

■ REEF FISHERIES OBSERVATORY

End of an era — PROCFish coastal and CoFish projects come to an end

The coastal component of the Pacific Regional Oceanic and Coastal Fisheries Development project (PROCFish/C) began in March 2002, funded by the European Union through the eighth European Development Fund (EDF). The project covered the eight African, Caribbean and Pacific (ACP) countries in the Pacific (Fiji, Kiribati, Papua New Guinea, Vanuatu, Samoa, Solomon Islands, Tonga and Tuvalu) and the three French Overseas Territories in the Pacific (French Polynesia, New Caledonia, and Wallis and Futuna). The project's aim was to provide Pacific Island ACP governments and community leaders with the basic information necessary to identify and alleviate critical problems that prevent the better management and governance of reef fisheries, and plan appropriate future development.

Two years later, in May 2004, a sister project was agreed on and started under the European Union's ninth EDF funding, the Pacific Regional Coastal Fisheries Development project (CoFish). The project covered six new Pacific ACP countries (Cook Islands, Federated States of Micronesia, Marshall Islands, Nauru, Niue and Palau) and had exactly the same objectives and aims as the PROCFish/C project. The joint projects were designed to implement the first ever comprehensive multi-country comparative assessment of reef fisheries (including resource and human components) in the Pacific Islands region, using identical methodologies at each site in order to:

- provide a baseline and help fill the massive information gap hindering the effective management of reef fisheries;
- improve information linkages between intergovernmental and governmental institutions and small-island community processes;
- provide methodological training and, by working directly with Pacific Islanders, foster the development of management plans and policies;
- ensure that information reaches the appropriate targets through local workshops and national and regional colloquia; and
- generate a large body of published information for permanent reference.

The expected outputs from the projects were:

- a first ever region-wide comparative assessment of the status of reef fisheries using standardised methodology;
- application and dissemination of results in country reports comprising a set of "coastal fishery resource profiles" for sites in each country in order to provide information for coastal fisheries development and management planning;
- a set of indicators/proxies, or fishery status reference points, for use as guidance when developing local and national reef fishery management plans and monitoring programs;
- toolkits (manuals, software and training programmes) for assessing and monitoring reef fisheries and increased capacity in using standardised survey methodologies across fisheries departments in participating countries;
- data/Information management systems – regional and national databases; and

although not specified but proposed, follow-up projects that use this information to address specific challenges commonly experienced by fisheries departments and target communities, thereby working towards improving resource management in the region.

To achieve project outputs over a period of almost eight years¹, a comparative analysis of reef fisheries in 17 Pacific Island countries and territories was carried out using standardised survey methodologies. These methodologies included commercial finfish species through underwater visual census (UVC) surveys (Fig. 1), and invertebrate resource surveys using a range of methodologies (Fig. 2), some of which were species specific. In addition to in-water surveys, socioeconomic surveys of coastal communities involved in both subsistence and commercial harvesting of finfish and invertebrates in the surveyed areas were conducted (Fig. 3). Table 1 summarises the countries surveyed and the approximate timing of the survey work.

In total, 63 sites were surveyed in 17 participating countries and territories. In the cases of Niue and Nauru, the whole country was surveyed as a single site. A report was produced for each country and territory, summarising the results of the finfish and invertebrate resource surveys, and socioeconomic surveys for each site. A single set of resource management recommendations was also included in the report for each site. For many of the participating countries and territories, the PROCFish/C and CoFish survey data are the only data available, and so these can

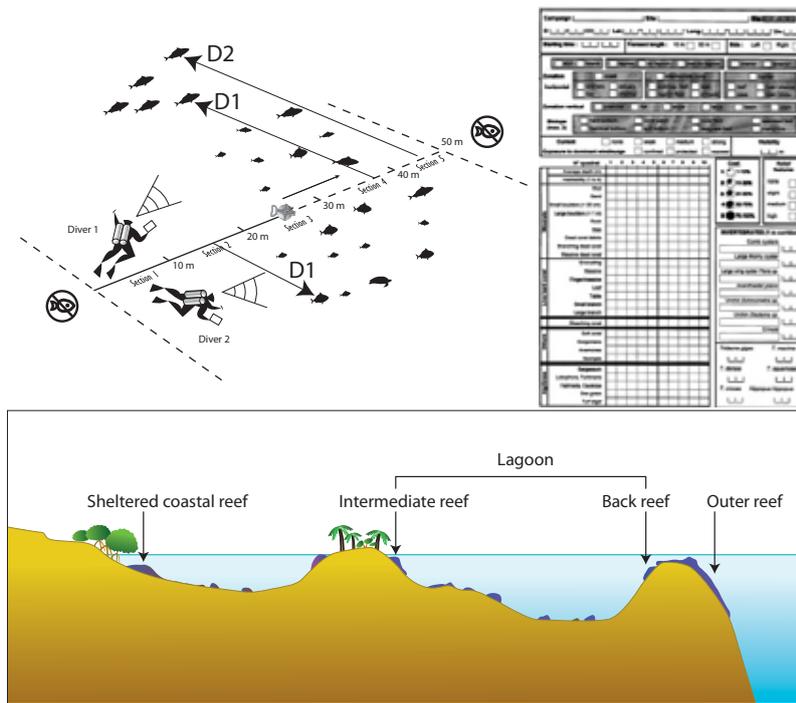


Figure 1. Assessment of finfish resources and associated environments using distance-sampling underwater visual censuses.

Each diver recorded the number of fish, fish size, distance of fish from the transect line, habitat quality, using pre-printed underwater paper. At each site, surveys were conducted along 24 transects, with six transects in each of the four main geomorphologic coral reef structures: sheltered coastal reefs, intermediate reefs and back-reefs (both within the grouped "lagoon reef" category used in the socioeconomic assessment) and outer reefs.

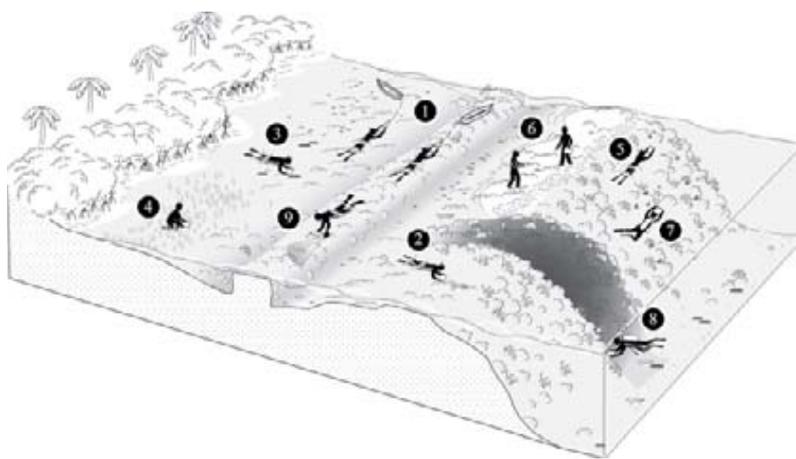


Figure 2. Assessment of invertebrate resources and associated environments.

Techniques used include: broad-scale assessments to record large sedentary invertebrates (1); fine-scale assessments to record epibenthic resources and potential indicator species (2) and (3); quadrats to count targeted infaunal molluscs (4); searches to determine trochus and beche-de-mer aggregations in the surf zone (5), reef edge (6) and using scuba (7); and deep dives to assess deep-water sea cucumber populations (8).

be considered as baseline data for future surveys or assessments to identify changes in stock status.

In addition to the standardised surveys, eight specific surveys were undertaken at the requests of governments on certain species that needed scientific assessment for management purposes. These surveys focused mainly on commercial invertebrate species such as trochus and beche-de-mer and were conducted in the Federated States of Micronesia (Kosrae, Pohnpei and Yap), Palau, Samoa, Tonga and Vanuatu, where there was concern regarding exploitation, or where the government wanted to open the fishery. In the case of Cook Islands, the survey focused on parrotfish at Palmerston Atoll where there has been a long history of commercial harvesting.

The PROCFish/C information system (Fig. 4) was built around a central database containing three bodies of data: data collected by the PROCFish/C team during site surveys, external data used for analysis and calculations (for example biological data), and a document repository with reports and unstructured data. Software modules allow data entry, query and analysis by the PROCFish/C team, and attachments and can be used either to access the central database or a stand-alone database installed with the software. Each country and territory has been provided with a copy of the information system with their specific data, so additional data collected at the national level can be included and analysed.

During the course of the projects, two manuals were produced and published with two others drafted. A manual on

Table 1. Countries and territories surveyed by the PROCFish/C and CoFish projects with approximate timing and number of sites surveyed.

Country/territory	Approximate timing of fieldwork/surveys	Number of sites surveyed
Tonga*	November and December 2001, March to June 2002; re-survey April to June, September and October 2008	6 re-surveyed 4
Fiji Islands*	September to November 2002, April to June 2003; re-survey June and July 2007, and February 2009	6 re-surveyed 4
New Caledonia**	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	5
Vanuatu	July to December 2003	4
French Polynesia	September to October 2003, January to March 2004; and May to June 2006	5
Kiribati	May to November 2004	4
Tuvalu	October to November 2004, and March to April 2005	4
Niue	May and June 2005	1 (country)
Samoa	June 2005 and August/September 2005	4
Nauru	October and November 2005	1 (country)
Wallis and Futuna	August to December 2005 and March 2006	3
Federated States of Micronesia	April and May 2006	4
Papua New Guinea	June to November 2006	4
Solomon Islands	June to September 2006 and December 2006	4
Cook Islands	February and October 2007	4
Palau	April to June 2007	4
Marshall Islands	August and September 2007	4

* Tonga and Fiji were initially surveyed under the “joint application of demography and ecology in evaluating the role of coastal fisheries resources in the Pacific Islands — DemEcoFish project”, then re-surveyed under PROCFish/C

** Because New Caledonia was the home base for project staff, surveys were conducted when time permitted between survey work in other countries.

UVC finfish survey methodologies was one of the first outputs of the project, although as the survey methodologies were refined, some parts of the manual became obsolete, including some of the analysis formulae. This manual has been redrafted to take account of the changes as well as simplifying the methodology so that a monitoring regime can be established in-country based on the techniques described. This manual will be finalised under the EU project “Scientific support for the management of coastal and oceanic fisheries in the Pacific Islands region (SciCOFish)”, which is

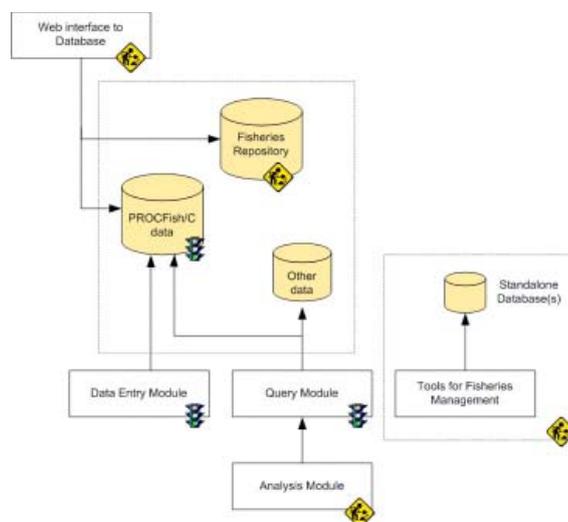


Figure 4. The PROCFish/C and CoFish information management system.

scheduled to start in 2010. The other draft manual covers survey methodologies for invertebrate species using a mix of approaches. This manual will also be finalised and printed under the SciCOFish project, which will focus on assisting Pacific Island countries with setting up and running monitoring finfish and invertebrate programmes.

The final manual produced by the PROCFish/C and CoFish projects focuses on a proposed method to plan, conduct and use socioeconomic fisheries surveys in Pacific Island countries and territories to help communities and managers to improve reef fisheries management. The manual is mainly aimed at fisheries officers and staff engaged in governmental and non-governmental organisations and institutions, and is complemented by software called SEMCoS. Both the manual and the software follow the same structure and make the link between the manual, data entry and data retrieval. A series of three sub-

regional workshops were held in 2007 and 2008 to train staff members from each of the 17 participating countries in the methodologies and analysis covered in the manual.

Capacity building was a main component of the projects, and this was provided through the hiring an attachment for six months in some countries to assist with project implementation, or several attachments for shorter periods. During the surveys themselves, counterpart officers from fisheries departments and other organisations were trained in how to conduct finfish, invertebrate and socioeconomic surveys. A series of three sub-regional workshops was conducted in 2008 covering the UVC methodologies used by the project, with two fisheries staff per country trained over a 10-day period. Many workshop participants were also involved in the in-country survey work, so this was more of a refresher training for those fisheries officers.

The final component of the projects is the production of a report covering the regional assessment across the 63 sites in the 17 participating countries and territories, which also included the identification of indicators on reef fisheries status. Most of the data analysis has been completed and some sections of the report drafted, with the regional report to be finalised and released in early 2010. Some of the interesting points coming out of the regional assessment include the very low stock levels in most countries across the region for the commercial invertebrate species, sea cucumbers and trochus. There are some exceptions, such as French Polynesia and some sites in Palau and Cook Islands, and some countries now have management arrangements in place to try to rebuild stocks in the future. Small fish size is another concerning factor coming out of the data analysis, with over 65% of the total fish recorded being 20 cm in length or less.



Harvey Renguul (on the right), PROCFish local counterpart in Palau, conducting a finfish survey.

Farewell to the last of the PROCFish/C and CoFish staff

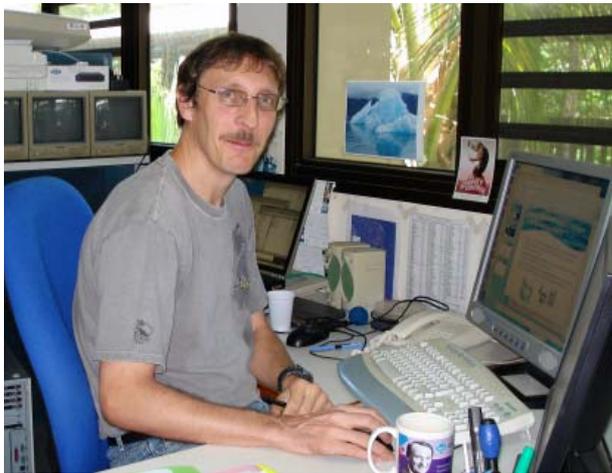
Mecki Kronen (Community Fisheries Scientist) and Franck Magron (Reef Fisheries Information Manager) who have been with the project from the start in March 2002, both finished with the project in October. However, Mecki stayed on at her own expense to finalise the write-up of the socioeconomic component of the regional assessment. Mecki will be starting a new position as Project Officer with the European Union office in New Caledonia in 2010, and we wish her well with her new position. Franck will stay with SPC in a different capacity as he will be the coordinator of a project on "Monitoring the vulnerability and adaptation of coastal fisheries to climate change" that is being funded from Australia's

International Climate Change Adaptation Initiative.

The Project Administrator for the project, Marie-Therese Bui, has also been with the project since the start and she will assist with the final auditing of project accounts in early 2010. Marie-Therese will also remain at SPC, now being the Project Administrator for the Fisheries Science and Management Section of the Coastal Fisheries Programme. The Technical Support Officer, Céline Barre, has been with the project since April 2008, working on the formatting and layout of the 17 country reports. Céline finished in December, and is currently looking for a job and would like to stay in the region and work.

On behalf of all of the staff that have worked on the

PROCFish/C and CoFish projects over the years, SPC would like to acknowledge with thanks the funding support of the European Union, and the collaborative support of the staff from the fisheries departments or fisheries services, environment or conservation departments, other scientific institutions, and parts of the private sector in the 17 participating Pacific Island countries and territories where fieldwork was undertaken. Special thanks is also given to the chiefs, elders, mayors, community groups and community members across the 63 sites that were surveyed, for without their cooperation, support and assistance of these groups, the project would not have been as successful as it has.



Franck Magron
former Reef Fisheries
Information Manager.



Mecki Kronen
former
Community Fisheries Scientist.



Céline Barre
former Technical Support Officer.