

**Report of a  
South Pacific fisheries study tour to  
Papua New Guinea, Vanuatu and Samoa  
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Led by the  
Commonwealth Policy Studies Unit  
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## I INTRODUCTION

This is the report of an intensive two week study tour in three Pacific Island countries, designed to share experience in the innovative sustainable management of marine fish stocks. The study team included two community leaders each from Papua New Guinea (PNG), Vanuatu and Samoa, accompanied by one person from the Commonwealth Policy Studies Unit (CPSU), University of London, a senior regional academic nominated by the Commonwealth Human Ecology Council (CHEC), and a Commonwealth Foundation consultant organiser. Tour members and tour activities are listed in Annex A and B.

This study tour forms part of a wider Commonwealth Fisheries Programme (2008-2010). The Programme is a partnership between CPSU, the Commonwealth Foundation (an intergovernmental entity tasked to support civil society) and CHEC (a nongovernmental body concerned with the environment). It is funded by the UK Department for International Development, and Australia's AUSAID in the Pacific. It includes case studies, meetings, a publication series, and a report to Commonwealth leaders in Trinidad and Tobago in November 2009. There are two parallel study tours in the Indian Ocean and the Caribbean.

Behind the programme lies the special Commonwealth geographical interest in the state of oceanic and inshore fish stocks, widespread international concern about their decline with over-fishing, impacts on protein intakes especially in developing countries, and the economic consequences especially for coastal communities. The Programme aims to raise Commonwealth awareness to: help stem the decline in stocks; promote sustainable management strategies; and support the long-term viability of traditional coastal fishing communities.

The purpose of the tours is therefore, within a limited time-frame, to study innovative approaches to optimising sustainable returns from fisheries, while examining any obstacles they face; and to report on any policy adaptations that may be needed, given the significance of marine fisheries for coastal communities in particular. In a small way, this work builds capacity and a broader regional awareness among selected participants, and hints at future capacity-building measures.

This report highlights the approaches seen, obstacles observed and the outcomes of discussions between Pacific tour participants on strategies for moving forward. The visits were necessarily brief, typically to two locations in each nation. The issues and initiatives presented therefore represent a limited snapshot of all that is happening in a country. Tour findings will be consolidated with another piece of work, a case study undertaken by CHEC in Fiji, in a late 2009 report to Commonwealth leaders.

## II KEY LESSONS LEARNT IN EACH COUNTRY

The nearshore<sup>1</sup> fisheries of all three countries are overexploited. In many areas large shellfish such as giant clams and trochus are locally extinct, and large fish are now commercially extinct in the nearshore.

In the Pacific, enhancing nearshore fisheries is all about supporting day-to-day subsistence. However fishing has a different relevance for different communities. Some coastal peoples are traditionally skilled gardeners, others rely heavily on fishing. Fishing's importance can also lessen following resource degradation and urbanisation.

### A Papua New Guinea

#### *i Governance*

The PNG National Fisheries Authority (NFA) collects some US\$22-29 million a year ( Kina 60 million to 80 million ) in tuna licence fees, according to a representative of the agency. Approximately a quarter of this income is invested in fisheries management and development-related projects. The NFA also fully funds the National Fisheries College, which trains 6-700 people a year in subjects related to fisheries and marine resources. NFA's focus is export revenue and tuna, rather than local supply, provincial distribution and the nearshore.

There are 19 provincial administrations in PNG. Despite adequate resourcing of provincial fisheries units, there appears to be limited enforcement of fisheries laws and regulations. Instead, in some instances, communities are taking action themselves with the support and facilitation of non-government organisations (NGOs). The New Ireland provincial planner we spoke to demonstrated his willingness to bridge the information gap between provincial government and NGOs, but no provincial fisheries plan is yet in place, although a comprehensive management and development strategy was prepared by NFA in 2005-6. An amendment to national fisheries legislation to recognise community fisheries rules remains stalled. NFA support for community-based fisheries management was strong under an ADB partnership project from 2004-7, but has since suffered from a lack of focus.

#### *ii Training*

PNG's National Fisheries College ( NFC ) functions as a division of the National Fisheries Authority. This is a unique situation in the Pacific region. The NFC, soon to become the Institute for Sustainable Marine Resources, caters for both commercial and community fisheries, with a range of courses and programmes both on site at Kavieng, and in rural locations throughout the country. It also runs observer training programmes (as part of a regional observer scheme on offshore tuna boats) at the college. Not long ago, PNG took an ADB loan to build community-based fisheries management for the provinces, and build capacity.

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<sup>1</sup> The term nearshore is used to describe areas within reach of subsistence fishers, and includes but extends beyond inshore lagoons and fringing reefs.

### *iii Nearshore fisheries ecological status*

The Wildlife Conservation Society (WCS) in Kavieng advised that reef fishing is only sustainable at low levels of harvest, or under well designed and enforced management. They advise that numbers are significantly lower around urban areas and effort to catch is perceived to be greater than it was 20 years ago in the villages, but people still catch plenty of fish. WCS said that targeted stocks such as groupers and snappers are impacted, with a shift to herbivorous fish in some places, but still relatively healthy on a global scale.

Coastal discharges are an issue in PNG. With inadequate district planning and local awareness, human waste, industrial (including mining) outflows and cash crop pesticides are discharged into areas protected for enhanced fisheries.

### *iv Community-based area management*

We saw evidence, in both Northern New Ireland and Madang, of a recovery of reef fish stocks where management systems banned or reduced fishing in particular places. After nine years of managed taboos at Belefu, five fingers (abundant in a committee member's youth) are coming back. Patience is key: to treat the sea like a garden and leave it to grow. Belefu village elders were excited about the sea cucumbers they could harvest in future.

Funding from donors (Asian Development Bank (ADB) and AusAID) and international conservation NGOs (WCS, TNC and WWF) supports community-based marine protected areas (MPAs) to restore resources. In Kavieng at least, national funding for fisheries does not trickle down past provincial fisheries officers, who appear well resourced but to do very little, an impression supported by discussions with the provincial planner. A proportion of surfer use levies make their way back into community projects, and the NFA has provided office space and other facilities for three NGOs. The Niu Ailan Surf Alliance works closely with Ailan Awareness to ensure that the collection of surf fees for surf management plans is returned to communities living adjacent to local surf breaks. This relationship is fostering marine conservation by the communities.

Requests from communities for help to establish MPAs to the NGOs Ailan Awareness and WCS exceed their financial capacity to respond. In engaging with communities, both NGOs emphasised a process that fosters community problem identification and ownership. It was clear from our New Ireland field visits that local NGOs or government staff can be invaluable as facilitators of the processes of solution generation, committee establishment and management plan drafting.

In PNG we observed that if MPAs are built solely around one person's energy, and they leave or the funding stops, arrangements risk collapse. Ailan Awareness' work in local committees, including the appointment of people with energy and open to new ideas from a cross section of community life (youth, women, chiefs, untitled men) seemed positive in this regard. On Krangket Island, Madang, we were impressed that fisheries issues were fully integrated into regular village discussions and decision making.

#### *v Commercial nearshore fisheries*

Where surveys reveal the inshore resource will sustain a commercial fishery, cooperatives can be fostered to boost the collective negotiating power of local fishers. The EU-funded Rural Coastal Fisheries Development Project has sought to create a fisherman's association in New Ireland. In Madang the community itself is looking to nurture a new association.

WCS advised that in Kavieng women sell a lot of fish, shellfish and mangrove crabs at the market. Several times a week groups of local fishermen set up roadside stalls. Local reef fish are still quite cheap, though prices steadily increase. Large mackerel can be expensive. Local fishers also sell to fish and chip bars, resorts and to the NFA-owned seafood processing facility (built with AusAid funds and leased to a national company). Catches may often contain small fish, though there are very few species size limits for fish. A covered facility intended as a fish market stands half built in Kavieng - an EU project failure. In Madang, there are complaints about a lack of market fish, but we saw locals selling fish under trees and fish pens, funded by the same European Commission project as in Kavieng, lying unused.

WCS explained that the EU project supplied Kavieng fishermen with small boats for snapper fishing, but with unrealistic loan repayment expectations. Some of these loans have now been paid off, and several have been taken over by the locally-owned firm that leases the processing plant, with fishers sent out to fish reef fish. There are some claims of poaching from areas not local to them. An attempt to establish small tuna longlining operations in Kavieng was initiated in 2004, but abandoned in 2006. The ADB project exit strategy, which included money for Ailan Awareness' community-based management outreach, has only been partly implemented to date.

There are potential problems in the overlap between small-scale artisanal fisheries and the industrial tuna fishery ( see below ). For example, the artisanal vessels share the same fishing grounds as the smaller tuna "pump" boats that supply tuna to the local canneries.

#### *vi Tuna processing*

The Madang Lagoon Association is campaigning against the adjoining Chinese-backed Ramu nickel and cobalt refinery, reports a fall in artisanal tuna catches and is concerned about a major tuna processing project proposed for Madang. Lagoon inhabitants themselves, however, maintain over-water toilets and tolerate plastic in the bay.

There is a current PNG Government proposal to establish a Pacific Maritime Industrial Zone ( PMIZ ) in Madang. This is also strongly supported by an established local cannery operator, RD Tuna. The PMIZ would provide a processing and servicing hub for tuna, especially for parties to two fisheries agreements – the Palau Arrangement for the Management of the Western Pacific Purse Seine Fishery and the Nauru Agreement Concerning Cooperation in the Management of Fisheries of Common Interest. Pacific island parties to the agreements are being asked to process all tuna caught in their exclusive economic zones (EEZs) in Madang. The aim is to counter the traditional power of the Deep Water Fishing Nations, especially in regard to fisheries management decisions by the Western and Central Pacific Fisheries Commission. The ambition is huge – to create an Organisation of Tuna Exporting

Countries to control 68 per cent of world tuna. PNG alone currently supplies 12 per cent. Environmentalists are concerned that tuna is being overfished, particularly because juveniles are being caught in the Bismarck Sea spawning grounds. A government awareness programme is trying to win community support for the PMIZ. Local people complain that the RD Tuna processing plant in Madang has never taken an annual 50 tons of artisanal tuna, that it had promised, though some observers believe that the real problem is one of inadequate supply.

#### *vii Awareness*

The Christian religion is very important throughout the Pacific. It brings a community together, acts as an underpinning value system, and speaks of stewardship. Linking conservation to the word of God has proved very effective in Ailan Awareness' work in PNG.

#### **Summary of approaches seen in Papua New Guinea**

- Dedicated government-funded fisheries college to train young people to be fishers, fish processors and community-based management facilitators.
- Enable the community to come up with their own answers to overfishing through participatory processes run over 6 months to a year. Features include
  - using professional facilitators;
  - establishing structures (eg. committees to lead work, and management plans) to foster ownership and provide both a forum for agreement and a mechanism for delivery;
  - involving people with heart leadership.
- Strengthen thinking about future generations and resource sustainability by
  - training teachers to teach children about the value of marine resources;
  - training youth to monitor species and areas;
  - linking conservation to the word of God and church activities.
- Foster food alternatives (eg. poultry), cash income alternatives (eg. cacao or vanilla growing, surfer levies).
- Local fishermen's cooperatives to enhance negotiating power with government and industry.
- Regional observer scheme on tuna boats.

## **B Vanuatu**

### *i Governance*

In Vanuatu, the government has limited influence in areas distant from Port Vila. Its small fisheries department can make little headway in this country of 63 widespread inhabited islands, where 80% of the population lives rurally. There is very limited financial or human resource capacity in government to support community fisheries.

Customary systems of governance in rural communities remain fundamental, though are weakening in some areas. Chiefs are often still more powerful than provincial

government. Small amounts of donor funding and NGO-facilitated community-based management planning are supporting pilot nearshore fisheries restoration projects.

The Fisheries Department advised that Vanuatu gets 150-200 million Vatu (US \$1.4-1.8 million) a year in tuna licence fees, which go into central treasury. The study tour team was unable to ascertain the value of near-shore, subsistence catches. The Department itself relies on donor-funds to supply fish aggregating devices (FADs) and ice making machines to communities. There are plans to filter a portion of tuna income through the department to support commercial take by rural fishers, who must form an association to access funds.

#### *ii Government engagement in nearshore fisheries*

The department is usefully fostering mariculture of locally extinct high value species eg. giant clams, trochus and giant snail close to Vila. It has banned subsistence take of green snail. The department is also trying to foster an aquarium supply trade. Our team member John Ronneth advised that this is only going to further drain near-empty reefs, unless sourced from mariculture projects. The department is culturing clams for villages to supply aquaria.

#### *iii Community-based marine protected areas*

Donor support, targeted to specific no-take MPAs and filtered through local NGOs or the Foundation for the South Pacific (FSP), is leading to some resource renewal. The mangrove arms of Krab Bay, Malakula were protected in 1980, with a collection zone in the middle. But crabs, the main source of protein for 5,000 residents, continued to decline because of poor understanding and compliance. The situation has improved after 2003 International Waters Project-funded participatory situational analysis, home trainings, and training for officials on mangrove-types and surveying. The involvement of women was critical. Only crabs 4 fingers wide or more are taken in the collection zone. The result is that locals know the resource's value and benefit from enhanced consumption through overspill from no-take into take zones. Any resident can report a breach of area or size protection, and receive 1000 Vatu from the offender's 5000 Vatu fine. A management committee takes decisions with traditional chiefs, arranges surveys. They hope to develop ecotourism to fund ongoing management and research.

FSP noted that often communities are divided on issues and solutions, so it can take up to two years to get to an agreed plan of action. FSP advised that rebuild rates are slow even in no-take zones, and there is a need to limit fish and net sizes in areas surrounding MPAs. FSP reported that large MPAs owned by multiple landowners are less susceptible to conflicts of interest.

#### *iv A local level umbrella organisation*

The Nguna-Pele MPA is an umbrella of 8 no-take village MPAs and supplementary conservation measures. It has grown from four to 14 villages since 2003. Its goals are halting overharvest, addressing pollution and waste management, and protecting natural resources. Each village has an MPA committee. They implement actions at different speeds, and enforce rules slightly differently. The Unakap MPA for example is a management scheme which has three layers: a permanent conservation area where snorkelling is allowed, a preservation area or tabu area with no snorkelling, and a take

zone (with green snail, trochus, clam shell and sea cucumber prohibited). Unakap now has a guesthouse and takes tourists on snorkelling trips.

The Nguna-Pele MPA has a National Geographic-funded research station (established for \$US 4-5,000 ) at its core, which attracts professional Peace Corps volunteer support. By introducing a taxi boat service the organisation has established significant income, cut travel costs for local people, and hired three paid staff. They work on tourism and conservation projects with villages. Simple solar technology installation has enabled the research station to link with collaborators. The MPA is now linking up with regional programmes such as the Locally Managed Marine Area (LMMA) network and Oceanswatch, who provide training, networking and support.

#### *v Awareness raising*

The Nguna-Pele MPA has a memorandum of understanding with the fisheries department to provide posters and Reef Check time, and partners with Wan Smolbag (“one small bag”) theatre company on environmental camps and village clean ups. It has worked directly with villages to stop D-cell dumping on reefs, and to implement a rechargeable battery project.

Reef Check is a positive government-supported initiative, where villagers are trained to do reef transects to check fish and coral condition. Reef Check staff said its main benefit is encouraging its mainly young audience to look at reefs in a different way. Irregular surveying by volunteers with different indicators in different places means Reef Check is unable to track trends; frequently the check is a one-off.

Wan Smolbag have been very influential in persuading Vanuatu citizens to care for turtles and other marine creatures. They tour villages canvassing environmental and social issues, providing employment for young people. They are expanding, and are supported by the Australian government and other NGOs.

#### *vi Offshore tuna*

Vanuatu is licensing foreign flagged vessels to exploit its tuna resources. The fish are landed elsewhere (mainly in Fiji and PNG). There are question marks over the real size of the tuna resource in this part of the Pacific. The Fisheries Department reported that only 9000 tons of an ‘allowable catch’ of 18,000 tons is currently being taken in Vanuatu’s EEZ. It is difficult for Vanuatu, with its modest resources, to monitor the activities of all its licensed vessels. Like other smaller Pacific island countries, the revenue from foreign vessels can seem more significant than the management and enhancement of coastal fisheries.

Vanuatu’s ‘B-grade’ skipjack tuna is processed principally in PNG and American Samoa. There is major controversy over a proposed Chinese tuna processing plant close to Port Vila, with tourist interests and environmental NGOs in a coalition of opposition. The idea is to process and fly A-grade tuna (yellow fin and big eye) direct to Japan for the sashimi trade.

Vanuatu’s large EEZ is vulnerable to IUU fishing. It has one patrol boat supplied by Australia under a defence agreement, and irregular flyovers by Australian, New Zealand and French Air Force planes. The Australian High Commission reported that increased flyovers are acting as a deterrent to illegal operators.

### **Summary of approaches seen in Vanuatu**

- Theatre-education village tours on environmental and social issues.
- Reef Check: awareness-raising through training monitors.
- Trained facilitators run participatory situational analysis with key community members, and training in homes to raise awareness and build buy-in for taboo areas.
- Bans or temporary taboos on subsistence take for species at risk of local or national extinction.
- Size limits on harvest species.
- Community driven no-take MPAs, paralleled by ongoing local fund generation.
- Enable all residents to enforce protection schemes – with a fee paid out of an offender’s fine.
- An umbrella organisation to support neighbouring villages’ restoration and integrated land-sea management efforts, liase with collaborators, and lead fund raising efforts.
- Link conservation fundraising to church activities, donating a proportion of money raised.
- Simple solar technologies support internet access to regional collaborators.
- Mariculture of high value locally extinct species.
- Culturing clams for communities to raise for aquarium supply trade.
- A portion of tuna income to go to fisheries department to support commercial take by rural fishers.
- FAD and icemaking machine deployment.
- EEZ flyovers.

## **C Samoa**

### *i Collaboration*

In Samoa, strong community spirit and traditional village governance systems prevail. Substantial donor funds have been made available. This coupled with trust between government departments, NGO staff and community chiefs has led to the success of inshore fisheries restoration partnerships. Samoa is operating two protection systems, one an ambitious MPA scheme linking a dozen villages in two locations, overseen by the Ministry for Natural Resources and the Environment (MNRE); the second a system of village fish reserves overseen by the Fisheries Division under its Community Based Fisheries Management Programme (CBFMP), funded by AusAid. Influential community members have gone into government roles, driven processes and stayed in their jobs.

### *ii Multi village MPAs*

IUCN, World Bank and Conservation International funding led to the protection of 43 square miles of ocean on the south east of Upolu in 1999, following a socio-economic survey which identified two of 8 districts most motivated to protect. Safata’s MPA is 24.4 square miles of mangrove protection, including 10 small no-take zones covering

8.5 square miles, and administered by 9 villages. Aleipata's MPA encompasses 11 no-take zones and offshore island nesting sites, administered by 11 villages. Each village has a no take zone within the broader MPA. There is no commercial, tourist or outsider subsistence fishing in the MPA take zones, only rule-abiding villager fishing is allowed.

### *iii Community-based management facilitation*

The NGO project facilitator was a local Samoan, Pulea Ifopo. Pulea worked through the chiefs who oversee community life according to traditional systems, engaging youth, fishermen, women, and church ministers in building up a management plan grounded in local experience, traditional knowledge and local priorities. Both MPAs are administered by a committee of chiefs from each village, in accordance with the management plan. The plan summarises the common vision and guiding principles agreed by each committee, and roles for government agencies as well as villages. Two social pillars, Christianity and Faasamoa ('the Samoan way of life') guide ongoing management. Enforcement and fines are administered by the community, consistent with Faasamoa. Volunteering was encouraged from the start, with management seen as a community responsibility. Peace Corps volunteers taught marine science in local schools until recently, and youth awareness raising has been taken up through Sunday schools and youth groups.

Pulea was subsequently appointed to central government to oversee MPA management planning, income generation and biological surveys, although on a 'project' basis with Coral Reef Initiative of the South Pacific (CRISP) funds 2005-09. Three or four volunteers from each participating village are trained to assist annual surveys. MRNE report that surveys show an increase in fish sizes and numbers in the MPA since 2003, encouraging villagers.

### *iv MPA financing and enforcement*

The most striking aspect of the MPA project is the establishment of a Trust Fund. Founded with 10,000 tala (US \$3,450) from each committee, it has been bolstered by recent CRISP funds. Only the interest from the capital will be used to pay for operations. A Trust Fund is more secure and attractive to donors than funding individuals. There are three trustees from Aleipata and three from Safata. A lawyer, Conservation International's Marine Programme Manager and Pulea advise the Trust. Further income comes into committees from a (unmonitored) 5 tala per person tourist levy on tourism operators (from snorkelling, diving, boating and mangrove walking in the MPAs), and into the community through accommodation provision.

Villages monitor and enforce management rules. Rule summaries were given to households, schools, meeting houses and are placed on signboards. A colourful poster of life-sized allowable take sizes at Safata was an effective communication tool. Breaches can be reported by anyone to the district committee. Fifty per cent of every fine goes into the Trust Fund. 'Usufaai' custom provides that a poacher's village feeds the whole district and for serious wrongdoing, people can be sent away from their village for 2-5 years. Outsiders can subject themselves to local customary process, or the matter is prosecuted by central government. Local bylaws can be enforced against non-residents through national courts. Breaches of the rules are well publicised. MNRE has a constructive working relationship with Fisheries, sharing information. All bylaws are made under Fisheries legislation.

*v National bans*

The Fisheries Division advised that 60 percent of subsistence take is in the inshore reef environment, and that the use of motorised boats further offshore wipes out the resource. Methods banned under fisheries regulations include dynamiting, small mesh nets, SCUBA use (for its efficiency), and the taking of undersized fish. Sea cucumber export has been banned for 10 years, and recent surveys show stocks remain in a precarious state. Many mangroves, valuable as nurseries, are protected by bylaws and legislation.

*vi EEZ tuna licences*

In 1998, the government also decided only to license Samoan flagged vessels to fish tuna in its EEZ. Licence fees go into central Treasury. The FFA-led regional Vessel Monitoring System will help ensure that only licensed operators are fishing. The Pacific region has been watching with interest Tonga's US \$2.5M compensation claim against a Taiwanese vessel recently caught fishing illegally in the Tongan EEZ by a New Zealand ship.

*vii Fisheries governance*

Samoan Fisheries advised that they are now resourced to the tune of 1.3-1.4 million tala (some US \$450,000 – 500,000) per year, split between five work programmes: community advice, inshore, aquaculture, offshore tuna and enforcement. Advisory team officials run a similar process to MRNE for the establishment of fish reserves: they raise awareness, motivate and build capacity within communities, then respond to requests to establish fish reserves. Inshore staff do fish surveys, advise communities what areas should be closed, and then monitor them annually.

*viii Village fish reserves*

Under CBFMP, 80 villages now have fish reserves and supporting management plans, all inshore of the reefs. Officials have strong local relationships in the communities we visited, and ongoing communication and monitoring maintains community motivation. UNDP supports the establishment of more reserves, and coral planting and giant clam aquaculture pilots. A project funded by the Australian government is restocking selected reefs with Vanuatu trochus. The team snorkelled through the fish reserve at Tafagamanu village. We observed that protection has not been in place long enough for fish to return, but our team member Tafagamanu Chief Tuala is patient and optimistic. Giant clam broodstock is being nursed in Tafagamanu's reserve with support from UNDP's small grants programme.

### **Summary of approaches seen in Samoa**

- In-situ restocking and nursery growing of rare species such as trochus and giant clams.
- National bans on dynamiting, small mesh size fish nets, and SCUBA use.
- National bans on the export of severely depleted species.
- Only Samoan flagged vessels are licensed to fish tuna in its EEZ.
- Umbrella MPA organisation across multiple adjoining villages, with a management plan recording common village commitments and visions.
- International organisations appointed a local to lead community liaison, and he was appointed to a government role following MPA project implementation.
- Central MPA Trust Fund for two geographically separate and independently managed MPAs to hold donor funds, with interest supporting operational management.
- Government fisheries division maintains dedicated community-based management advisory officers, and inshore section officials do surveys and advise where fish reserves should go.
- Enable local villagers to take fish from MPA take zones, and ban commercial, tourist or outsider subsistence fishing.
- Local bylaws can be enforced against non-residents through national courts.
- Local tourism infrastructure like beach accommodations, snorkelling, diving, and mangrove walks, coupled with a tourist levy on tourism operators entering MPAs, to raise management funds.
- Establish a marine protection centre at the heart of a community.
- Village competitions/prizes for art, music, dance raise MPA awareness.
- Peace Corp marine ecology teaching programme in schools.

## **III CHALLENGES IN IMPLEMENTATION**

### **A Ecological**

Because of their remoteness from capitals, Pacific communities manage their own natural resources. Yet at community level, knowledge of the degraded state of the resource can be poor. With overfishing, coastal communities often no longer rely heavily on fisheries, lowering incentives to restore stocks. In some areas, no-take protection yields observable recovery in four years, in other areas it takes longer. People can become de-motivated and inactive unless a long-term outlook is encouraged by leaders. No-take zones tend to be small when first designated, and may need to be enlarged to support ecosystem recovery. The community at Aleipata, in Samoa, are concerned that their no-take zones are not big enough to protect fish breeding. FAD use can spell the end of an already depleted fishery. At a national level there is often limited scientific information on the multi-species nature of fisheries, stock status, and ecosystem interdependence. Documenting the traditional knowledge of communities is a challenge at a time of sociocultural change. It is costly to collect basic catch data.

## **B Economic**

Funding is a major constraint for local NGOs, and also for government in countries like Vanuatu (whose fisheries department activities are mostly funded by donors on a project basis) and Samoa (whose MPA liaison officer is project funded). There is heavy dependence in Pacific coastal management on funding flows from international NGOs and the larger South Pacific governments, which come and go. Asian government funding is often geared towards enhanced tuna access. Loan-based models will not work unless they are small scale, as people are unable to generate sufficient income.

There are huge viability issues for projects when funding is on a short-term basis. There is also a tendency to grab donor money and use it up quickly. There is a need to look to the future, and build capacity to sustain outcomes beyond project periods. Well-managed projects in Vanuatu and Samoa are beginning to generate effective local funding strategies.

In countries such as Vanuatu, where tuna licence fees form a major proportion of treasury revenue, there is an incentive for central government to exploit the offshore resource very heavily; a slower exploitation might ensure sustainability, as in the Samoan example, where the tuna catch in the EEZ is restricted to Samoan flagged vessels. Tuna income is rarely invested in subsistence fisheries.

There is a widespread need to value subsistence and artisanal fisheries, and their contribution to local economies, and the food security of communities. This would assist governments in assessing the vulnerability of families and communities to change, collapse or restoration of fisheries.

## **C Socio-cultural**

Traditional village governance systems still underpin social relations in the Pacific, but are weakening with the cash economy and migration (to a differing extent on different islands). At community level, decisions are taken by traditional leaders, but may no longer be respected in rural PNG. Respect for chiefly authority remains strongest in Samoa. Customary fishing practices remain strong in some Vanuatu communities; in others they are weak or have collapsed. Population growth is putting even greater pressure on fish resources, and internal migrants do not necessarily obey local traditional structures.

Young male islanders in Vanuatu and Samoa can leave for up to five months a year on seasonal worker schemes in Australia and New Zealand, and this can drain their communities of skills and energy. Others migrate. Existing research suggests that seasonal worker schemes can make significant contributions to economic development in sending countries, and they have been warmly welcomed by Pacific leaders. But workers return with cash that gives them a degree of independence from hierarchical, community-orientated social systems. The glue that holds communities together begins to dissolve. Volunteer community spirit is collapsing in the Pacific, and people increasingly want to be paid. The Australian Government is working with partner governments to monitor its pilot scheme, and any unintended social consequences.

International NGO agendas may be contrary to local traditions. In one case reported to us a chief was sidelined to give preference to women, youth and a more “democratic” approach, and took his revenge by building a house in a proscribed area.

## **D Institutional**

Widely spread islands make inshore fisheries management by central government in Vanuatu and PNG impossible. Chiefs can be more powerful than government. Vanuatu Fisheries has few resources, and PNG government support for coastal initiatives ebbs and flows, depending on the administration and on donor flows. Government is most effective fostering and providing technical support to community-based initiatives at the provincial and local level eg. at Malakula and Tafagamanu. In Pacific governments the resource departments are usually stronger than any dedicated environment department: we noted a case in Samoa where sand mining was only stopped by direct community protest, not by administrative action by a government department. Peace Corps volunteers fill crucial local capacity gaps: teaching marine ecology in schools (Aleipata-Safata Samoa and Reefwatch Vanuatu) and building organisational infrastructure (Nguna-Pele Vanuatu).

## **IV RECOMMENDED STRATEGIES AND FUTURE ACTIONS**

### **A Recommendations for all Pacific countries**

*The following recommendations were developed in discussion by the study team, after each country visit and at the conclusion of the tour; they result from observation, interviews, and preexisting knowledge.*

#### *i Community-based management*

Community-based management is a critical ingredient for enhancing fish stocks and restoring marine systems. Governments should

- build on community-based restoration and enhancement programmes in their infancy;
- develop national and regional strategies for expanding their reach;
- foster networking between engaged communities and their neighbours;
- direct funds to on-the-ground NGOs, wherever possible, with biannual reporting and accountability mechanisms.

#### *ii Project sustainability*

Community-built solutions, with effective follow-up, generate the ownership and momentum critical to changed mindsets, self-implementation and self-enforcement. Legitimacy and enforcement depend on utilising and supporting traditional village governance systems. NGO or government facilitators should

- approach chiefs for permission to engage with a cross section of the community (including women, titled and untitled men, and energetic youth);
- engage in participatory planning including process endorsement, community identification of problems, motivators for action and solutions, plan write up and committee appointment;
- build on concepts such as taboos and stewardship that have a history and resonance with the people;

- engage youth through education, committee work and mentoring by community leaders;
- encourage layered management, limiting fish take and net mesh sizes in areas surrounding no-take zones;
- identify and protect spawning grounds;
- encourage the generation of community-level funding streams;
- encourage the whole community to report breaches and be rewarded;
- follow up regularly to encourage and support flagging MPA committees;
- develop simple low cost measures of monitoring, train community members, and lead or provide incentives for regular monitoring.

If trust relationships are in place, neighbouring villages can link under an umbrella organisation (like the Nguna-Pele MPA or the Safata-Aleipata MPA Trust Fund). This provides a central point for support, fund raising and fund management, and NGO and government liaison, thereby enhancing the sustainability of management arrangements.

### *iii Local management*

Volunteer MPA committees should not be overburdened. They should be encouraged to act as a bridge between the management plan and action, coordinating implementation of community-assigned tasks. Regular visits by the facilitator to provide mentoring and encouragement should be part of every exit strategy.

### *iv Government support*

Implementation and technical support should be sought by communities from the lowest appropriate level of government, to enhance ownership and timely action. Once community management regimes are well established, provincial or national government can pass enabling legislation to allow local customary restrictions to be written into bylaws applicable to outsiders. Fines need to be painful. Government fishing licensing systems could complement community initiatives.

Governments should prioritise and support marine conservation and management as much as fishing. Fisheries departments should support mariculture transfer initiatives to counter local extinctions of slow growing and high value species. Destructive fishing practices and the take or sale of severely depleted species should be banned, and size and method restrictions placed on other depleted species. Offshore commercial fishing for species whose stocks remain healthy should be encouraged over enterprise in the fished out nearshore. Departments should redirect icemaking and FAD deployment grants away from nearshore fishers to communities set up for such deep sea fishing. Government planners should ensure mining and industrial discharges do not undermine fisheries restoration projects.

### *v Supplementing government income streams*

Tuna licence income could be fed back into community programmes. As part of the case for this, the economic value of restored subsistence fisheries for their communities should be estimated from (among other things) the cost of buying substitutes, and articulated to Finance Ministry officials.

## **B Recommendations for the countries visited**

### *i Papua New Guinea*

In PNG, provincial fisheries departments should be encouraged to enforce existing fisheries laws. They could focus more on internal (local and provincial) fish distribution. A dedicated community-based fisheries restoration officer should be appointed to each provincial fisheries team. Provincial bylaws should be passed to reflect customary rules in specific marine areas, and related national legislation passed. There should be improved financial accountability for officials. At a national level, NFA could free up internal science resources to better regulate take levels, species type, and minimum and maximum sizes to sustain nearshore as well as offshore stocks, and to ban harvest (especially commercial) of depleted species. It is encouraging that PNG has implemented a three year closure of the over-exploited beche de mer ( sea slug ) fishery from 1 October 2009. More PNG nationals should be supported through marine science and management training.

### *ii Vanuatu*

In Vanuatu there is a need for trained marine biologists in the country, to assess and conserve fish resources. Expansion of the currently small nearshore commercial fishery should only be pursued after ascertaining that species likely to be targeted have been restored to healthy levels. This is likely to exclude reef species. The provision of FADs and icemakers for nearshore fishers seems counter productive given the dearth of coastal fish and should be re-channelled to offshore ventures. A dedicated community-based fisheries restoration officer should be appointed in the Vanuatu fisheries department, to develop a national strategy, support NGO efforts and channel additional foreign government donor funds to local initiatives in priority areas. Reef Check's programme could be valuably run in areas that do not as yet have management measures in place.

### *iii Samoa*

In Samoa, we would encourage officials to work with communities to identify and protect district spawning grounds; establish MPAs beyond reef lagoons to protect different habitats and species; and expand the size of fish reserves and no-take MPA zones to provide protected breeding and rearing habitat for more fish. Funds could be procured for specialist scientific help with these tasks. We also encourage officials to link up small village fish reserves in larger multi-village schemes that manage the waters between them. Funding for the MRNE MPA coordinator could be mainstreamed into annual treasury funding bids, rather than relying on short-term external project funds.

We encourage communities to explore collaboration with local businesses, such as accommodation and service providers, to generate further income streams. We also encourage villages to establish alternative sources of protein and income to lessen the pressure and effort on the marine resources (such as poultry and piggery supported by land-based composting systems).

## **C Recommendations for regional organisations**

SPREP, SPC and the Pacific Islands Forum Fisheries Agency (PIFFA) play a key leadership role in facilitating policy establishment and guiding and reviewing funding efforts in the region. Collaboration with donors is critical to kick start programmes. Small amounts of funding, channelled directly to on-the-ground NGOs, community level committees or key people, can go a long way.

We recommend that SPREP and SPC bring together international donors to discuss a 5-10 year strategy to provide arms length support to expand in-country pilots (like IWP's coastal fisheries projects) plus FSP and local NGO community-based management projects into new communities.

We recommend that SPREP and SPC work with donors to

- channel funds to community-specific MPA, restocking and 'fundraising kick start' initiatives;
- identify 'champions' within NGOs or provincial government and fund and support them, where initiatives are not yet in train;
- build the capacity of local NGOs through mentoring, part funding of salaries (scaled down as local fund generation scales up), and grants for small scale solar technologies that enable cost effective internet link ups;
- offer scholarships for young people to work alongside existing NGO leaders (in for example Ailan Awareness, FSP, Wan Smolbag and WCS) implementing programmes that act as a model for elsewhere;
- offer scholarships for young people to train in marine science;
- fund community-based management training in fisheries courses.

We recommend that regional organisations give higher priority to the sustainability of projects they wish to support: ensuring that project design incorporates on-the-ground assessment, strategies *beyond* capacity building, and systems that head off foreseeable setbacks (eg. loss of men on seasonal worker schemes, withdrawal of volunteers or funding). Our team was struck by the fragility and short-term nature of much current fishery support. The generation of funding streams at the community level should be part of project plans designed to make a long-term contribution.

SPREP and SPC could partner with national governments to share examples of provincial or national laws that enable the application of customary rules set at local levels to outsiders through bylaws. National training institutions should share teaching materials and trainers across the region.

## **D Recommendations for the Commonwealth**

It is recommended that to support Pacific Island nations, Pacific Commonwealth countries provide additional funding to regional organisations to: mobilise donors; provide in-country support; kick start community-specific MPA, restocking and local fundraising initiatives; and establish youth scholarships.

It is recommended that Commonwealth Heads of Government direct their officials to: assess the economic value of small-scale fishing for employment, catch value, food and protein, and community viability; implement practical measures to restore nearshore and inshore reef fish and crustaceans with the coastal communities who depend on them for food and livelihood; examine the Pacific experience with

community management initiatives and no-take zones successfully restoring inshore fish, shellfish and coral, supported by income streams and management arrangements that can support full recovery and abundance over next decades; implement capacity reductions in depleted EEZ fisheries; investigate requiring the landing of bycatch; support less developed regional neighbours by releasing funds to support community-based management initiatives and by making EEZ surveillance assistance available.

It is recommended that the Commonwealth Secretariat convene a high level Ministerial task force to examine practical policies to support EEZ and territorial sea fisheries restoration and enhancement throughout the Commonwealth, incorporating specific policies to safeguard fish and crustaceans on which coastal communities depend for their food and livelihood; and to examine how international instruments that enable the protection of deep sea resources such as tuna could be expanded and strengthened. Governments should be encouraged to prioritise and support marine conservation and management as much as fishing.

It is recommended that Commonwealth agencies disseminate an annual survey of the state of the world's marine fisheries.

It is recommended that the Commonwealth Foundation assist networks of academic, private sector and non-governmental experts to bring their ideas on combating depletion of fish stocks, promoting sustainability strategies, and enhancing the long-term viability of coastal communities to the attention of governments.

## V Annexes

### A List of participants

**Almah Tararia** is an environmental and human rights lawyer from PNG, with a Masters in Environmental Law from the University of Sydney. Almah recently worked on sustainable eco-forestry and local government marine management and protection laws in PNG, and rural women's rights in Thailand.

**James Graham** chairs the board of management of the Krab Bay Coastal and Marine Protected Area, in Malakula, Vanuatu, helping 11 villages to take decisions together, conduct research and plan for the future.

**Joeli Veitayaki** is Associate Professor and Head of the School of Marine Studies at the University of the South Pacific in Fiji, Director of IOI South Pacific and a specialist in coastal management.

**John Aini** is a founding director of Ailan Awareness, an NGO in Kavieng, New Ireland, PNG that leads awareness campaigns and community-based marine management planning. John worked for PNG Fisheries for many years. He now works variously on behalf of Ailan Awareness, the Niu Ailan Surf Alliance and also teaches community-based management at the PNG National Fisheries College.

**John Ronneth** is a community liaison staff member of the Nguna-Pele marine protected area. John is the chair of the marine conservation committee of his village Unakap on Nguna Island, Vanuatu.

**Marta Lang**, study tour coordinator, who drafted this report, is a marine and environmental consultant. A New Zealand lawyer with coastal and ocean management experience at national and international levels, Marta also has a Master of Science from Oxford University.

**Richard Bourne**, study tour leader, was Head of the Commonwealth Policy Studies Unit 1999-2005. Richard has been involved in Commonwealth activities since 1982, including as Deputy Director of the former Commonwealth Institute, Kensington; the first Commonwealth Human Rights Initiative Director 1990-2; and Director of the Commonwealth Non-Governmental Office for South Africa and Mozambique 1995-7.

**Seuala Patone** is Lalomanu village mayor and High Talking Chief, Aleipata MPA management committee member, Safata-Aleipata Trust Fund committee chair, and an advisor to the Samoan Minister of Agriculture and Fisheries.

**Tuala Peniamina** is a Paramount Chief and village mayor, lay preacher and former fisherman from Tafagamanu, Lefaga in Samoa.

## B List of meetings and activities

Date	Programme	People we spoke to
<p><b>Papua New Guinea</b></p> <p>Sunday 16 November</p>	<p>Group met at Port Moresby airport by Marta and Hugh Walton. Tour introduction, key questions, itinerary and team approach</p> <p>Richard, John Ronneth and Tuala to Madang accompanied by Ghandi Tarube, PNG National Fisheries Agency</p> <p>Marta, James, John Aini and Seuala to Kavieng. Joined by Almah. Dinner meeting on Nusa Island</p>	<p>Hugh Walton, National Fisheries College and Gillett, Preston &amp; Associates Fisheries Consultant</p> <p><i>Kavieng:</i> Tim Parks, Forum Fisheries Agency, offshore tuna specialist</p> <p>Peter Sharples, South Pacific Community</p> <p>Shaun Keane, New Ireland Surf Club and Nusa Island Retreat manager</p>
<p>Monday 17 November</p>	<p>Field day</p> <p><i>Madang:</i> Meeting with World Wildlife Fund (WWF) marine staff and The Nature Conservancy (TNC) Locally Managed Marine Area network coordinator</p> <p>Field trip to Krangket Island and Madang resort fish market accompanied by Mathias Dum, former Madang Lagoon Association chair</p> <p>Dinner with Madang Fishers Cooperative Chair</p> <p><i>Kavieng:</i> Field trip to Panakais and Panameko management areas</p>	<p>John Mizeu, WWF</p> <p>Rebecca Samuels, TNC</p> <p>Mathias Dum, Krangket Island village leader</p> <p>Krangket Island village committee</p> <p>Catherine Kila, Madang Fishers Cooperative chairwoman</p> <p>Belefu village marine management committee</p>

<p>Tuesday 18 November</p>	<p>on the North-western side of New Ireland province</p> <p>Meeting with WCS</p> <p><i>Kavieng:</i> Meeting with New Ireland provincial planner</p> <p>Visit to National Fisheries College</p> <p>Meeting with provincial fisheries officer (no show)</p> <p>Group reconvened in Port Moresby</p>	<p>Helen Perks, Wildlife Conservation Society Marine Director, PNG</p> <p>Bruce Harris, New Ireland provincial planner</p> <p>Mr Tarube, Deputy Principal of the National Fisheries College</p>
<p>Wednesday 19 November</p>	<p>Early flight to Brisbane</p> <p>Delayed flight to Sydney. Unexpected overnight in Sydney</p>	<p>Travel day. No meetings.</p>
<p>Thursday 20 November</p>	<p>PNG review session</p> <p>Flight to Vanuatu</p>	<p>Travel day. No external meetings.</p>
<p><b>Vanuatu</b></p> <p>Friday 21 November</p>	<p>Port Vila meetings at Australian High Commission, Foundation for the South Pacific and Fisheries Department</p> <p>Van ride around Efate north coast, and boat to Nguna island. Stayed 2 days in tour participant John Ronneth's Unakap village</p>	<p>Rachel Young, Australian High Commission</p> <p>Tevi Obed Maltali, Coastal Programme Manager, Foundation for the South Pacific</p> <p>Robert Jimmy, Director, Vanuatu Fisheries Department, and Peter James, Deployment and Capture Division</p> <p>Katie Thompson, Reef Check, Peace Corp volunteer</p>
<p>Saturday 22 November</p>	<p>Boat trip around Nguna Pele no take zones, snorkelling in no-take and managed zones</p>	<p>Levi Tarip, Chairman of Nguna-Pele MPA committee and staff member</p>

<p>Sunday 23 November</p>	<p>Meeting at Nguna-Pele MPA research station, with presentation by Nguna-Pele MPA committee members</p> <p>Boat back to mainland. Return to Port Vila</p> <p>Presentation by James Graham on Krab Bay Marine and Coastal Management arrangements, Malakula</p> <p>Vanuatu review session</p>	<p>Seth Dolman, Peacecorp Volunteer, Nguna-Pele MPA</p> <p>No external meetings</p>
<p>Monday 24 November</p>	<p>Roundtable breakfast discussion</p> <p>Travelled to Samoa via Brisbane and Auckland</p>	<p>Yoli Tomtavala, University of the South Pacific customary law lecturer</p>
<p><b>Samoa</b></p> <p>Tuesday 23 November</p>	<p>Joined in Samoa by Joeli Veitayaki</p> <p>Meetings in Apia with Fisheries and Natural Resources and Environment Ministry (MNRE) officials (joined by SPC Coastal Fisheries Management Advisor)</p> <p>Dinner meeting with SPREP Coastal Management Advisor</p>	<p><i>MRNE:</i> Toni Tipamaa, Assistant CEO</p> <p>Malama Principal Marine Conservation Officer</p> <p>Pulea Ifopo, District Officer, Safata-Aleipata MPA</p> <p><i>Fisheries Division:</i> Savail Time, Acting Assistant CEO</p> <p>Olofa Tuaopepe, Principal Fisheries Officer, Advisory and Extension section</p> <p>Ueta Fa’asili, Coastal Fisheries Management Advisor, South Pacific Community</p> <p><i>SPREP:</i> Jeff Kinch, Coastal Management</p>

<p>Wednesday 26 November</p>	<p>2 day field trip along Upolu's south coast</p> <p>Meetings with Apolimauta village chief</p> <p>Formal ava ceremony and day long meeting at Tafagamanu with all village chiefs, led by Tuala Peniamina, tour participant and village mayor</p> <p>Presentations by Fisheries Division, village, and tour participants</p> <p>Interviews and filming by Samoa TV station</p>	<p>Advisor</p> <p>Apolimauta village mayor</p> <p>Tafagamanu village chiefs</p> <p>Olofa Tuaopepe, and other Fisheries Division officials</p>
<p>Thursday 27 November</p>	<p>All morning meeting at Safata MPA centre, led by Pulea Ifopo, MRNE and tour participant Seuala Patone</p> <p>Dinner in Aleipata with Seuala's family</p> <p>Samoa review session back in Apia</p>	<p>Safata and Aleipata village chiefs</p> <p>Pulea Ifopo, MRNE</p>
<p>Friday 28 November</p>	<p>Review of tour as a whole</p> <p>Meeting at Australian High Commission</p> <p>Press conference</p>	<p>Matt Anderson, Australian High Commissioner to Samoa</p>
<p>Saturday 29 November</p>	<p>Tour concludes and participants fly home and</p>	