. More emphasis will also be needed on the development and effective use of national tuna databases, using the TUFMAN system developed by SPC. While it has now been introduced in most member countries, it is not being fully used in several cases and there seems to be a need for further training of data management staff. The system also has potential to be developed further to assist countries in managing monitoring control and surveillance activities and tracking down inconsistencies that point to illegal fishing.

CRISP

63. Most funding arrangements for CRISP will come to an end by 31 December 2010 (except for an additional EUR 500,000 grant which will be extended to 2012). Nevertheless, the programme is going to put the emphasis on the themes whose contents are currently being developed and that have the potential to continue through ACP or OCT EDF10 funding. Among these priority actions, are:

- ***Support to postlarvae capture and culture development in the Pacific region***
Additional funding from the Agence Française de Développement (AFD) will enable CRISP to support the development of alternate export channels for exotic fish, in particular implementing eco-labeling and export promotion in third countries, particularly the European Union.
- ***Support to Pacific region governance – marine protected areas***
CRISP is to co-finance with the French MPA Agency, through SPC and SPREP, a regional meeting on MPAs that will be held in French Polynesia 15–19 November 2009. Many participants from PICTs are expected to attend; they will be funded by CRISP. This meeting intends to set up a Pacific network of MPAs.
- ***Support for the development of marine resource management tools***
CRISP intends to support SPC in developing PROCFish data in order to meet the needs of PICTs regarding management of their reef resources. This should also take into account the vulnerability of key species such as sharks.

Capacity building in fisheries – A renewed emphasis

64. Capacity building and capacity supplementation form the major part of SPC's core business, and most of the Marine Resources Division's work is focused on these two areas. There are three important considerations:
 - the need to strike the right balance between capacity building (developing the capacity in PICTs to do the work) and capacity supplementation (essentially doing it for them);
 - the need to expand on current methods of capacity building – mainly short training courses and attachments – to meet the requirements of member countries and territories; and
 - the need to support initiatives to strengthen some national fisheries institutions – given the difficulties retaining key staff – to meet the growing complexity of the issues that they have to deal with.
65. While it is not feasible or efficient for the administrations of PICTs (particularly the smaller countries) to develop all the specialised expertise provided from SPC, there are areas in which direct assistance has been provided over many years and where national institutions should be able to take over. Examples include FAD deployment in coastal fisheries, and observer training for OFP. If it is really the case that a national fisheries department cannot retain the trained staff for FAD work, then consultants from neighbouring countries should be used for this work. Observer training in some of the larger PICTs is already moving toward courses delivered by national training colleges, with SPC taking on the supporting role of ensuring the quality of the training.
66. The entering of tuna fishery data, including the growing volume of observer reports, is another area in which national capacity must be developed – rather than the work mainly being done by SPC. Where countries lack the resources to fund the necessary positions, or are not able to ensure data quality, SPC should support and supervise positions in-country. This approach has been successful with observer/port sampling coordinators, and also helps meet SPC decentralisation objectives.
67. In the area of training, SPC's involvement with longer-term training programmes needs to expand. A number of initial steps have been taken. Short-term courses on tuna stock assessment and tuna fisheries data are being developed into an ongoing programme, with the same participants encouraged to attend each year. Additional learning resources are provided online; visiting OFP staff follow up with trainees when they visit their countries, and there are plans to have the programme accredited as a formal qualification.

68. SPC staff act as instructors in some medium-term courses, such as the Japan International Cooperation Agency (JICA) fisheries officers course in Okinawa; there may be scope to increase this role and enhance the relevance of other courses held both within and outside the region. The SPC Aquaculture Section also provides research opportunities for postgraduate students to work on relevant projects funded by the Australian Centre for International Agricultural Research (ACIAR). These students become the new recruits of fisheries departments and aquaculture businesses in the PICTs.
69. There is a need to see if SPC can help to strengthen undergraduate fisheries programmes provided by the University of the South Pacific (USP). SPC's Fisheries Officers Training Course, which was run for many years out of Nelson College, was to be absorbed into the programme, but this does not seem to have worked out. Specialist marine studies courses all seem likely to be hit by the university's financial cuts.
70. Working for SPC can be further developed as a capacity building exercise. Although there are ex-MRD staff in several key roles in national fisheries administrations today, the turnover of professional staff returning to serve their countries envisaged in the 'six-year rule' is not really happening. SPC is understandably keen to retain experienced Pacific Islanders on the staff unless better candidates apply for the job; and those who do leave are often looking for other regional or international posts. One solution would be to create a number of 'young professional' positions which would combine work experience with a clear career development role. These positions would target recent recruits to national institutions and pre-service graduates. They would be useful in areas such as stock assessment, where the job needs both postgraduate qualifications and relevant work experience.
71. Finally, there is a perception at the higher levels of PICT administrations and among donor partners that several national fisheries administrations require substantial institutional strengthening and reform. This is a reflection of not only the complexity of the issues that now face a fisheries department, but also some of the problems with staff training and development mentioned above, the limited resources devoted to fisheries by most governments and administrations, and issues that affect the performance of the whole public service.
72. There have been a number of institutional strengthening projects in recent years, with some good results; three are currently in progress. SPC has provided short-term inputs in support of some of this work, and is also often asked to assist with other studies – a training needs assessment for one fisheries administration was completed this year and a request for an institutional assessment is pending. Given SPC's knowledge of the region, range of skills and ability to provide support after the formal completion of an institutional strengthening project, this is an area in which MRD could contribute more.

Core business and funding requirements

73. Most of the services provided by MRD to member countries have been delivered over many years and are highly regarded by members. The demand for these services and assistance in new areas is increasing. With the exceptions identified above, there are not many areas in which services can be devolved outside the programmes that deliver them at present. The MRD programmes are typically promoting a standardised approach (inshore resource assessments), or dealing with a regional shared resource (tuna), or addressing international issues (WCPFC, biosecurity) that need a regional effort.
74. Core business of the Oceanic Fisheries Programme is identified as follows:

75. **Stock assessment** – This is fundamental to tuna fisheries management in the region. There is no capacity in PICTs, and it will take years of work through a dedicated programme to develop the capacity in larger countries (it will probably never be developed in the smaller ones). In any case, regional assessments will still need to be undertaken by a regional organisation. Without OFP capacity, WCPFC would have to rely on ad hoc work by large, and possibly biased, member countries; FFA and individual PICTs would have essentially no support. This whole section needs a sustainable funding source for the foreseeable future.
76. **Statistics and monitoring** – Data is essential for stock assessment, and OFP has a long history as the repository of regional tuna fisheries statistics. The current need to ramp up observer coverage is putting a lot of pressure on observer training. In the medium term there are good prospects of having more observer training and data entry done outside SPC, in which case a reduced role could be foreseen – consisting of quality control and oversight . Most of this section needs sustainable funding, but additional project resources are appropriate for immediate needs.
77. **Ecosystem analysis** – This section also provides important inputs for the stock assessment work, but needs more flexibility to respond to changing requirements. The main current initiative – the tagging programme – is a visible and popular activity that could usefully be continued but may be able to attract further project funding. The current structure, with one programme-funded position coordinating shorter-term donor inputs, is generally appropriate. Sustainable funding for a capability in fisheries oceanography is also needed, however.
78. Core business of the Coastal Fisheries Programme is as follows:
79. **Coastal fisheries science and management** – This section is formed by amalgamating the Reef Fisheries Observatory with the Coastal Fisheries Management Section, so that scientific advice feeds directly into management recommendations. This addresses a key need of member countries, and a growing problem across the region – inadequate management of coastal resources. Unfortunately, the capacity to provide scientific advice has all been funded by a project ending during 2009. This work will re-start with SciCOFish, but again for a limited period. There is a need to establish longer-term capacity in this area dealing with (i) development of coastal fisheries databases and (ii) advice on invertebrate (beche-de-mer, trochus) fisheries.
80. **Nearshore fisheries development** – This section provides highly valued services to member countries and territories in practical technical areas that promote development of sustainable nearshore fisheries. Training in fishing techniques for pelagic species (tuna) is central to the work. FAD deployment can mainly be devolved to national programmes. Capacity in training was lost during the year, and there will be a gap in support to national fishers associations due to the break between the first and second phases of the DevFish project. This section really needs additional operational funding, to allow the recruitment of short-term experts covering areas in which there is currently little expertise. Post-harvest work and economic analysis of fisheries development options are two areas in which there is a clear need for more work (identified in both the recent programme review and the previous one).
81. **Aquaculture** – This is a key area of potential for PICTs, with opportunities for economic growth and improved food security. Currently, programme funding supports work on aquaculture policy, trade issues and freshwater aquaculture development. There is an urgent need to identify funding to support work on mariculture, which offers the greatest potential in many PICTs. Biosecurity is another issue that has been raised as a concern on many occasions, but cannot be adequately addressed with existing resources.

82. The division will continue to seek funding for its work from a range of sources. Project funding remains crucial to achieve the objectives and results identified in the new strategic plan, though some opportunities for cost recovery and even commercial sponsorship are under consideration. Nevertheless, the gaps created in core service delivery by this reliance have been illustrated in 2009. An increase of 25 per cent in longer-term funding (core and programme) would put the division in a much better position to provide sustainable assistance to members.

Conclusions

83. The Marine Resources Division has generally been able to sustain services to member countries during 2009. Conditions are likely to be difficult in early 2010, particularly for the Coastal Fisheries Programme.
84. The division needs to increase its efforts to build capacity in PICTs and strengthen fisheries institutions.
85. An increase in longer-term funding of 25 per cent above the 2010 budget will be required to maintain and strengthen the delivery of MRD core functions in the future.

27 August 2009

ANNEXES

- Annex 1 – MAJOR COUNTRY ACTIVITIES for the period January 2009 to July 2009 (completed) and forecast for the remainder of the year
- Annex 2 – SIGNIFICANT REGIONAL MEETINGS/WORKSHOPS ORGANISED BY MRD IN 2009
- Annex 3 – PUBLICATIONS PRODUCED BY OR THROUGH THE MARINE RESOURCES DIVISION IN 2009

	<ul style="list-style-type: none"> • Follow-up assistance in the development of the marine aquarium trade database both for catch records and export records • Facilitating the third workshop on national reef fisheries management • Assistance with reviewing the live reef food fish management guidelines • Assistance to research the depredation issue for the local tuna longline industry • Assistance to the Tuna Fishing Associations through the funding of a joint executive officer • Assistance to Peace Corps to develop a fish size limit publication for Fiji • Assistance and supervisory support to four USP master's degree research projects • SPC workshop with Fisheries and USP staff for a revised Fijian tilapia training manual • Assistance with ongoing sea cucumber ranching trials in Savusavu • Field visits and advice to private sector coral and live-rock farm in Lautoka • Facilitated participation of two attendees in training on study methods for spawning aggregations • Facilitated participation of a fisheries officer in coastal fisheries stock assessment training in Iceland • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for two participants to attend the CITES and giant clam management workshop in Nadi • Funding for one participant to attend the regional workshop in New Caledonia on bycatch mitigation • Funding for one participant to attend the tilapia summit workshop at SPC Noumea 	
French Polynesia	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Processing of domestic longline observer and port sampling data • Support of national tuna database system • Operational support for observer and port sampling of domestic longliners • Attendance at Tuna Data Workshop • Attendance at Ecological Risk Assessment Workshop • Support to fisheries department for application to EU for EDF aquaculture proposals • Joint fisheries proposal for French Pacific Funds for Tahiti Aquaculture Conference 2010 approved • EC regulations amended to allow exemption to export live marine ornamental species to Europe • Funding for one participant to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for one participant to attend workshop on HIES • Funding for one participant to attend the regional workshop in New Caledonia on bycatch mitigation • Funding for one participant to attend the CITES and giant clam management workshop in Nadi 	
Guam	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop • Attendance at Ecological Risk Assessment Workshop • Sub-regional workshop held in Guam where the methods of implementing the ecosystem approach to coastal fisheries were introduced • Funding for one participant to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for one participant to attend the tilapia summit workshop at SPC Noumea 	
Kiribati	<ul style="list-style-type: none"> • NTFSR completed • Inputs to EAFM provided 	√ √
JCS:	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop 	√

	<ul style="list-style-type: none"> • Follow-up work with the resource survey report on the marine aquarium trade, with in-country development of management arrangements for this fishery • EC regulations amended to allow exemption for non-OIE members to export live marine ornamental species to Europe • Facilitation of a national workshop (12 participants) on implementing the ecosystem approach for community-based fisheries management • Assistance with the development of Fisheries Management Ordinance • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Partial funding for two participants to attend sub-regional workshop in Guam where the methods of implementing the ecosystem approach to coastal fisheries were introduced • Funding for one participant to attend the tilapia summit workshop at SPC Noumea • Funding for one participant to attend the regional Fisheries Officers Course in Santo, Vanuatu • Advice on RMI's sustainable FAD programme 	<p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p>
<p>Nauru</p> <p>JCS:</p> <p>2008–2010</p>	<ul style="list-style-type: none"> • NTFSR completed • Inputs to EAFM • Data summaries provided for access negotiations • Attendance at stock assessment capacity building workshop • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Processing of foreign licenced tuna fisheries data • Support of national tuna database system • Attendance at Tuna Data Workshop • Attendance at Ecological Risk Assessment Workshop • One national tuna database training session at SPC • Tuna tagging in Nauru waters (WP3) • Planning meetings held for DEVFISH-funding of an outboard motor repair and maintenance training with the tuna fishing association • Sea safety workshop to introduce sea safety grab bags in conjunction with Nauru Fishers' Association (NFA) and Nauru Fisheries and Marine Resources Authority (NFMRA), and to train NFMRA staff in how to use Argos small boat beacons; around 50 fishers and NFMRA staff attended the workshop • Assistance provided through the funding of an executive officer for the fishing association • Assistance provided with provision of office equipment for fishermen association • Funding for research student at USP working on whale depredation • Assistance in preparing funding proposals with regard to developing the aquarium industry • EC regulations amended to allow exemption for non-OIE members to export live marine ornamental species to Europe • Assistance with the review of the current community-based fisheries management programme • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for one participant to attend the regional Fisheries Officers Course in Santo, Vanuatu 	<p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p> <p>√</p>
<p>New Caledonia</p>	<ul style="list-style-type: none"> • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Processing of domestic longline observer and port sampling data • Operational support for observer and port sampling of domestic longliners • Advice to both the public and private sector with regard to the live reef food fish industry, the culture of appropriate local species, and their value on the international market 	

	<ul style="list-style-type: none"> • Experiments on FAD designs and deployment methodologies (2 FADs deployed) • Ongoing monitoring of the fish silage project in Lifou • Assistance with the development and publication of a booklet on the main sea bird species in New Caledonia • In-country assistance to scallop and lobster juvenile collection trials funded by ADECAL (Agence de Développement Economique de la Nouvelle-Calédonie) • Field visit with North Province officials for advice on farming of local freshwater prawn • Funding for one participant to attend the regional workshop in New Caledonia on bycatch mitigation • Funding for one participant to attend the CITES and giant clam management workshop in Nadi • Advice on scallop fishing development in North Province 	
New Zealand	<ul style="list-style-type: none"> • Assistance in undertaking observer and port sampling of NZ purse seiners • Analysis of tuna fishery impacts on seabirds in NZ waters • Tagging of albacore in NZ waters 	
Niue Draft JCS: 2009–2013	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Assistance with artisanal tuna catch monitoring • Processing of domestic and foreign licenced tuna fisheries data • Assistance with WCPFC data submission • Assistance with national tuna data coordination • Attendance at Tuna Data Workshop • Attendance at Ecological Risk Assessment Workshop • Assistance with funding of renovations of office space and provision of office equipment for fishermen's association • Assistance with trialling small-scale fish silage operations • Provision of logbooks from a completed FAD research project • EC regulations amended to allow exemption for non-OIE members to export live marine ornamental species to Europe • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Assistance with revision of tuna and billfish development plan • Planning of small-scale fisheries development and training initiatives 	 √ √
Northern Mariana Islands	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop • Attendance at Ecological Risk Assessment Workshop • JCS mission in May 2009 with stakeholder meetings and presentations to government officials and others on the findings of meetings with regard to marine resources • Planning meeting with Division of Fish and Wildlife staff for tuna fishery-related development assistance as part of the JCS matrix • Funding for participant to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Partial funding for two participants to attend the sub-regional workshop in Guam where the methods of implementing the ecosystem approach to coastal fisheries were introduced • Funding for one participant to attend the tilapia summit workshop at SPC Noumea • Funding for two participants to attend the EAF workshop in Guam • Participation in aquaculture trade study tour to Asia • Advice on shallow-water FADs • Provision of public awareness materials on sea safety and marine debris 	

<p>Palau</p>	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Processing of foreign licenced tuna fisheries data • Support of national tuna database system including one in-country visit • Attendance at Tuna Data Workshop • Operational support for observer and port sampling • Attendance at Ecological Risk Assessment Workshop • Tuna tagging in Palau waters (WP3) • JCS mission in March 2009 with stakeholder meetings and presentations to government officials and others on the findings of meetings with regard to marine resources • Advice and public awareness information on the live reef food fish industry • Assistance in sourcing marine shrimp for disease analysis at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) • EC regulations amended to allow exemption for non-OIE members to export live marine ornamental species to Europe • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for two participants to attend the CITES and giant clam management workshop in Nadi • Partial funding for two participants to attend the EAF workshop in Guam • Funding for one participant to attend the regional workshop in New Caledonia on bycatch mitigation 	<p>√ √ √</p>
<p>Papua New Guinea</p>	<ul style="list-style-type: none"> • Characterisation of the PNG purse-seine fishery • Attendance at stock assessment capacity building work • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Processing of domestic and foreign licenced tuna fisheries data • Assistance with WCPFC data submission • Attendance at Tuna Data Workshop • Provision of ad hoc tuna fishery data summaries for internal studies • Assistance in design and participation in PNG National Tuna Data Workshop • Training support at three observer training courses • Attendance at Ecological Risk Assessment Workshop • Tuna tagging in PNG waters (WP2, WP3) • Materials for the development of a PNG purse-seine operations training module for the National Fisheries College, Kavieng • Assistance with a training needs assessment for the fisheries sector • Follow-up work with the Fishing Industry Association as part of the DEVFISH project, with the focus on establishing a new office for the association and equipping it • Assistance to the Fishing Industry Association with the development of their website • Assistance with the funding of the executive officer for the Fishing Industry Association • In-country visit to PNG to advice on aquaculture ventures in Daru, Rabaul, Lae and visit new government mariculture research facility at Nago Island • Assistance in sourcing new project funds for spat collection (AUD 20,000) trial at Nago Island • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for two participants to attend the CITES and giant clam management workshop in Nadi • Funding for two participants to attend the regional workshop in New Caledonia on bycatch mitigation • Funding for one participant to attend the tilapia summit workshop at SPC Noumea 	

	<ul style="list-style-type: none"> • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting 	√
Vanuatu	<ul style="list-style-type: none"> • Attendance at stock assessment capacity building workshop • In-meeting support at WCPFC Scientific Committee and WCPFC Annual Session • Processing of domestic and foreign licenced tuna fisheries data • Support of national tuna database system (including two in-country visits) • Attendance at Tuna Data Workshop • One tuna statistics attachment with SPC in Noumea • Participation in sub-regional observer training workshop • One national observer training workshop • Training in port sampling for locally-based longline fleet • Attendance at Ecological Risk Assessment Workshop • In-country visit and assistance for the ongoing marine ornamental fish (<i>Amphiprion</i> spp.) hatchery trials in Vanuatu • Advice provided for an ongoing FAD programme in Vanuatu, including the bulk purchase of materials to reduce overall costs • Assistance and follow-up relating to the development of the live reef fisheries database • Assistance in setting up a new server and databases for coastal fisheries following the failure of the old system • Investigation into the escalating ciguatera fish poisoning problem affecting Emao Island, off the Northern coast of Efate, as part of a collaborative investigation with the Institute for Research and Development (IRD) and the Louis Malardé Institute (ILM) • Assisted in developing and produced two fisheries management plans (tuna and aquarium fish trade) for the Department of Fisheries • Assistance through the funding of an executive officer for the local fishermen's association • Assistance through the funding of office equipment for the fishermen's association • In-country visit to advise Department of Fisheries on proposed government facility in Efate and freshwater aquaculture opportunities in Santo • Master student research project initiated in Santo in advance of 2009 scholarship intake • Funding for two participants to attend training on study methods for spawning aggregations • Funding for two participants to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting • Funding for two participants to attend CITES and giant clam management workshop in Nadi • Funding for one participant to attend the tilapia summit workshop at SPC Noumea • Funding for two participants to attend the regional Fisheries Officers Course in Santo, Vanuatu • Participation in aquaculture trade study tour to Asia 	
Wallis and Futuna	<ul style="list-style-type: none"> • Attendance at Tuna Data Workshop 	√
	<ul style="list-style-type: none"> • Technical assistance with rigging and deployment of two FADs off Futuna and the demonstration of FAD fishing methods to local fishermen 	√
Draft JCS: 2009–2013	<ul style="list-style-type: none"> • SPC consultant held workshops in Wallis and Futuna Islands to formulate aquaculture strategy and identify links with French overseas territories 	√
	<ul style="list-style-type: none"> • Assistance in community-based fisheries management 	√
	<ul style="list-style-type: none"> • Study tour to New Caledonia shrimp industry and rabbit fish (Pico) cage trial organised 	√
	<ul style="list-style-type: none"> • Funding for one participant to attend the Sixth Heads of Fisheries meeting in Noumea and the final PROCFish/C and CoFish Advisory Committee meeting 	
	<ul style="list-style-type: none"> • Funding for one participant to attend the regional Fisheries Officers Course in Santo, Vanuatu 	√

**SIGNIFICANT REGIONAL MEETINGS / WORKSHOPS
ORGANISED BY MRD IN 2009**

Sixth Heads of Fisheries Meeting (10–13 February 2009) held in Noumea, New Caledonia

Sixth and final Advisory Committee meeting for the PROCFish/C project (9 February 2009) linked to the Heads of Fisheries meeting, held in Noumea, New Caledonia

Sub-regional meeting/workshop (North Pacific) on the ecosystem approach to management of coastal fisheries (30 March to 3 April 2009) held in Guam

Third Tuna Data Workshop held (22–25 June 2009) in Auckland, New Zealand

Sub-regional Observer course (13 July to 7 August) held in Santo, Vanuatu

Ecological risk Assessment and Stock Assessment Workshop (26 June to 4 July 2009) held in Auckland, New Zealand

Regional train-the-trainers course on bycatch mitigation (8–12 June 2009) held in New Caledonia

Regional workshop on regional management of sustainable fisheries for giant clams (Tridacnidae) and CITES capacity building workshop (4–7 August 2009) held in Nadi, Fiji Islands

Observer Coordinator Workshop (16–18 September) held in Noumea, New Caledonia

Regional Fisheries Officers Course (October 2009) on sea safety and fishing skills held in Santo, Vanuatu

Sub-regional Observer Course (12 October to 6 November) held in Suva, Fiji Islands

Special workshop to finalise the manual for the ecosystem approach to coastal fisheries management (9–13 November) held in Apia, Samoa (venue to be confirmed)

Regional summit on tilapia (December 2009) held in Noumea, New Caledonia

ANNEX 3

**PUBLICATIONS PRODUCED BY OR THROUGH THE MARINE RESOURCES DIVISION
IN 2009**

CFP Reports

- Awira, A., Friedman, K., Sauni, S., Kronen, M., Pinca, S., Chapman, L. and Magron, F. 2008. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Kiribati country report: Profiles and results from survey work at Abaiang, Abemama, Kuria and Kiritimati (May to November 2004). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Anonymous. 2009a. SPC Coastal and Oceanic Fisheries Programmes Digital Library. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Anonymous. 2009b. SPC Division of Fisheries, Aquaculture and Marine Ecosystems (FAME) – Strategic Plan 2010–2013. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Anonymous. 2009c. SPC Fisheries Address Book. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Beverly, S. 2009. Longline terminal gear identification guide. WCPOFC-SCI5 SWGFT-IP1. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Blanc, M. 2009. How to make fish silage. Noumea, New Caledonia: Secretariat of the Pacific Community.
- Friedman, K., Kronen, M., Pinca, S., Lasi, F., Pakoa, K., Awira, R., Boblin, P., Tardy, E., Chapman, L. and Magron, F. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Palau country report: Profiles and results from survey work at Ngarchelong, Ngatpang, Airai and Koror (April to June 2007). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Friedman, K., Kronen, M., Pinca, S., Magron, F., Boblin, P., Pakoa, K., Awira, R. and Chapman, L. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Papua New Guinea country report: Profiles and results from survey work at Andra, Tsoilaunung, Sideia and Panapompom (June to November 2006). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Friedman, K., Kronen, M., Vunisea, A., Pinca, S., Pakoa, K., Magron, F., Chapman, L., Sauni, S., Vigliola, L., Tardy, E. and Labrosse, P. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Fiji Islands country report: Profiles and results from survey work at Muaivuso, Dromuna, Mali and Lakeba (September to November 2002, April to June 2003, June and July 2007, and February 2009). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Friedman, K., Pakoa, K., Kronen, M., Chapman, L., Sauni, S., Vigliola, L., Boblin, P. and Magron, F. 2008. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Vanuatu country report: Profiles and results from survey work at Paunangisu village, Moso Island, Uri and Uripiv Islands and the Maskelyne Archipelago (July to December 2003). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Friedman, K., Pinca, S., Kronen, M., Boblin, P., Chapman, L., Magron, F., Vunisea, A. and Labrosse, P. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Tonga country report: Profiles and results from survey work at Ha'atafu, Manuka, Koulo and Lofanga (November and December 2001, March to June 2002, April to June, September and October 2008). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Kinch, J. and Teitelbaum, A. 2009. Proceedings of the sub-regional workshop for the marine ornamental trade on the Pacific (2 to 5 December 2008). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Kronen, M., Boblin, P., Friedman, K., Pinca, S., Magron, F., Awira, R., Pakoa, K., Lasi, F., Tardy, E., Vigliola, L. and Chapman, L. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), New Caledonia country report: Profiles and results from survey work at Ouasse, Thio, Luengoni, Oundjo and Moindou (March, April and November 2003; January,

- February, April, June, August and November 2004; April and may 2005; January to march 2006; and January and February 2007). Noumea, New Caledonia: Secretariat of the Pacific Community. Note: this report is also available in French.
- Kronen, M., Fisk, D., Pinca, S., Magron, F., Friedman, K., Boblin, P., Awira, R. and Chapman, L. 2008. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Niue country report: Profile and results from in-country survey work (May to June 2005). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Kronen, M., Friedman, K., Boblin, P., Chapman, L., Vunisea, A., Lasi, F., Awira, R., Pakoa, K., Magron, F., Tardy, E. and Pinca, S. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Federated States of Micronesia country report: Profiles and results from survey work at Yyin and Riiken (Yap) and Piis-Panewu and Romanum (Chuuk) (April–May 2006). Noumea, New Caledonia: Secretariat of the Pacific Community.
- Kronen, M., Friedman, K., Pinca, S., Chapman, L., Awira, R., Pakoa, K., Vigliola, L., Boblin, P. and Magron, F. 2009. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), French Polynesia country report: Profiles and results from survey work at Fakarava, Maatea, Mataiea, Raivavae and Tikehau (September–October 2003, January–March 2004, April–June 2006). Noumea, New Caledonia: Secretariat of the Pacific Community. Note: this report is also available in French.
- Kronen, M., Tardy, E., Boblin, P., Chapman, L., Lasi, F., Pakoa, K., Vigliola, L., Friedman, K., Magron, F. and Pinca, S. 2008. Pacific Regional Oceanic and Coastal Fisheries Development Project (PROCFish/C and CoFish), Wallis and Futuna country report: Profiles and results from survey work at Vailala, Halalo, Leava and Vele (August–December 2005 and March 2006). Noumea, New Caledonia: Secretariat of the Pacific Community. Note: this report is also available in French.
- Pakoa, K., Friedman, K., Tardy, E. and Lasi, F. 2009. Epi Island trochus and sea cucumber resource status and recommendations for management. PROCFish/C and CoFish report to the Vanuatu Department of Fisheries. Noumea, New Caledonia: Secretariat of the Pacific Community.
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