



Secretariat of the Pacific Community

Women

in Fisheries

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I N F O R M A T I O N B U L L E T I N



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Introduction

This issue of the bulletin reports on the activities of the SPC Community Fisheries Section, and includes the preliminary findings of the Tuvalu field survey, a workshop in Wallis and Futuna, the SPC Heads of Fisheries Meeting and future work of the Section.

News from around the region includes a call for the issue of gender to be included in the trade and aid pact between the European Union (EU) and African, Caribbean and Pacific (ACP) nations, a new fish market now completed and open in Nauru, a record harvest of black pearls for the Solomon Islands and a report on women and fisheries in Wallis and Futuna.

Outside the region we have an essay on the Stakeholder Approach to Fisheries Management from the Bay of Bengal Programme, community efforts in halting dynamite fishing in Tanzania, Africa and news of bad conditions for women workers in fish processing factories in Chile, South America.

Details and reviews of books and publications appear at the end of this issue.

Once again, as with every bulletin, we are asking for articles and pictures. The bulletin is distributed widely throughout the region and is therefore a very good way of spreading news of what is happening in your country in the field of small-scale fisheries. Don't get left out! If you don't think your country is well-represented by the information in the bulletin then you can do something about it. Send us an article! Information you might like to have published in the next issue could include:

- fishing techniques and equipment,
- research activities,
- development and management projects,
- community initiatives (cooperatives, local projects),

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- training opportunities,
- conferences,
- books and publications, and
- issues that may impact on fishing communities (forestry, agriculture, tourism, pollution etc).

We also welcome any questions, requests for information, contact addresses and other relevant information about institutions and individuals who should be receiving this bulletin. Articles can be in French or English and the bulletin is published separately in both languages.

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The views expressed in this Bulletin are those of the authors and are not necessarily shared by the Secretariat of the Pacific Community

COMMUNITY FISHERIES SECTION



News from the Section

by Patricia Tuara & Lyn Lambeth

The Community Fisheries Section has been busy since the previous bulletin was published. The Women's Fisheries Development Project continues to be implemented by the Section in response to SPC member country requests. The objective of the Project is to "assist coastal fishing communities, particularly women, to effectively participate in, and benefit from, regional and national fisheries development and management activities." Some of the activities of the Section are summarised below.

Tuvalu field survey

The Community Fisheries Officer was in Tuvalu in January/February 1999, collecting information for the report on fishing communities and the involvement of women in fisheries activities.

The Community Fisheries Officer was assisted in the work by Sikela Ulumutu of the Tuvalu Fisheries Department and Suia Pesenga of the Tuvalu National Council of Women. The assessment was requested by the Government of Tuvalu in response

to an identified need for more information on the participation of Tuvaluan women in the fisheries sector.

The main objectives of the field survey were to:

- review the social and economic role played by women in the fisheries sector, including activities undertaken in the harvesting, processing and marketing of marine resources;



40% of Tuvalu's population of 11,000 live on the crowded main island of Funafuti.

- provide details on both government and non-government services available to support the interests of fishing communities and identify support services specifically aimed at women in the fisheries sector;
- outline the problems faced by fishing communities and the constraints that inhibit the effective participation of women within the fisheries sector;
- provide guidelines for government and non-government agencies to assist the effective participation of women within the fisheries sector.

generation. The role of women in providing alternative sources of seafood for the family when the weather was too rough for the men to go fishing was more important in the past than now. Women fish only occasionally now, for entertainment rather than food production. Women, however are involved in much of the processing and marketing of the fish the men catch.

Major Findings

- Fishing and its related activities, processing and marketing, are extremely important activities for men and women in Tuvalu, both for the production of food for the family and community, and for some small-scale income

Funafuti is a low-lying coral atoll with an area of only 2.8 sq. km, one third of which is uninhabitable due to the airfield or excavated coral pits.



Men are involved in spearfishing, netting, handlining and trolling using small motor boats or outrigger canoes. Most of the marketing is done on Funafuti with fresh fish being sold to the National Fishing Company of Tuvalu (Naficot). Some women directly market the men's catch from hand-carts in town. On the outer islands fish is sold from the homes of fishermen or to Naficot on those islands with operational Naficot fishing centres. Dried fish is produced on a few of the outer islands and sold in Funafuti, through Naficot.

- Fisheries development has focussed on projects that support the activities of fishermen rather than women. This has been due to the focus on income-generating, commercial fisheries development which has mainly involved men.
- One of the main restrictions on fisheries activities for the women is the traditional division of labour between men and women. Fishing is seen as the capture of fish and solely the domain of men. Reef gleaning, or the collection of seafood at low tide by women and children is less important now than in the past.

Despite once providing important protein for the community, especially when the weather was too rough for the men to go fishing, reef gleaning has never been considered a fishing activity.



Women fishing for crabs, small fish and eels on the reef flat of Nui

Even women's involvement in processing and marketing, though recognised, has not been considered by regional and national agencies when planning the development and management of the fisheries of Tuvalu.

- A major constraint to fisheries activities on the outer islands is the storage and transport of fish, both for sale and for local use.



Men returning from a morning of trolling, Vaitupu

A draft report of the survey has been submitted to the Government of Tuvalu and is presently waiting for comments from the people involved in the survey. A number of recommendations will be made and planning for a national workshop will go ahead once the report has been finalised.



Transport between the outer islands and Funafuti is slow and sometimes irregular.



Most of the outer islands are without electricity and fishing is mainly done for immediate use.



Some salting and drying is done for home use and for sale to the National Fishing Company of Tuvalu (Naficot).

Pacific Island women tackle fisheries business in New Zealand

Nelson, New Zealand saw an increase in its Pacific Island community in April with 13 women from around the Pacific attending the New Zealand School of Fisheries for 4 weeks. The first SPC regional course for Pacific Island women on seafood business operations and management was held in Nelson from 12 April to 7 May 1999. The course, the first to specifically target women, was part of the Secretariat of the Pacific Community (SPC) Fisheries Training Section's regional training programme on the management of fisheries enterprises. The Community Fisheries Officer represented SPC and supervised course operation for the first two weeks, while the Fisheries Education and Training Adviser supervised the final part of the course.

So why have a course just for women? Women play a large role in the seafood industry in the Pacific, especially on the processing and marketing side, but are often overlooked when it comes to training. This lack of training, together with a lack of expertise in seafood business operation and management often hampers women involved in commercial fisheries enterprises. Unless the course application specifically asks for women, it is likely that most of the applicants will be men. Two previous courses have been held at Nelson for Pacific Island fisheries enterprise managers. The first, in 1997, had three women out of the 13 participants while the second had one

woman out of 12. Being in such a minority the few women tended to be overshadowed by the men on these courses.

In the latest course the women were very comfortable with each other and related well together – all had children being cared for by extended family; most had experienced being put in positions of responsibility in their companies with no training and little support. The course received about 75 applicants, of which the 13 selected came from Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Nauru, Palau, Papua New Guinea, Solomon Islands, Tokelau, Tonga, and Tuvalu. Many of the women attending came from private enterprises and were well qualified in terms of experience.

For most women it was their first opportunity for training; they were keen to upgrade their technical skills and learn new strategies to enhance their businesses. The course was developed in collaboration with the New Zealand School of Fisheries and the New Zealand seafood industry to meet the regulatory and quality control requirements of international seafood markets. Subjects covered included seafood production systems (HACCP, handling, quality, value-adding, marketing); business management practices (commercial ethic, personnel management and development, problem solving); and business



Judging fish quality and freshness was easy for the women though learning to evaluate it in a more detailed way was new.



Interest in the visit to a shark fin and swim bladder processing factory was high.

planning and accounting (spreadsheets and computers for accounting, interpretation of financial information, business plans). Classroom lectures were interspersed with practical sessions and site visits around Nelson. The Pacific Island Community

in Nelson made the women welcome, hosting a Pacific night at the School of Fisheries. Other extracurricular activities included a visit to a green-lip mussel farm; white-water rafting; and sampling the sashimi and sushi at a local Japanese restaurant.

The course evaluation carried out by the participants and the SPC representative has highlighted the overall usefulness of the training programme for them. The trainees have also identified a number of

other Pacific Island women and seafood businesses which would benefit from the course. Based on this positive feedback the SPC is now actively seeking aid donor funding to repeat this training activity in 2000.

Wallis and Futuna workshop

Eighteen young women benefited from a three-day SPC workshop on mending fishing nets, held on the island of Futuna. The workshop was held from 17 to 19 May 1999. The workshop taught participants the knots needed to mend existing fishing nets and to make new ones. Selected for their interest in fishing and learning new skills, the women are considering forming an Association of Net Menders to hire out their services to the local fishing community.

The SPC Community Fisheries Officer conducted the workshop, which was jointly organised by the SPC Community Fisheries Section, the Pacific Women's

Resource Bureau, the Wallis and Futuna National Council of Women and the Fisheries Department.

This was the first time a workshop had been conducted for women involved in fisheries in Wallis and Futuna. It was also the first time the SPC Community Fisheries Section had worked in this small French Territory. The Community Fisheries Officer took advantage of the opportunity to carry out a survey on fisheries and a needs assessment for the fisherwomen of Futuna (see Wallis and Futuna section in News From Around the Region), and hopes to return for further work in the future.



Young women mending nets on Futuna

What does "fisheries" really mean? Women and Fisheries in Pohnpei, Federated States of Micronesia (FSM)

At the request of the FSM National Government the SPC Community Fisheries Officer travelled to Pohnpei recently (22 July to 7 August) to undertake a field survey on the role of women in fisheries and to attend the Fifth FSM Women's Conference (2 to 6 August).

According to the SPC Community Fisheries Section, "here, as in many places we visit, the first thing many

people tell us is that 'women don't fish.' Our answer is that people perhaps need to broaden their understanding of what 'fisheries' and 'fishing' actually mean. Fisheries activities include not just going out in boats and catching fish, but also collecting shellfish and other marine life from the reef and mangroves; cleaning, cutting, cooking and preserving seafood; sitting in the market selling seafood; and a whole host of other activities to do with

marine resources that may involve both men and women. All of these activities should be considered when planning fisheries development as well as the conservation and management of marine resources.”

The work of the Community Fisheries Section includes research and assessment of those involved in subsistence and artisanal fisheries, resulting in a National Assessment Report for the country. Further development support is provided based on the needs identified in the initial study. This support may be given by means of national and regional training activities, and provision of resource materials such as manuals, bulletins and videos.

Recommendations that have resulted from the national assessments include improving information services for small-scale fishermen and women, increasing the involvement of women in the work of the government fisheries agency, improving training for small-scale fishermen and women, and increasing education and public awareness of the importance of fishing communities to the overall health and well-being of the country. The SPC Community Fisheries Section can offer guidance and technical support in these areas as required.

Women processing tuna loins at the Pohnpei Fisheries Corporation



Working with the National Women's Interest Officer and the National Fisheries Section, the first two weeks of the visit to Pohnpei were spent in a series of meetings with people directly or indirectly involved with fisheries activities. These included representatives of National and State Government departments, business, banks, community development workers, women's groups, non-government organisations and churches. A number of visits to villages were also undertaken, as well as some "hands-on" experience of fishing and collecting of marine resources with men and women of Pohnpei.

The end result of this visit will be a report for Pohnpei on fishing communities and the role of women in fisheries activities. The report will make recommendations on ways of assisting small-scale



Women handling and collecting sea cucumbers in the Madolenihmw municipality

fisheries activities in Pohnpei and will propose a programme for further training of those involved. Direction for further work in Kosrae, Chuuk and Yap will also be given in the report.

During the final week of the visit the SPC Community Fisheries Officer and her counterpart from the National Fisheries Section, Estephan Santiago, Conservation and Management Officer,

attended the Fifth FSM Women's Conference. The two officers gave a joint presentation on the work of the SPC Community Fisheries Section and the FSM National Fisheries Section, provoking a lively and interested discussion on "women in fisheries" amongst the conference participants. The conference also gave the SPC officer an opportunity to talk with women from all four states to gain an insight into the special circumstances and needs of each state.

Heads of Fisheries meeting

The potential boom in seaweed farming, fish export certification and marketing issues were hot topics at the recent First Head of Fisheries (HOF) Meeting, held at the Secretariat of the Pacific Community's (SPC) headquarters in Noumea, New Caledonia.

The HOF Meeting, formerly called the Regional Technical Meeting on Fisheries (RTMF), provides the only opportunity for those responsible for running Pacific Island government fisheries services from all SPC member countries and territories to meet and discuss aquatic resource issues of regional importance. The Meeting also reviews the work of SPC's Marine Resources Division, enabling it to keep its work programme, the largest in SPC, relevant to the evolving needs of its Pacific Island members.

The Community Fisheries Section reported to the meeting on its past, present and future activities. Support for the work of the section was high, especially from those countries in which the Section has completed baseline surveys or workshops. Several countries expressed interest in the Section carrying

out studies that assess the impact of women's harvesting techniques on the inshore marine resources. Presently the Section documents the activities rather than the impact of women in fisheries. A strategy and work programme for future impact assessments is now being considered.

The meeting was held at SPC headquarters from 9 to 13 August 1999, bringing together 79 participants from 22 SPC member countries and territories and 25 international or other organisations.

Source: SPC Press Release, 26 August 1999

Female community workers to learn fisheries skills or "How do you make a fish smoker?"

How to make a fish smoker is one of many skills that women studying at the SPC Community Education Centre (CETC) in Fiji will learn in September 1999. As of this year, the trainees undertaking a seven-month course for a Certificate in Community Development Studies will be offered a course in fisheries skills. The two-week fisheries module has been developed by SPC's Community Fisheries Adviser working in collaboration with USP's lecturer in Post-harvest Fisheries.

The module will include practical skills training in sustainable harvesting techniques, gear technology, seafood processing and preservation, and marketing. Apart from learning how to market seafood and develop a community fisheries programme, the trainees will be expected to make and test fishing gear, assess the quality of seafood, and process and preserve various marine resources using a variety of processing equipment. The module will take place from 20 September to 1 October 1999.

Future work

A workshop for women in Palau will be held in October or November 1999. Topics to be covered at the workshop include fish spoilage; handling and processing of seafood; conservation and management of marine resources; small business skills; and new recipes for marketing pre-packed seafood meals.

A workshop for Tuvalu will be organised once the national assessment report has been finalised. A workshop for Jaluit in the Marshall Islands will be held in October 1999.

This workshop, similar to one held on Ebeye in August 1998, will cover conservation and management of marine resources, fish quality control, primary and secondary fish processing methods, packaging and marketing. Field work on the gender aspects of the Palau tuna industry was carried

out by the Forum Secretariat's Gender Issues Adviser in July 1999 and work on a report on this is continuing, with input from the SPC Community Fisheries Section.

The study is one of several which were undertaken to assist the government to produce a Tuna Industry Management Plan for Palau. The plans are funded by the Canadian Government, with technical assistance provided by the Forum Fisheries Agency, Secretariat of the Pacific Community, and the Forum Secretariat. Similar work is being planned for Vanuatu in the near future.

Work is progressing on two new resource materials for the region – a manual on promoting the management of subsistence fisheries by Pacific Island communities and a seafood recipe manual.

SPC Women in Fisheries Information Bulletin on-line

This Information Bulletin is now available on-line. As resources permit, all earlier issues will gradually be made available that way. To access the SPC Coastal Fisheries Programme menu, go to:

<http://www.spc.org.nc/coastfish/>

Then scroll down to the bottom of that menu and open 'Newsletters'. Now, you can select any of the SPC information bulletins available, including the Women in Fisheries Information Bulletin.

WHAT'S HAPPENING WITHIN THE REGION



PACIFIC GENERAL

Report says over-fishing poses threat to Pacific region

A World Bank report on coastal management in the Pacific has revealed that overfishing poses a big threat to many Pacific Island countries. The report, focussing on the problems and issues that affect coastal areas in the Pacific, said over-fishing would worsen because of the demand for more money.

“The most serious threats are things like over-harvesting, pollution, garbage, logging, mining, destructive fishing practices (such as dynamiting and fish poisoning), and the breakdown of traditional authority which is essential for community management of coastal resources,” the report said.

“In order for the catches to recover it is important to control them and allow the resources to reproduce. But many communities are unable to control their own fishing practices and pollution sources.” The World Bank report stated that coastal resources are important to Pacific Island countries. “Much of the region’s culture, employment and sports are based on living resources found between the shore and the outer reef. The continuation of current lifestyles, the future of the children and food supply are highly dependent on coastal resources.”

Source: PACNEWS, April 1999

ACP nations told to include gender in new Lome pact

The 71 African, Caribbean and Pacific (ACP) Governments and the European Union (EU) have been challenged to stop treating women as passive members of society and begin to focus trade and development policies on women, youth and the poor to ensure development and growth head in a common direction. “The rules of the game of trade still do not include gender. The fact that 70 percent of the world’s women are poor is not new. And the rhetoric will not change ... but what more must be done in order to make partnership become operational?” asked Pat Made, Director of Inter Press Service, Africa.

The issue of gender, in the context of a successor agreement to Lome IV, the trade and aid pact between the EU and the ACP states, was among issues addressed at a hearing on civil society held in Brussels from July 8-10.

The current Lome convention expires on 1 February 2000 and it is envisaged the successor pact will

include a chapter on civil society and its role in the implementation of the follow-up agreement. The successor agreement between the EU and the ACP will be based on the overarching objective of poverty eradication.

The EU negotiating directives set out three guiding principles “for systematic application in all areas of co-operation”, including “gender mainstreaming and gender equality”. Both the EU and the ACP also recognise that social and economic development cannot be secured in a sustainable way without the participation of women.

Kena’e Ka’au of the South Pacific-based Melanesian Solidarity for an Independent and Nuclear Free Pacific supports the inclusion of gender as a development concern in the successor Lome pact but says the meaning of gender is still not widely understood in the Pacific. “Many in the Pacific think gender is about women but it is a much broader issue,” Ka’au said. “In the Papua New Guinea (PNG) and

Melanesian context the issue of gender balance or equality from the EU level is important. At this level, it must be equality and not just a notion of equality. If this is not done, women will be left out.”

Ka'au said an additional challenge for the Pacific concerned how the whole concept of gender in the successor Lome pact would be translated and made effective on the ground. He suggested the need for awareness raising before the gender issue could become part of the successor agreement but also pointed out this would need to be done in the context of national capacity and availability of resources.

“The first time I heard about Lome was in April this year but some work has begun on awareness raising in PNG through the Pacific Concerns Resource Centre and a few European NGOs. To be honest, we need to look at home first before looking elsewhere and in the Pacific there is a need also to consider governments that were not responding to people's needs.”

Source: PACNEWS, July 1999

Happy twentieth birthday to the SPC Fisheries Training Section Nelson course!

by Teriihauroa Luciani and Lyn Lambeth

When, in 1979, the SPC advertised the Pacific Island Fisheries Officers Training Course, no-one in the region would have thought the same course would be run the following year. In fact, the SPC/Nelson Polytechnic course became an annual event, and has been attended by 222 fisheries officers from 18 countries and territories during the 1979–1998 period. Last year was the first time women began attending, with two women from Samoa and Tonga completing the course. This year saw one woman from Kiribati attending the course. Erema Ebaureu had the distinction of not just being the only woman on the six-month course but also the youngest!

This year's course started on 8 February in Nelson when the 12 participants (from 10 countries and territories) were given a tour of the New Zealand

School of Fisheries. The 23-week training programme is totally different from what it was in 1979. The five-week practical fishing module now takes place in the Pacific (initially, this was run in the freezing months of the New Zealand winter!), the course duration has been extended and some topics have been added to keep the course relevant.

The five-week practical module in Noumea, New Caledonia, was run by Teriihauroa Luciani, Steve Beverly and Michel Blanc of SPC and supported by Brian Fosset of Nelson Polytechnic. Every attempt was made to keep the practical fishing module “hands on” as much as possible in order to give the participants a realistic impression, through experience, of the hardships their own countries' fishermen face on a day-to-day basis. This included day



Erema getting some “hands-on” fishing experience in New Caledonia

after day after day of line-in-hand on the boat fishing trips of the open sea facing all the elements (sun, wind, swells, rain, win, more rain, bigger swells, wind and more rain and rain and rain) and the disheartening but reality of a “no catch” day as well as the excitement of “a big catch”. All with the intention to create a deeper sensitivity in the participants to better serve the fishermen when they return to their fisheries posts of their own country.

The participants “hands-on” experience covered various technical fishing methods which included trolling with lures, fresh bait trolling, deep bottom fishing with hand reels and pelagic longline fishing for tuna and for swordfish. During fishing operation students were requested to fill and use the SPC vessel logbook and to analyse financial aspect of each fishing trips. This year, students also participated in

the construction and deployment of an Indian Ocean style FAD. As local expertise were available, the course also included subjects such as aquarium fishing techniques, post harvest and HACCP principles, prawn farming techniques, as well as reef and mangrove ecology and environment

Feelings from this year’s participants about including women on the course were mixed, with some believing that a separate course tailored for women would be more appropriate, given the often distinct roles of men and women in the Pacific. The majority however, would like to see the mixed courses continue but with an increased number of women! Erema herself felt the mixed course was good, though a few more women would have made it even better. She found some of the subjects difficult, but valuable to learn.

Rubbishing the Pacific

by Tamari'i Tutangata

Time was, there was no rubbish in the Pacific. Anything that was discarded—food, coconut leaves, pandanus baskets—was organic, and either was eaten by livestock, used to make richer soils for crops like taro and pulaka, or else simply rotted away. In fact, some of the region’s more than 1000 languages have no word for rubbish.

While Western societies spent centuries battling to reduce the rubbish that clogged streets and waterways and sparked outbreaks of cholera and other deadly diseases, less populated Pacific islands countries continued to enjoy clean drinking water, clean oceans, an abundant supply of fish, seafood, coconuts, breadfruit and bananas—and no rubbish.

Those times, sadly, are passing. The influx of Western consumer products, with all their plastic wrappings, their metal containers, is creating a mountain of solid waste that does not decay, but instead clutters formerly pristine lagoons and beaches, threatening not just the natural environment, but economies and public health as well.

Some lagoons are now ruined, turned instead into rubbish dumps. And all around the Pacific, small islands with limited land masses are finding the expanding mountain of solid waste virtually impossible to deal with.

Waterways and freshwater lenses essential for communities’ water supply are becoming increasingly polluted and the growing piles of waste bring an expanded risk of disease, not least from the dengue-carrying mosquito, whose numbers are multiplying in many Pacific islands countries. Mosquitoes thrive in stagnant water and discarded rubbish traps

water, providing ideal conditions for the dengue mosquito to breed. Outbreaks of this debilitating and sometimes fatal disease hit countries’ economies, because money that could be used elsewhere has to be diverted to deal with the outbreak.

The increasing piles of solid waste—in some cases in deliberately sited rubbish dumps right on the beach—create a spiralling series of vicious circles. As polluted lagoons no longer provide enough fish and seafood to allow the communities to survive, people are forced to buy more and more cheap canned food—and in turn create even more of a litter problem in their fragile environment. That flows into new health problems as a formerly balanced diet is thrown out of kilter—as the accelerating rate of diabetes in the Pacific bears witness. The World Health Organisation says the Pacific is now reported to have one of the highest rates of adult onset diabetes in the world.

Tourism, a key money-earner for some Pacific islands countries, is also starting to be affected by the spread of litter. The region did have a competitive advantage over other tourist destinations because of the reputed beauty of its lagoons and beaches. But that advantage is shrinking under the weight of solid waste piling up around shorelines and waterways alike. One recent report detailed comments from tourists who said they would never return to the Pacific because it had allowed parts of its environment to become so degraded. They’d rather go to a beach in Queensland, they said.

Innovative ways: Some countries have already begun devising innovative ways of reducing the quantities of waste they must dispose of. While a



On Funafuti, Tuvalu, rubbish is sometimes dumped into “borrow” pits, marine lakes formed from the excavation of coral for the airstrip during World War II.

new SPREP programme is about to gather details of exactly what rubbish is accumulating in the Pacific, existing data suggest that organic, biodegradable material makes up about 50 percent of all domestic waste. In Fiji and the Solomon Islands, pilot programmes are successfully using this organic waste to generate income and improve community nutrition. Fiji’s Youth Composting Project, based in Nabua and Tamavua/Wailoku, has seen young people convert organic waste into compost which they sell for community gardens.

The Solomons’ Sup Sup Garden project, which started in 1986, aimed primarily to help people achieve a more balance diet by encouraging them to make compost and grow vegetables. More than 10 percent of all households in Honiara now participate in this scheme. There are other innovative recycling programmes being started up across the Pacific, from recycling bottles and aluminium cans to investigating ways of generating energy from the waste mountain. The problem remains, however, that few countries have much idea of what sort of waste, or how much, they are generating; and few have the expertise to plan what to do about it.

A new European Union-funded SPREP initiative, the Pacific Regional Waste Awareness and Education Programme (WASTE) will soon begin the region’s first comprehensive study of what exactly it throws away. This study covers eight Pacific islands countries—Fiji, Kiribati, Papua New Guinea, Samoa, the

Solomon Islands, Tonga, Tuvalu and Vanuatu. Once the specific details of the problem are known, the programme will assist countries to devise comprehensive waste management plans, which can then be used to attract Government and other funding for solid waste management projects. Options available to Pacific islands countries include some forms of user-pays charges, perhaps for tourists; recycling and composting schemes—all based on the three ‘R’s of waste management—reduce, reuse, recycle.

For small Pacific islands countries, reduction of waste is probably the most practical option, and that depends on public awareness. The hope is that as people become aware of the realities of the threat which solid waste poses to their environment, their health and their economy, they will start taking action themselves to reduce their waste and stop rubbishing the Pacific.

Source: *Islands Business*, March 1999

Tamari’i Tutangata is the Director of the South Pacific Regional Environment Programme based in Apia.

MARSHALL ISLANDS

Tuna plant for Majuro

Construction on a \$US5 million tuna processing factory is underway in the Marshall Islands capital, Majuro. The project involves San Francisco-based Pacific Micronesia and Orient Line (PM&O) and American tuna giant Star Kist. The Marshall Islands Government, PM&O and the Bank of Marshall Islands officials have signed the agreement confirming the \$US2 million loan for the new fish loining plant.

PM&O regional manager, Keith Fawcett said the plant was expected to be operational by October and would generate 300 jobs for Marshall Islanders. Local officials have hailed the jobs and revenue the plant is expected to bring to the citizens of Majuro. The new loining plant, which will process tuna to be canned in American Samoa will reduce the amount of time fishing vessels spend away from fishing grounds. "If a purse seiner has to go to American Samoa to off-load its catch at the Star Kist cannery, it will take as much as 30 days." Fawcett said.

The Marshall Islands Marine Resources Authority is providing security for a \$US2 million loan through the Bank of Marshall Islands, while PM&O is investing \$US3.2 million for the loining plant. "This will be a showcase project for the Marshall Islands," said the Government's Private Sector co-ordinator, Robert Muller. "It will show that Marshall Islands is becoming attractive for foreign investments," Muller said.

Purse seiners owned by Star Kist, the largest producer of canned tuna in the world, will feed tuna to the factory. PM&O, which already provides a monthly container shipping service to the Marshall Islands will ship the processed and frozen fish directly from Majuro to Star Kist's American Samoa factory for canning.

Source: PACNEWS, August 1999

KIRIBATI

Seaweed earns money for tiny atoll nation

Chances are sometime in the last couple of weeks most people in the developed world chewed into carrageenan and there is a reasonable chance it came from Kiribati. It comes from a particular kind of seaweed that is being grown commercially in the Philippines, Indonesia and, increasingly, in Kiribati. "This is the great economic hope for this place, particularly Christmas Island," says Michael Tinne, a management adviser to the Kiribati Government owned Atoll Seaweed Company Ltd.

It has bailing plants on Betio in Tarawa and Christmas Island which exports the seaweed to a Danish company. It extracts the carrageenan from the seaweed for use as an emulsifier in around 60 percent of all processed foods, toothpaste and cosmetics. The seaweeds it comes from, *Euchema cottonii* and *Euchema spinosum*, do not occur naturally in Kiribati but are imported as clippings from the Philippines—they grow very well off ropes staked down knee high in lagoons.

Tinne says water flow and ensuring they are kept covered are crucial to the operation. The seaweed grows fast and can be cropped three to six months after being put down in the lagoon. "It is a cash crop which gives good returns for farmers provided they

make the effort." In Kiribati it currently competes for labour from copra which is subsidised under the European Union's (EU) Lome Convention.

Because of the need for a reliable water flow the seaweed grows best within five degrees of the Equator which is the typhoon free area of the globe. The world spot market price for the seaweed varies precisely because the market is vulnerable to the typhoons which routinely roll through the Philippines. Cyclones killed prospects in Fiji several years back.

The operation in Kiribati is backed by the EU and the New Zealand Government. It buys the seaweed from farmers throughout Kiribati who, before they sell it, must dry it on the beach first, taking the moisture level down to 35 percent. It is then bought to Tarawa or Christmas Island where it is pressed into 50 kilogram bales and exported.

In 1996 Kiribati managed to export around 1246 tonnes of seaweed and next year Tinne says he believes they may manage around 2,000 tonnes. The price varies from around US\$550 to US\$675 a tonne. The attraction of the operation is that once over the fixed costs of the operation, any surplus is all profit for the growers and Atoll Seaweed.

Kiribati's contribution to the world trade of around 70,000 tonnes is modest but the Danish buyer likes the Kiribati supplier because, unlike the Philippines and Indonesia, it is a good deal more politically and environmentally stable. Tinne believes there is no reason why Kiribati cannot lift production up to around 4,000 tonnes per annum although as a relatively labour intensive crop it needs people in the right places to produce.

Seaweed's future could, in part, depend on whether the EU's stabex fund will continue to pay a big subsidy on copra. Currently there is an incentive to landowners to concentrate on copra, despite failing markets, rather than seaweed.

Source: *Pacific Islands Monthly*, July 1999

NAURU

Nauru's new \$AUS10 million boat harbour project at Anibare will be ready by March 2000

Nauru's Fisheries Minister, Godfrey Thoma, in a statement to Parliament said the Government had been able to secure the lease of nine of the 11 pieces of land from local landowners for the project.

"The Government expresses its gratitude to the landowners who have leased their lands to the Authority to enable the project to proceed as planned". Construction work, which commenced last month, involves the construction of a boat basin and the widening and deepening of the existing channel at

Anibare. The Anibare Community Boat Harbour project is funded by the Japanese Government.

According to Thoma, the Anibare Community boat harbour, once completed, will enable local fishermen to operate larger fishing boats. The new boat harbour will also serve as an alternate port for cargo handling should the westerly winds and rough seas prevent normal shipping operations at the harbour, he said.

Source: *PACNEWS*, June 1999



Anibare bay before the harbour project

Nauru's new fish market project complete

Nauru's new Fish Market Project is now in operation. Construction of the new market began in December last year.

Chief Executive of the Nauru Fisheries and Marine Resource Authority (NFMR), Anton Jimwereiy, said the project is intended to provide the people of Nauru with more fish for consumption through new fishing activities.

"The primary objective of the Fish Market Project is to provide a facility where local fishermen can readily sell their catch, and for local consumers to purchase good quality, reasonably priced fish," he said. The total cost of the project is approximately \$AUS0.75 million, which is funded by the NFMR.

Source: PACNEWS, July 1999

SOLOMON ISLANDS

Black pearls cultured in the Solomon Islands

Solomon Islands has harvested 800 black pearls, a record number since the country started the aquaculture farming project. The black pearl farm at Gizo in the Western Province is the first to successfully culture pearls since the project started two years ago. A pearl farmer from the Cook Islands was contracted to operate on oysters to produce pearls and recently returned to extract them.

Principal Farm Scientist, Doctor Johann Bell says another farm has been set up in Noro, also in the Western Province as a back up for the Gizo farm. The Solomon Islands Agriculture Ministry has not revealed the value of the 800 black pearls harvested. Dr Bell said the result of the research on black pearl farming is of great significance to the country.

Source: PACNEWS, April 1999

The Beche-de-mer divers of Ontong Java Atoll

by Bob Gillett and Michelle Lam

Ontong Java is one of the more isolated places in the Solomon Islands. Located about 500 kilometres north of Honiara, it is about halfway between the capital and the equator. The nearest major island is Isabel Island about 250 kilometres to the southwest. Ontong Java is a classic atoll—a ring of about 120 small islets on a reef surrounding a large lagoon. None of the land is more than a metre or so above sea level.

The island was first sighted by a European in 1643. Abel Tasman named it Ontong Java because it resembled some islands near Java in Indonesia. The island acquired another name, Lord Howe, by the Captain Hunter in 1791. Although both of these names have stuck, the atoll has always been known as Luaniua to the people who live there. An interesting feature of Ontong Java is that its inhabitants are actually Polynesians, as distinct from the darker-skinned Melanesians on the neighbouring islands. The Ontong Java people are closely related to those of Tuvalu and Tokelau islands north of Samoa, over 2,000 kilometres to the east of Ontong Java. There are actually several of these Polynesian outlying islands in the Solomons (the islands of Sikiana, Tikopia, Anuta, Rennell, and Bellona), as well as others in Papua New Guinea and the Federated States of Micronesia.

Ask a visitor to Ontong Java what they remember about the place and you will hear stories of incredibly tidy villages, tattooed elderly people, pristine white sandy beaches, large numbers of very inquisitive children, and custom dancing throughout the night.

As with most atolls, the land resources of Ontong Java are quite limited. The few food plants and limited economic opportunities on land have encouraged the residents to make maximum use of the 2,000 sq km lagoon and nearby ocean. This has resulted in the Ontong Java people being excellent fishermen, divers and sailors. Quite simply, if they were not skilled ocean people, they would have perished centuries ago.

In addition to the seafood used for local consumption, the two most important marine resources of Ontong Java are trochus shells (used for making mother-of-pearl buttons) and beche de mer (mainly exported to Asia for food). These two products have formed the backbone of the Ontong Java economy for most of the current century. Beche de mer is an interesting commodity. The term refers to the dried product manufactured from the marine animals commonly known as sea cucumbers, sea slugs, or more scientifically, holothurians. According to G. L. Preston,

an authority on beche de mer, there are about 1,200 species of holothurian worldwide, but only about 300 are found in the shallow waters of the Indo-Pacific region. Of these less than 20 species are currently exploited for beche de mer.

Beche de mer is produced by a process of boiling, cleaning, drying and in some cases smoking. The finished product, which has a hard rubbery texture, is normally rehydrated by repeated soaking or boiling prior to consumption. The product is considered a delicacy and an aphrodisiac in China and South-east Asia where it is principally consumed.

Beche de mer has been especially important in Ontong Java in recent years. Because the prices up to S\$130 per kg (US\$27/kg) are paid on the island for the product, it is easy to understand why diving for these creatures is big business in a place where there are few economic alternatives. The high prices have, however, led to the overexploitation of beche de mer in the shallow water of Ontong Java. Because SCUBA and other forms of compressed air diving are not allowed on the atoll, deep free-diving for beche de mer is currently a major occupation of young Ontong Java men.

To learn more about Ontong Java diving we spent a day with Kelaepa, an 18-year-old beche de mer fisherman. Kelaepa is the leader of a four-man diving team, which includes two other divers (11 and 12 years old) and a person to man the canoe (10 years old). According to Kelaepa, he has been diving since he was 12 years old and that young divers are much better because they can dive deeper. It is said that after 24 years of age, the boys can not dive nearly as deep and they “retire” to easier types of fishing.

The actual diving techniques are interesting. In water 20 metres (65 ft) deep, using mask, fins and snorkel the boys hyper-ventilate then slowly descend (rather than race against time) to the bottom using only a partial “dog-paddle” type arm stroke. They are able to remain leisurely at that depth for a considerable period, before calmly, slowly rising to the surface. The absence of any long arm strokes or quickly scratching back to the surface at the end of the dive is noticeable.

In water deeper than 20 meters, a “torpedo” is used to collect beche de mer. This device is a lead weight with finlets and a barbed shaft at one end. Mono-filament line is attached to the other end. When a beche de mer is spotted in deep water, the torpedo is dropped over the target. Like a wire-guided missile, the torpedo can be directed after a launch by tugging to one side on the fishing line. If the diver is a good shot, a beche de mer will be stuck and subsequently pulled to the surface. Pity the poor turtle which may stray into range.....



Beche de mer diver, Ontong Java

The diving is not without danger. According to the Ontong Java divers, sharks are sometimes plentiful but rarely cause problems. Of far greater concern is free-diving blackout. Deep diving for six to eight hours per day can be very exhausting, especially when there are competing divers in the area. It is not uncommon for Ontong Java divers to lose consciousness while holding their breath down at 20+ metres. According to Pakoa, another beche de mer diver, this has resulted in several deaths in the past few years.

This danger does not seem to bother our friend Kelaepa. Diving is the only employment he has ever known and is the only work which interests him for the future. Of greater concern to Kelaepa is the supply of beche de mer.

Presently there are high prices for beche de mer, a huge overseas market, and eager divers. These factors, combined with the limited area of the Ontong

Java lagoon, has resulted in a situation where over-exploitation is becoming a serious problem. Too much beche de mer is being harvested. Without some form of regulation, the market forces could easily drive the Ontong Java beche de mer resources to commercial extinction. To prevent over-exploitation of this precious resource, the leaders of Ontong Java have devised a home grown management system. To assure sustainability, the island's authorities close the island for beche de mer during alternate years.

During the closed years, the lagoon is open to trochus diving. Although there are problems (coordination between the two villages, commercial temptation to keep the season open), it seems to reduce somewhat the fishing pressure on the beche de mer, while providing alternate employment for the divers during the closed season.

The future for Kelaepa and his diving team is unsure. Whether they will be able to continue with their favoured occupation of beche de mer harvesting depends largely on this management system and the determination of Ontong Java's leaders to make the system work.

The Ontong Java visit was done in the context of the Pacific Islands Comparative Coastal Management Study supported by the World Bank. For further information about the study or the Ontong Java visit, please contact Mr Robert Gillet at Box 3344 Lami, Fiji.

The finding, interpretations, and conclusions expressed in this article are entirely those of the author(s) and should not be attributed in any manner to the World Bank, to its affiliated organisations, or to members of its Board of Executive Directors of the countries they represent.

NEW CALEDONIA

Export market

The territory is once again on the list of countries authorised to export seafood products to the European Union after its special export dispensation expired on 1 January 2000. On March 23, the European Union approved the territory's new food hygiene and sanitation regulations.

However, the test is not over until European Union inspectors visit the territory later this year to ensure the required standards have been attained.

Meanwhile, companies have been invited to submit their candidature for the construction of a prawn packaging factory in the northern province, where prawn farming is a major activity. Currently the territory's only prawn packaging factory, situated in its southern province, cannot cope with the amount of production. The majority of New Caledonia's prawns are destined for overseas markets.

Source: *Islands Business*, May 1999

WALLIS AND FUTUNA

The fisherwomen of Futuna

The Territory of Wallis and Futuna lies 600 km northeast of Fiji and 300 km west of Samoa. It is the smallest of France's three South Pacific territories and remains relatively isolated from its neighbours geographically, culturally and politically. The Wallisians are descended from the Tongans, while the Futunans are descended from the Samoans, and the local language spoken on each island reflects these roots. The total population is around 14,400 with a similar number estimated to be living in New Caledonia.

The majority of the working population of Wallis and Futuna (80%) live off traditional agriculture and fishing. In Futuna the women are very involved in fishing as well as reef gleaning. The men look after the gardens which are often located a long way from the villages, on the steep slopes of the hills, while the women need to stay closer to home.

Fishing and reef gleaning enable them to work close to the family.

It is interesting to see the way the geography of Wallis & Futuna has dictated the traditional roles of men and women—on Futuna, the villages are built around a very narrow coastal strip and the gardens are planted on the mountainside, which rises abruptly from the sea. To work the gardens means a steep climb and time away from the home. Men do go fishing in small boats (trolling, and bottom fishing), use cast nets and spear lobsters, but it is mainly the women who provide the daily seafood on Futuna. The island of Wallis is relatively flat compared to Futuna and gardens do not have to be made in difficult terrain so far away from the villages. The women of Wallis are not involved in fishing in the same way as the Futunan women.



The gardens on Futuna are built on the steep hillsides due to a lack of flat land



Women preparing to go fishing by rubbing tumeric and coconut oil onto their skin

Harvesting

The women of Futuna have a number of beliefs and ways of behaving about fishing which can make it difficult for an outsider to study the fishing techniques. They believe you shouldn't talk about fishing before you go, you must keep quiet and serious when preparing the gear "so the devil doesn't follow you and prevent fish from entering the nets." Men have some of the same beliefs and feel atten-

tion shouldn't be drawn to the fact that they are going fishing, they and their family will avoid talking too much about it. Both men and women believe that you should not have a child crying in the house when you go fishing.

Before the women go fishing they rub tumeric mixed with coconut oil into their skin as protection against the sun. The women are quiet and cautious about being observed while actually fishing. When

returning at low tide to pick up nets set at high tide, the quiet atmosphere changes—the women now talk loudly, joking and laughing. The catch is divided up by the most senior woman and shared amongst the fisherwomen.

Processing and Handling

Processing techniques include gutting and cleaning, boiling and frying, salting and smoking over an open fire. The initial handling of the fish is quite rough and they are often left lying in the sun for some time; quality and shelf-life could be improved by some simple modifications of the way the fish are treated immediately after capture.



Marketing

There is no local market or central place for selling seafood or other products. Fish are sold for CFP600/kg directly to the people or CFP700 to the shops. The manager of one supermarket finds it cheaper to import frozen fish from New Zealand (mullet, cod, salmon) than to buy local fresh fish. It is likely, however, that Futunans will continue to prefer local fresh fish. There is no ice made on Futuna and no fish are sold to Wallis, making the further development of marketing difficult.

Dividing up the catch after fishing

There is still a relatively low use of imported, poorer quality proteins such as tinned beef, tinned fish, mutton flaps etc. (compared to other parts of the Pacific).

Source: SPC Community Fisheries Section Travel Report for Wallis and Futuna, (unpublish.) May 1999

FIJI

Indigenous Fijians to get ownership of traditional fishing grounds

Fiji's Cabinet has approved the drafting of new legislation which would give indigenous Fijians ownership rights of their customary fishing grounds or qoliqoli. A Cabinet statement said the decision honours a long-standing request from the Great Council of Chiefs and on the recommendation of the Prime Minister and Minister for Fijian Affairs, Sitiveni Rabuka.

Presently the customary fishing rights of Fijians to their qoliqoli are limited to the right of usage. The ownership rights to these areas are vested in the State under the Crown Lands Act. The Fijians customary rights of usage of their qoliqoli are provided under the Fisheries Act. The Cabinet statement said the draft legislation would be referred to the new Government and Parliament for approval after next month's general election.

"In taking this decision, Cabinet assures other communities in Fiji that their rights or access to the waters and fisheries concerned will continue to be respected. All they need to do is to continue what they have been doing now; seek the permission of the traditional fishing right owners for access to their customary fishing area for subsistence purposes," the statement said.

"For commercial fishing activities, the requirement for a licence will continue to comply. The general right of access to the public, and the right of transit passage by boat owners and vessel operators through these waters, will also continue to be respected."

Source: PACNEWS, April 1999

SPC launches new community radio station in Fiji

A new community radio station, which will be used to train Pacific Islanders in radio production, has been officially launched near Suva, Fiji.

The radio station, for trainees at the Secretariat of the Pacific Community's (SPC) Community Education Training Centre (CETC), will broadcast to the suburb of Narere and surrounding areas. The new facility will be managed and operated jointly by CETC and SPC's Regional Media Centre

The trainees, from 16 Pacific Island countries, are in Fiji to study community development. Since May they have been learning to operate the studio equipment in preparation for the start of broadcasting. Training will include collection of information, packaging of news items and on-air broadcasting.

According to CETC Principal, Nu'ufou Petaia, radio skills are an important part of training of community workers. "We know in the Pacific Islands radio is one of the most widespread and effective means of communication," she said. "So, with our radio licence and new studio facilities, we are able to put this into

practice. And at the same time, our station will be a wonderful asset for the local community by broadcasting community news and announcements."

Facilities, funded by New Zealand Official Development Assistance (NZODA) include an on-air studio and a production suite, in addition to the transmitter and mast. The new station is licensed to broadcast within a four-kilometre radius around the Narere campus of CETC, on a strictly non-commercial basis.

Source: PACNEWS, July 1999

TONGA

Tonga praises Samoa's efforts to develop fisheries in the region

Secretary of Tonga's Ministry of Fisheries, Akauola, says Samoa has shown what can be done to develop fisheries in the region. "This has not been done by gigantic tuna fleets, experts or expensive consultants," Akauola told the 39th Forum Fisheries Committee meeting held in the Samoan capital, Apia.

"It has been done on the backs of the fishermen and fisherwomen of Samoa," he said.

Akauola said Samoa had paid heavily in terms of loss of life to fishermen, in reference to an estimated 30 who disappeared at sea hunting tuna during the fishing boom that started in 1994. "But in this country it has also been told young men have always come forward in time of need to do things, to carry the burden and to develop what must be developed. And on the backs of these young people, has grown what to me is the most exciting fisheries project in the whole of the Pacific."

"I would like to use this opportunity to record my thanks to your Ministry of Fisheries for accepting some of our people from Tonga to come and to study your methods of fishing so that we might also share in the amazing development that has happened here in the last few years."

Source: PACNEWS, May 1999

ADB consultant says Tongan businesswomen need assistance

An Asian Development Bank (ADB) consultant says Tongan women who have the potential to develop successful business ventures need assistance, particularly from credit sources. Dr. Atu Emberson-Bain

said women in Tonga also need technical assistance for training in business and financial management. This, according to the consultant, could be done by facilitating a congenial credit line within the ADB's

ongoing loans programme to the Tonga Development Bank. Dr. Emberson-Bain said Tongan women demonstrate strong organisational and entrepreneurial skills in the informal and small business sectors.

However, women trying to run businesses are disadvantaged by a lack of business management and accounting skills which inhibit their ability to run their enterprises efficiently and profitably.

Source: PACNEWS, May 1999

SAMOA

Village-Based Marine Resource Management in Samoa

by Mark Mollica

Introduction

Due to their volcanic origin, the Samoan islands are highly inhospitable to inland population growth. Rainfall tends to seep through the porous volcanic rock lying under thin layers of soil. Because of this, there are few major rivers and they are all susceptible to wide swings in flow rate. Toward the coasts, however, as is readily apparent on the larger island of Savai'i, the rainwater surfaces as countless springs. This is one of the most significant factors influencing virtually all of Samoa's approximately 160,000 people to live within one kilometer of the ocean. The second major factor controlling population distribution on the islands is reef growth. Upolu, though much smaller than Savai'i, supports the bulk of Samoa's population. This is due, in large part, to the fact that Upolu is surrounded by a long, but thin, barrier reef that contains the large majority of Samoa's 23,100 hectares of reef and lagoon.

Since Samoa remains a "least developed country" as defined by the UN, few Samoans have removed agriculture from daily life and economics, whether cash or subsistence. In addition, the Samoan economy offers very few opportunities for employment outside the agricultural and fishery sectors. Qualified Samoans will take either one of the few government or private sector jobs, or as is often the case, leave the country. To limit options even further, Samoan agriculture is plagued by erratic productivity rates, such as the case with their fungus-induced taro blight, and dismal global prices for another major crop, copra (coconut meat).

These geological, biological, and economic factors have put a great amount of pressure on the ocean to provide protein to the islands, and so fishing is integrated into daily life. The economic factors mentioned above, coupled with foreign aid programs, have made artisanal or commercial fishing an increasingly attractive vocation.

Given this pressure and change in Samoan fishing methodology, the focus of the ensuing text is to illus-

trate the relationship of contemporary Samoa to its marine food resources. This includes a look at the importance of self-governance and the growing ethic of ecological stewardship that Samoans are adopting (or it could be argued re-adopting) to mitigate the increasing demands they are making on their ocean.

Traditional Oceanic Marine Resource Management

Samoan reef systems are not very extensive. Compared to an island nation such as Palau, for example, the maximum sustainable yields of these reefs are small in relation to population size. Because of this, and the fact that the growing number of rural Samoans (which is to say nearly all Samoans) are fishers to some extent, the health of inshore fisheries has become increasingly critical. The numbers and size of reef fish in Samoa indicate that the reefs are overfished, and that certain restrictions must be put on the wide variety of fishing methods employed by villagers.

Traditionally, oceanic cultures have developed a wide breadth of measures to effectively manage their reefs. Fishing has long been among the most important of all daily activities and because of this, villagers have become highly sensitive to the general behavioral, developmental, mating, and migratory patterns of many species of fish. This knowledge became so acute that the world's leading marine biologists now owe a substantial part of their literature on tropical ecology to Pacific Island fishers.

A striking example of this came from biologist R.E. Johannes' collaboration with Palauan fishermen. According to Johannes (1981) "While I was in Palau in the mid-1970s, local fishermen taught me the seasons and lunar periods (as well as locations) of spawning aggregations of some 55 species of food fish. The fishermen of this tiny Pacific Island country had, it turned out, discovered more than twice as many species of marine animals exhibiting lunar spawning periodicity in their waters as biologists had described for the entire world."

Johannes then claims that this intimate awareness of marine ecology is quite common throughout Oceania. He later gathered more information on lunar periodicity from fishers in Kiribati, the Marshall Islands, Papua New Guinea, Pohnpei, the Solomon Islands, Western Samoa, and Yap.

Naturally, with this degree of knowledge, Pacific Islanders were able to decipher hazards to their livelihood. For instance, they might know when a certain species was in danger of overexploitation, or when not to fish for a certain species (such as the very beginning of their mating season), in order to ensure that the reef will continue to be a fertile provider for the village.

Possibly the conservation method most fundamental to remote Oceania was the incorporation of fisheries into the local land tenure system. Pacific Islanders have had, and continue to have, some of the most decentralized political authority in the world. Historically, the base for almost all power remained firmly in the village hierarchy. As a consequence, national resource control was extremely weak. Samoa has retained some of the Pacific's most tenacious village power. Because of the strength of local authority, Samoa tends to have fishing rights based on ties to the village. As in most states, the area from high water out to sea is legally public domain, but in practice, the inshore fisheries remain under village control.

The reason for the success of this system as a conservation method is well illuminated by scientist Garrett Hardin's eco-economic classic, "The Tragedy of the Commons." In this essay, Hardin (1968) argues that "ruin is the destination to which all men rush, each pursuing his own best interests in a society that allows freedom of the commons." This means that when a resource is shared by the general population, without taboo or privilege, the economically rational fate of the resource is over-exploitation as every actor seeks to further his or her own best interest.

In the case of a Samoan village, the fishery is indeed shared, but by a small community of people who are closely tied by kinship and form a relatively self-reliant unit of production. If a fisher catches more than he can consume, he will distribute his catch among others who are likely to return the favor at some point in the near future. When a village fisher is harvesting from a patch of reef that he must continue to use throughout his life, he is more likely to acknowledge the limits of that resource than if he could roam freely among other villages' reefs.

However, reef tenure is only the first line of defense. A fisher might still decide to fish in the most effortless but destructive way possible bringing what is known as the "freerider" dilemma. This relates

directly to Samoan village controls enforced on practices such as using *ava niukini*, the root from a local plant, as a fish poison. In order to maintain a reef, many highly effective fishing techniques must be limited. When an individual uses fish poison simply because he is too lazy to hand-spear, he is being a highly effective fisher at the expense of the village. Similarly, because it is so easy to slingshot a crescent perch or trap a mullet, village leaders are initiating controls accordingly.

Historically, specialization would often provide yet another barrier preventing over-exploitation. Yap, for instance, developed an elaborate hierarchy that dictated exactly what form of fishing you were entitled to pursue given your social standing. Related to this, many islanders would be trained for a specific fishing method and were given no opportunities to learn, let alone practice, other methods (Falanruw 1994). This form of control helps to ensure that the village is exploiting as wide a variety of organisms as possible. For example, if there was a trained elite that could head for the open ocean and bring home shark and tuna, then they were helping to minimize the impact that usually falls on more easily caught reef fish.

Before Christianity had its enormous impact on the Pacific, religious taboos and magic were often associated with fishing. In Kiribati, fishing was given heavy meaning and was surrounded by ritual. This would inevitably tie the fisher to the sea spiritually, and give him a feeling of respect for the creatures therein. In this culture, fish catches were carefully monitored so that not a pound more was taken than was needed in a show of reverence for the ocean. Also in Kiribati, the belief that the gods were once embodied in the turtle and the ray forbids any capture of these animals and reinforces the spiritual link of fisher to resource (Taniera 1994).

Far before anyone had muttered, "marine protected area," the people of the tiny atolls of Tokelau had created the *lafu* system. *Lafu* is most closely translated as "taboo," and was, in effect, an established marine preserve. An example of *lafu* is prohibiting activity on the entire windward reef shortly after the



bi-annual change in direction of the prevailing wind (Tolosa et. al. 1994) which not only demonstrates an understanding of the limits of reef resources, but also shows an understanding of fish mating behavior associated with these meteorological changes.

Also, Tokelauans rightfully regard offshore pelagic fishing (mostly for billfish and tuna) as a vast bounty in comparison to the resources offered by their reefs, and so a good offshore fisher is given elevated status and privileges in the village for his skill. This has the ecological benefit of encouraging fishers to extract less from the reef, where bounty is far more tenuous.

By and large, the most powerful forces undermining values like these in the South Pacific are the introduction of cash economies and the possibility of selling fish for export. The immediate effect of these interrelated phenomena is twofold: they encourage fishers to remove as much as possible from the ocean and, by switching from subsistence to cash fishing, remove that food source from the immediate vicinity. In a subsistence economy, there is absolutely no reason to remove more from a resource than can be consumed at the local level, which is usually a rural village. Cash economies and later exporting, however, provided a far wider avenue through which the catch could be allocated. This removed the most essential reason for modest, and therefore usually sustainable fishing.

The effect of these modern wants at the village level has often been to undermine an ecologically sound relationship between the fishery and its fishers. Even in the islands of Palau, where people are raised in a profoundly intimate relationship with the ocean, Japanese influence during the Second World War had local fishermen using fish bombs to such an extent that stocks seemed dismal. To the blessings of most of the local fishers, dynamite fishing was banned after the war, yet as late as the 1970s, there remained a number of fishers hoarding and using fish bombs.

Village-Based Marine Resource Management in Contemporary Samoa

In Samoa, where many villages have undergone population changes and have lost (or less likely, never had) a great deal of their traditional conservation taboos, awareness of the limits of the ocean is surfacing. A rapidly growing number of villages have been requesting the assistance of the local Fisheries Division in order to assess the health of their reef and take steps to improve that reef and therefore, their well-being. Modern Samoan fishers are virtually all reef fishers, while only those with expensive motor boats and a decent landing area head for the open ocean. The motor boats tend to

aggregate as private enterprises near market areas, as in Salelologa and Apia, and do not tend to distribute their catches among the local people communally. Because of this, villagers who do not own a motor boat (which is nearly all villagers) remain removed from the offshore fishery, and therefore put a great amount of stress on inshore resources.

Today, the primary concern in Samoan marine resource management is to get villagers offshore where food resources are exponentially more resilient. In the near future, the most influential factor in this effort is likely to be an E.U. subsidy that provides 65% of the cost of outfitted 15' motor boats. These boats are reasonably affordable to village committees and other groups that are likely to use the boat more communally than the larger alia - the FAO-designed, aluminium vessels currently used for commercial offshore longlining and bottom fishing.

As was stated earlier, the seat of power in Samoa remains almost entirely within the matai, or village chiefly system. Because of this, and the small funds afforded by the Samoan tax base, hiring boats and officials to monitor fish catches and methods is impossible. Fishing regulations must be enforced at the village level or they are as good as nullified. Therefore, the best enforcement method is to persuade the matai that it is in their village's best interests to fish in an ecologically sound way. With this understood, they will take it upon themselves to enforce the measures appropriate to their village. This not only exponentially increases the level of monitoring on the reef, but also minimizes expense to the national government.

In a program initiated by the Australian aid agency, AusAID, and the Samoan government, the Samoan Fisheries Division has carried out the philosophies of village-based resource management, providing motivational and educational support to the village through extension officers. At the invitation to the Division by the village, extension officers and villagers begin a multiple-step process toward developing a unique Village Fisheries Management Plan. In the early stages, the key problems are assessed through a series of meetings with different village groups. By speaking with the villagers in meetings based on status (e.g. separate matai, untitled men, and women's groups) less inhibited expression than the hierarchical fora of a village-wide meeting is encouraged.

After each of these groups sketches out what it considers to be the village's key problems and what possible solutions there might be, they nominate three people from each group to move onto the village Fisheries Management Advisory Committee (FMAC). The FMAC continues to meet with extension officers to refine the problems, solutions, and

actions to be taken by the village and the Fisheries Division. The Committee then prepares a draft of the Management Plan, which is again discussed and refined. The Village Fisheries Management Plan is, according to King & Faasili (1999) “in the form of an agreement between the village and the government in that it lists the resource management and conservation undertakings of the community, and the servicing and technical support undertakings required from the Fisheries Division.” This agreement, finalised in a formal ceremony with the Senior Fisheries staff and the village council, essentially ensures that the Fisheries Division will provide whatever technical assistance the village needs as long as the village is active in enforcing the Management Plan. Penalties for violations are decided by the FMAC for each crime; some numbers I obtained at a meeting in Vailoa in the Aleipata district include a \$SAT200 fine for fishing the Marine Protected Area and a \$SAT100 fine for violations of net mesh size.

Some of the controls established by villages in the Management Plan include:

Fishing Methods

- bans on the use of chemicals and dynamite fishing.
- bans on the use of plant poisons.
- bans on other destructive methods such as smashing coral to catch sheltering fish.
- mesh size limits.
- village-level enforcement of national laws regarding minimum size limits.
- restrictions on underwater flashlight fishing.
- controls on chicken-wire fish fences.

Conservation Measures

- establishment of small Marine Protected Areas in which all fishing is banned in part of their traditional fishing areas.
- organising regular collections of crown-of-thorns starfish, *Acanthaster planci*.
- bans on rubbish dumping in lagoon waters.
- bans on the sale of sea cucumbers for export, and the sale of live corals to the aquarium trade. These have been imposed by villages with commercial export experience.
- bans on the destruction of mangroves.
- bans on the removal of beach sand.

Because fishing taboos compounded by the already depleted reefs make pre-recovery fishing very unproductive, the Fisheries Division made some reciprocal efforts to assist the villages. For example, they have started to restock giant clams in the participating villages' reef areas, and have initiated tilapia fish farming in some. Tilapia are fresh water fish that grow quickly to large sizes in small ponds and have

proven acceptable to some Samoan tastes. They are very easily cared for; only a manure fertilizer is needed to grow the algae on which they feed. The Fisheries Division also facilitates the purchase of EU-subsidised boats in order to get fishermen offshore. These efforts are designed to offset the initial scarcity in food supply that the village is likely to experience when commencing their Management Plan.

Conclusion

Traditional response mechanisms to Samoa's growing marine scarcity remain somewhat active at the village level, but have proven to be inadequate if excellent inshore fishery health is sought. Because of this, the Fisheries Division has commenced a subsistence fishery program that reinforces what the villagers usually already know about conservation, and motivates them to establish rules for caring stewardship that will bring them times of abundance in the future. This is influencing fishing methodology from trapping to netting to traditional poison fishing.

Perhaps more importantly, Samoan fishers are involved in making decisions to change their fishing grounds as well as their methodology, moving away from the reef in order to harvest some of the relative bounty of the deeper ocean. This has brought more food, but also increased danger to the fishers as great numbers venture into waters where-in they have very little experience. This danger should lessen as the modern offshore fishery matures and safety education programs take effect.

Comparatively speaking, Samoa is in a fairly good position with regard to its fishing methods and management capabilities despite its modest wealth. Because of their biodiversity and resilience, Samoan inshore waters could recover immensely if given the chance. With the support that Samoan extension officers have been receiving over the past few years, there is good reason to believe that they will be given that chance. The inshore fishery also has the advantage of being in a country with few rivers, sewage systems and little industry. Lastly, the limitations of national governance in fisheries management is more than offset by the wealth of power seated at the village level.



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AUSTRALIA

Native claim made over Torres Strait

A native title claim is to be lodged over the entire Torres Strait, which separates northern Queensland in Australia from Papua New Guinea. The Chairman of the Island Co-ordinating Council, Getano Lui said his organisation and the Torres Strait Regional Authority will lodge the claim after recent archaeological discoveries in the Murray Islands. Scientists have found artifacts that suggest continued human existence on the island of more than 3,000 years.

Lui said the claim would cover the sea and land in the Torres Strait. "This would be unique to Torres Strait, simply because of the fact that I believe now is the time to strike. It's a matter for the (Australian) Government really to prove to us that we didn't exist, and not for us to say to the Government why we existed. So I think the ball is squarely in both the State and the Federal Governments' court," he said.

Source: PACNEWS, April 1999

WHAT'S HAPPENING

OUTSIDE THE REGION



SOUTHEAST ASIA

Coming Together to manage Fisheries: Answers to Frequently Asked Questions on the Stakeholder Approach to Fisheries Management

by Rathin Roy

What exactly is the Stakeholder Approach to Fisheries Management?

Fisheries Management has traditionally been seen as something that governments or Departments of Fisheries do. Rules & Regulations are issued and enforced by law. The problem is that enforcing rules is costly, especially when fisheries are scattered along long coastlines and do not believe in the rules being enforced. And, fishers do not like to follow rules and regulations unless they believe in them. The Stakeholder Approach to Management (SHM) of Fisheries tries to overcome these problems and attempts to bring together all the stakeholders into the management process.

What does this mean? Groups concerned with fisheries, such as fishers of different types, traders, money-lenders, wholesalers, retailers, consumers, government agencies, fishery agencies, and non-governmental organizations are brought together to identify the problems facing the fisheries from different points of view, to come up with mutually acceptable solution options and management plans, to implement and monitor the management measures and to help enforce the law.

Who are the stakeholders? I can see the logic of including several of the groups mentioned but how do you justify including consumers and non-governmental organizations?

A stakeholder is broadly defined as anyone who is either involved in a fishery or one who influences the behavior of the fishery. For example, fishers

concentrate on fishing for what consumers of fish want. If consumers want a particular type of fish and are willing to pay a good price for it then fishers will catch it irrespective of whether it is good or bad from the point of view of management.

Non-governmental organizations (NGOs) concerned about the environment or about the quality of life of fishers may support or object to certain fishery-related activities. It makes no sense to ignore them as they can mobilize public awareness and concern and put obstacles in the path of the fishery sector. Involving concerned NGOs in the process of management rather than treating them as adversaries therefore becomes important.

Bringing a lot of different types of stakeholders into the process of fisheries management seems like a good idea but it is bound to complicate matters. Are you sure stakeholder approaches to management are really necessary?

The main reason why SHM holds promise in fisheries is because of the very nature of the problems confronting fisheries.

Let us pause a while and look at the issues in coastal fisheries. Fisher populations are increasing. This increase is multiplied several times when you consider the accelerating effect of technology: bigger boats, motorization, more efficient fishing gear and of course a lot more gear. All this leads to over-fishing, which in turn means reduced catch per unit of effort of fishing and lowered incomes. To make matters worse, pollution from industries and agricul-



ture and sewage from coastal cities are affecting coastal marine ecosystems and the very habitat of the fish. Fishers, desperate for incomes, are using destructive fishing methods like trawls and small-mesh gear.

Driven by customer need they are targeting juvenile fish and gravid fish, all of which affect fish stocks and catches. The scenario on land is no better. Fishers have little access to land or alternative income sources, making them totally dependent on fishing. Traders, who often control informal credit, earn their profits and get back their investments by using their clout to buy fish cheap.

Before we agree on the benefits of using SHM we need to look at the nature of these problems because it is this that will suggest the nature of the solution. It is obvious that there is a need to manage fisheries and their habitats if present and future generations of fishers have to make a decent living and provide food for others.

The Nature of the Problem

First, there are too many stakeholders (with little or no power to make a difference), each with their own perceptions of what the problems are. Even one unhappy or dissatisfied group can block the process of solving problems affecting the majority. Implementation and enforcement of management regulations is almost impossible, not to mention prohibitively expensive, unless all the stakeholders agree to the regulations and help in enforcing them.

Community-based management, otherwise an excellent approach, often breaks down because the fish stocks to be managed do not respect community and political boundaries. The learning here is that **we need a mechanism of management that can bring in all the stakeholders to agree on problems & solutions and participate in management and enforcement.**

Secondly, the marine ecosystem and the social ecosystem of the concerned people are both very

complex. We lack good data, information and knowledge. Everything seems to be connected to everything else, and any action taken has delayed and often unpredictable results. It is very difficult to pin down precise causes for problems.

The learning here is that **it is difficult to come up with nice, clean, universally acceptable solutions to fisheries problems. The only way out may be to become precautionary and come to negotiated agreements not only on problems but also on solutions.** This again will require the involvement of all stakeholders.

Thirdly, solutions to fisheries problems often lie in other sectors, beyond the reach of fishery agencies. Pollution from industries, agriculture and human habitats are destroying fishery habitats, and yet, groups outside of the fishery sector can only address these. Worse, one sector's solution is often another sector's problem. Foresters log wood to profit, but the silt from unprotected hillside washes down to the sea, smothering marine habitats.

Poor consumers, desperate for fish, see lower-cost juvenile fish as a solution causing problems for fisheries. Even government agencies concerned with these diverse activities find it difficult to sit together and come up with mutually beneficial programmes. The learning here is that **unless we can bring together all the stakeholders who are involved in and who affect fisheries, we may never get around to solving fishery problems.**

Finally, to cut a long story short, fishing is about ownership and user-rights of resources. These are politically sensitive issues. People guard them jealously and are willing to fight over them. **Fisheries problems in the final analysis are socio-political problems that need political solutions, and these can only be achieved by all the stakeholders coming together to manage their resources.**

It is true that SHM is complex, time consuming and often difficult but given the nature of the problems there seems to be no easy way out, except by involving stakeholders in the management process to make it socially feasible.

The logic of considering SHM is falling into place but it is still not clear how SHM actually works. Could you describe the process of SHM? How would you go about really doing it?

Let us look at the process, step by step.

1. The first step is to **broadly determine the boundary of the problem which needs to be managed.** This could be a geographical area, but in almost all cases the particular fishery determines

the boundary. For example the problem could be the offshore tuna fishery in Sri Lanka, or the reef resources utilization in the Maldives, or the estuarine set bag net fishery in Bangladesh. In some cases, if the geographical area coincides with the fishery area it will lend itself to SHM as in the case of Phang Nga Bay in Thailand.

2. The next step is to **identify the stakeholders**, all those involved in the fishery, from catching to selling to consuming, including all those who influence and affect the fishery, both positively and negatively. This is not as difficult as it sounds: by tracking the activities and impacts and asking the persons involved, a good listing is possible. And as the process evolves, those missed out will emerge and can be included.
3. Having identified the stakeholders it is necessary to **get to know them better**, to understand what they do and don't do and why. Perhaps the most important aspect of stakeholder analysis is to determine how they see and perceive the problems and solution options. An often ignored aspect is to determine their aspirations and dreams, as these are powerful driving forces among people and will often bring people together, instead of differences and problems. Stakeholder analysis has to be done group by group and the findings consolidated for further action. **Stakeholder analysis** can be done quickly using already well established participatory rapid appraisal (PRA) tools.
4. A carryover from stakeholder analysis but nevertheless a critical, distinct step is **problem analysis**. In problem analysis each stakeholder group is helped to separate symptoms from real problems and to determine the causes of the problems, as they perceive them. This is an important exercise, which lays the foundation for the rest of the process. It is very important at this stage to understand the group's aspirations and dreams as this often clarifies how they give meaning to problems. It also helps in bringing stakeholders together because shared aspirations attract people to cooperate better than shared problems.
5. At this stage of the process, stakeholders have to be motivated and given a reason to come together—initially to share their views and concerns and later to negotiate problem definitions, solution choices, choice of approaches to management and basically what each group is willing to win or lose for the greater good. The **consulta-**

tions and negotiations need to be carefully mediated to avoid conflicts and to keep the process constructive.

6. Ideally the consultations and negotiations will result in a management plan which is agreed to by all the parties as the best possible deal they can get, which also answers their needs.
7. A management plan agreed to by all the stakeholders is merely a piece of paper with some hope. The next critical step is for government (one of the important stakeholders) to agree to the plan within the context of fisheries management legislation and to empower the stakeholder group to implement the plan as law. This not only requires enabling legislation but also requires that the stakeholder group is legitimized by law as a decision making group in the eyes of government and the law. Without this legitimizing and empowering process, the whole process of SHM will fail.
8. With empowerment, the process of implementing the management plan will begin with regular monitoring and evaluation to ensure that things are going as planned.
9. All agreements necessarily are time bound and will need to be reviewed. The management plan should clearly specify the periodicity of review and the process of review, which in most cases will require going through the SHM process again.



This briefly is the SHM process, necessarily simplified for presentation. Many components often take place in parallel, and as in most people-oriented activities, nothing ever happens by design and smoothly. But with careful management of the process, good mediation and a lot of faith, SHM can make headway in an area where successes have not been too easy to find.

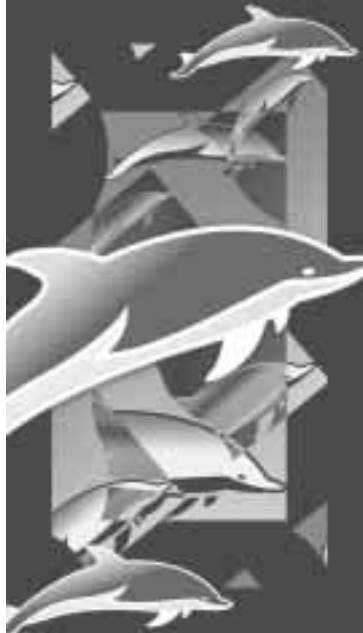
Correct me if I am wrong but I get the feeling that in SHM, fishery agencies have a lesser role. Once they empower the stakeholders they will have little or nothing to do.

It might seem like that but it is not true. Government and fishery agencies will actually end up doing much more than at present, though they may do different things. Let us look at it in detail. Fishery resources belong to the country, and government is the mandated agency to manage it. They do it by developing policy, creating rules and regulations and enforcing them. As important stakeholders, they also have most of the scientific knowledge.

In SHM fishery agencies are making the process of management more socially feasible by involving all the stakeholders in every aspect. It is fishery agencies that will have to lead the SHM process, guide it, empower it and through participative enforcement ensure its success. There is no SHM without government as a key stakeholder. Fishery agencies will have to develop their capacities in new areas such as stakeholder identification, stakeholder analysis, and mediation of consultations and negotiations to make SHM happen.

SHM sounds too good to be true. Surely if there are pros there should be cons. What are some of the problems?

Sure it has problems, any human process does. It is a difficult process, at least it seems more difficult for a fishery agency than taking all the decisions and trying to enforce it. It does take time. The objectives are difficult to control as in all participative processes. The important thing to remember is that the objective of SHM is not to arrive at the best possible management system but to arrive at the best possible management system that actually works. It is the art of the possible. There are a few other problems. The process of SHM tends to get political, which is natural because managing people's ownership and user-rights of resources is unfortunately political. Finally, in order to practise SHM, fishery agencies will have to change the way they work by building new skills and by becoming more participatory.



That's a lot of problems. I hope there are good aspects to SHM that would justify taking all the trouble?

Yes, there are. First, it brings all the parties into the process and makes it more participative. Problems are raised and the process provides clear agreement on the problems and their priorities. By working together and sharing responsibility, and with good mediation, conflicts are easier to resolve, particularly if they are identified before they become serious.

From the standpoint of fishery agencies, SHM reduces the cost of fisheries management and enforcement, and this is important—some fishery agencies spend up to one third of their budget enforcing regulations, and not very successfully at that. By giving “ownership” of the resources and of the process of management to the stakeholders they become more responsible and the chances of sustaining the management process increases. Finally, with all stakeholders involved and negotiating, the

chances are that the process will be more equitable than with a few controlling the process. In other words everyone will come out winning though not as much as they would want to.

If SHM has such good potential, how come people are not using it? Have there been any concrete attempts and, if so, what has the experience been?

The experience with SHM in the field of natural resources management is still relatively meager. Industry has over two decades of experience in SHM. SHM is being tried out in the forestry, fisheries and coastal zone management; experience, learning and the beginnings of success are trickling in. BOBP has tried the SHM approach in its third phase in its seven member countries with various levels of success, though five years is a very short period to judge the success of participatory develop-

mental efforts. But some successes are visible—such as agreements on problems to be addressed and their priorities, a realization by the stakeholders that the resources that they are managing cannot be managed without all their participation, concrete efforts at modifying legislation to carry such efforts, facilitation of conflict resolution, to mention a few areas. The SHM process seems to be taking root in Sri Lanka in managing the ornamental fish sector, in the Maldives in integrated reef resources management, in Thailand to better manage the fisheries of Phang Nga Bay. There are also positive experiences from Southeast Asia and the Caribbean and these are enough reasons for us to give SHM a serious chance. The most important reason to keep faith in SHM is that

if a process that addresses the very nature of the problems fails where will we turn to?

One last question: where can we get the details, the nuts and bolts of the SHM process, should we want to try it?

Some information is beginning to appear in the literature and on the Internet. We at BOBP are preparing a field guide to using the stakeholder approach to management of coastal fisheries resources and it should be out in a few months.

Rathin Roy is the Senior Communications Adviser for the Bay of Bengal Programme (BOBP) of the FAO and Chennai, India. The BOBP is a regional effort working in Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka and Thailand helping fisheries stakeholders to better manage their fisheries.

Villagers take lead in creation of the Blongko Marine Sanctuary, Indonesia

Blongko is a small village with a population of 1,250. It is located on the northwest shore of Minhasa, North Sulawesi, approximately one degree, eight minutes north of the equator. Its approximately 6.5 km of coastline is healthy and productive, bordered by relatively thick and vigorous mangrove. Most of the population lives along the water, and the majority of the population are fishers, although many residents both fish and farm. The fishery, both offshore and on the coral reef, plays a significant role in the livelihood of the community. Most fish captured are used for home consumption or sold by the fishers' wives to the local community.

The idea of making six hectares of mangrove swamp and part of the coral reef a marine sanctuary came about after a field visit by Blongko villagers to a marine sanctuary at Apo Island in the Philippines. A return visit by the Apo Island village chief and members of the women's cooperative took place to observe Blongko and exchange ideas. The kepala desa, village government head official, of Blongko and the community quickly understood the Apo Island group's description of how their community-driven marine sanctuary effort was developed and implemented. Realising the value of the local fishery, and seeing a way to protect it as a valuable nursery for fish that could help feed future generations, kepala desa worked with Proyek Pesisir's (the Indonesian coastal resources management project) staff and community members to collect data, identify a proper site and develop a local ordinance to regulate the proposed protected area.

Within a year, the community fully supported the concept, completed technical research and selected a site. The village government also received support from the regional and national governments for the

ordinance that the villages had crafted. In October 1998, the area was officially designated a marine sanctuary. Already an information/meeting center is under construction, placement of boundary markers is underway and information signs are being created. By promoting the community-based marine sanctuary, Blongko's residents now have a more active role and responsibility for protecting and sustaining marine resources which directly affect their day-to-day lives. The resource users in Blongko are now becoming resource managers.

While one small sanctuary may not seem like much, if it is used as a model which is replicated widely, it can greatly add to the amount of coral reef area protected within a nation. It also has positive financial implications over time. With budgets cut due to the national economic crisis, community-based marine sanctuaries become an attractive and less-costly means of marine ecosystem and biodiversity protection as the majority of costs – like the benefits – can be internalised within the community rather than be rolled into national budgets.

The Blongko Marine Sanctuary is miniscule in a global context, but it is extremely important as an example of success in a country such as Indonesia, which contains 20 percent of the world's coral reefs and the highest marine biodiversity in the world – “the underwater rain forest.”

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AFRICA

Community participatory approach pays dividend in fight against dynamite fishing

by Gratian Luhikula

Dynamite fishing, even though illegal, is a problem that seemed to evade all practical solutions in Tanzania. However, in mid-1998, the Tanzanian government decided to use not only a sizable budget, but also the Tanzania People's Defense Forces (TPDF) to fight the problem.

Though the TPDF crackdown is over, TPDF officers still monitor the situation in some areas. In the district of Mtwara, however, the local community is strongly committed to stopping dynamite fishing and has taken charge and relieved the TPDF.

"Here in Mtwara, we no longer require the TPDF officers—not even the marine police—to check out dynamite fishing. The people are taking full ownership of the sea and the coast to make sure that the critical resources that form the main part of their livelihood are sustainably utilised," said the Mtwara District Commissioner, Fatuma Mikidadi.

She added with pride that it is a unique and inspiring development happening in an area that was once a hub of dynamite fishing. Speaking to a team of coastal management experts currently working with the Tanzania Coastal Management Partnership (TCMP) on the ongoing process of formulating a coastal management policy, Mikidadi noted that the Mtwara coastal community has vowed to protect the sea to make sure that dynamite fishing is not practised again in the waters of Mtwara.

TCMP is a joint initiative between the government's National Environment Management Council (NEMC), the United States Agency for International Development (USAID) and the University of Rhode Island's Coastal Resources Center (URI/CRC). It is part of the USAID Tanzania Strategic Objective Two that aims to establish the foundation for adoption of an environmentally sustainable natural resources management policy.

"Fishing by explosives had become a dilemma," Mikidadi told the visiting TCMP team. "The local community had literally abandoned all their traditional fishing methods in favour of the easy and high-yielding dynamite blasting. To the poor local community, dynamite fishing was an immediate answer to their overriding needs." The TCMP team was on a field tour in Mtwara and Lindi to collect inputs for the policy from local government leaders and other stakeholders.

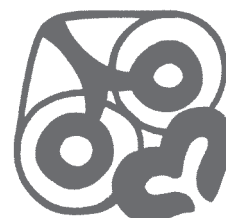
Dynamite fishing in Mtwara and Lindi districts was carried out in two different forms. The most action was from organised groups from Dar es Salaam, Tanga and Zanzibar. The other was by local fishers who dynamite-fished in waters close to shore. The organised groups based outside of Mtwara traveled to Mtwara and Lindi with power boats.

They stayed in the area for about two weeks, collected their catch, stored it on ice, then returned to their home port, unloaded, refueled and returned to continue dynamite fishing. They not only used dynamite, but also distributed dynamite at exceptionally low prices to the local fishers in return for the sale of their catch.

Motivated by the lucrative business, every local fisher got involved in dynamite fishing. According to Mikidadi, there was no single hour that passed without hearing a series of blasts from the sea, and this continued until the intervention of the TPDF.

Though the situation cooled down after the TPDF intervention, dynamite fishing did not stop completely. It simply went underground, with local fishers taking advantage of the weak law enforcement capability. It is then that the Mtwara district leaders, in collaboration with the Rural Integrated Project Support (RIPS) and Shirikisho la Kuhifadhi Mazingira ya Bahari Kanda ya Kusini (SHIRIKISHO), launched a community education and awareness campaign on the harmful effects of dynamite fishing to the environment and associated resources.

SHIRIKISHO is an association that was initiated and formed by the Mtwara and Lindi coastal communities to enhance community participation in coastal and marine environmental safeguarding. It formed primarily due to the increasing amount of dynamite fishing which went on unpunished. Its motto is Bahari Yetu Hatutaki, – meaning that they don't want anybody tampering with their sea.



The additional campaign was necessary as most fishers continued dynamite fishing solely for the income, without knowing the damage they caused to the environment and, to some extent, human health. The anti-dynamiting campaign was to be a long-lasting solution to the problem since the TPDF intervention was only a temporary measure.

The campaign was strategically carried out using a participatory approach, involving all members of the community including district officers, village governments, women, men and children. It was also exhaustive, covering all coastal villages and providing wide and deep knowledge on the adverse impact of fishing by explosives.

A total of 230 fishers in Mtwara district surrendered, along with 112 kg of TNT, 202 kg ammonium nitrate, 100 detonators and 26 fuses. Other dynamiting material was found abandoned at various places including the back yard of the district commissioner's office.

"It was a unique exercise that I'll long treasure in my memory," explained Mikidadi "Imagine a mother standing up in a public seminar and who accuses her own son for involving himself in dynamite fishing. Or a wife, which is not common in coastal traditions and norms, raising an accusing finger to her bewildered husband."

For some people, especially women, the seminars organized to educate the communities were platforms for them to demonstrate their resentment of dynamite fishing, not necessarily for environmental degradation reasons but for the human health danger to which explosives exposed their husbands.

"Mothers and wives who had witnessed men in agony after being maimed by explosives, or those who see their neighbours reduced to beggars after ugly dynamite accidents, found the seminars as opportunities to voice their 'silent fears' when their beloved ones went out in the sea," the district commissioner elaborated.

Several people who are now rendered disabled after ugly dynamite fishing accidents are now leaders of village-based anti-dynamite groups. These include Mzee Juma Mussa, whose foot and finger were maimed by mishandled dynamite, and Issa Salum who lost an eye and both arms.

The seminars were essentially reconciliatory, aimed at forgiving and forgetting the past and paving the way for a new life. They were carried out without physical force and police-like conditions, as during the TPDF crackdown, which caused men to flee their homes for many days.

It was a learning process targeted towards empowering the people to create their own solutions and desired actions. The district commissioner added that the remarkable result of the seminars is that they empowered the local community with an enormous sense of ownership.

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SOUTH AMERICA

Feeling insecure — Women workers in Chile's fish processing factories face bad working conditions and an insecure future

The Chilean fisheries sector provides large quantities of marine products for export. This has enabled it to establish a very effective and dynamic place for itself in international trade and given it a very important role in the national economy.

Its efficient growth and expansion, particularly in the last ten years, are shown by several macroeconomic indicators: the volumes produced and exported, foreign exchange generated, levels of investment, increased productive capacity, increased job opportunities.



However, these positive trends in growth and expansion hide the social processes associated with export-oriented production, where social imbalances, inequities and exclusion form an integral part.

In order to analyze and explain these issues, we have focused on the main aspects of the working conditions and quality of jobs in the sector, with particular emphasis on the section of workers from the plants processing fish for human consumption (canned and frozen products).

It is particularly important to note that the growth and expansion of the overall sector, while producing a considerable expansion of the job market, has produced jobs that are extremely insecure in nature.

They are characterized by: insecure tenure; informal contractual relationships; subnormal salaries; a bad working environment; lack of access to health or pension schemes; negligent working arrangements;

and barriers to forming unions for collective bargaining. So, although there are many more workplaces available, they are not associated with any improvements in the well-being of the workers.

It has been calculated that women represent nearly 50 percent of the full-time workers in the sector, and in some parts of the production chain this percentage can rise as high as 80 percent. Some incomplete national-level statistics, which only include production units employing ten or more persons, show that there are around 10,000 full-time women workers. To this one must add an unknown number of part-time workers who can only gain employment according to production demands.

As well as being strongly biased towards employing women, the job market in the fishing industry has a marked division of labour by gender. Particular tasks are only allocated to men, and others only to women. There is a tendency for the latter to be more short-term and insecure, and this is caused as much by cultural factors as by structural and economic ones.

The workers in this kind of industry are generally drawn from lower socioeconomic classes, have inadequate education and qualifications, large numbers of children, and are frequently women heads of households (i.e. the sole earner and provider).

Specific roles

They are usually best at undertaking tasks which involve handling raw material and, as a result, are assigned specific roles in the production process, including working in a production line with both unprocessed and finished products. They are able to undertake highly skilled manual tasks, which require the development of special abilities. But as these tasks are also very routine ones, they pay low salaries and offer poor job security.



In terms of numbers and turnover of workers, it is the small-scale and low-technology enterprise sector that mainly employs part-time workers for fish processing. The processing of perishable products without access to cold-chain infrastructure, for example, obliges them to recruit this kind of manual labour.

While the job market in the fisheries sector is flexible, there are structural aspects which make the demand for manual labour vary over the year. Above all, adjustments must be made to take into account seasonal peaks and troughs in catches and production. It is also important to point out that the flexible numbers of male and female workers allows employers to evade the responsibilities and costs required in contracting a full-time workforce.

This makes possible subcontracting of workers, working out of home, and short-term contracts. This latter arrangement forms a central part of the economic strategy and commercial organisation in fish processing plants.

Within the workforce there is a high turnover rate, where a large reserve of people cyclically enter and re-enter the job market, increasing the supply of cheap labour, thus forcing salaries down. The fishing industry also uses a system of variable salary rates, designed to avoid any salary indexation, any payment of minimum wages or other employment-related responsibilities.

Any increase in pay rates is almost exclusively linked to productivity, and such payments are mainly conditional on productivity and profitability performances. The working days are long, with irregular hours, and are subject to variations according to the weather, season, volume and time of fish landings, and the time of deliveries and sales.

Processing plants are characterised by a combination of significant risk factors, and the more insecure the job, the greater these are. They are related to the technical nature of the work, and associated with damage to health.

The poor quality of the jobs is also revealed by the lack of opportunities for access and use of social security and pension schemes. The irregular working periods mean that the workers' benefits are interrupted, so that they have to fall back on the public health system, pleading poverty or dependency.

Intermittent work

As for pensions, considering the intermittent nature of the work and the low and unstable incomes, it is unlikely that the workers will be able to build up sufficient individual funds to acquire a future pension adequate for their old age.

As far as labour laws are concerned, there are particular provisions that prevent part-time women and men workers from organizing themselves into unions and collectively bargaining for better working conditions. This increases their vulnerability and reduces their rights.

The Chilean law has strengthened the concept of individual rights, and this has reduced the collective power of the unions and their capacity to negotiate. Only the unions of a particular firm can negotiate. Since part-time workers can only be affiliated to industry-wide unions, they are much more vulnerable. The most frequent complaint of part-time workers concerns salary and job security.

Full-time workers can affiliate themselves to the company unions which negotiate their conditions of work. A group of company unions can establish a federation, and a group of federations can establish a confederation.

Through increasing the flexibility of the organization of their production processes, and by reducing their labour costs, businesses are attempting to maintain competitiveness without affecting their profit rates. This is making jobs even more insecure.

In addition to the benefits provided to the industrial sector by the State through its subsidy policies on credit, export promotion, etc., and through the intensive exploitation of available marine resources, the absence of effective controls and the presence of abundant and cheap workforce have made possible the growth and expansion of the sector.

This article, translated by Brian O'Riordan, has been written by Estrella Diaz, a member of Hexagrama Consultants, Santiago, Chile. Diaz is a sociologist who specializes in issues of gender and employment.

Source: *Samudra*, April 1999

EUROPE

European investors look to Pacific region for more fish But airfreight rates are the challenge

Dominique Gautron's company, *Autremer*, founded nine years ago, is a small company headquartered at Grenoble, Southern France. But it also has an office in the big Paris fish market. Each day it takes delivery of fish flown to it from Western Africa, Oman and Yemen. In January, it began operating its own fishing boat, equipped for processing, for a port on the coast of Yemen.

Until the boat went into service the company had concentrated purely on selling unprocessed fish to the French market. The company was one of the fish buyers from seven European countries present at the ACP/European Union meeting held in Nadi, Fiji, to make contact with fish suppliers.

Yes, it was becoming more difficult to obtain fish from traditional sources, although the company still obtained adequate volumes of fresh reef fish and snapper from its Middle Eastern sources, Gautron said.

"Price and demand is rising. We are looking here now because there are enormous tuna resources. But the problem is that the European Union has banned some countries so they have to harmonise with our requirements. We are thinking about frozen fish only because of the large distance and inadequate airfreight. The distance from the Pacific is too long for fish consignments they have to be transshipped somewhere and it wouldn't arrive fresh."

Autremer wants whole frozen tuna or loins or steaks. "The main constraint apart from harmonisation (with EU rules) is transport because airfreight rates are extremely high from the South Pacific. We can't sell competitively in France. Rates certainly need to drop by half or a quarter."

In Europe, she said, there was a growing demand for fish "because of the problem of mad cow disease, so more people were turning to fish although it was more expensive".

Nearly all the tuna imported by France, mainly albacore, is for canning. "We don't eat tuna much now, but things are changing."

Gautron expects European interests will be prepared to invest in fish processing in the Pacific "when the region meets EU tough handling and processing rules. Most people now are making plans and making contacts, and soon as we are ready we can start".

Source: *Islands Business*, March 1999

Books and PUBLICATIONS



Yemaya: Gender and Fisheries Newsletter

The International Collective in Support of Fishworkers (ICSF) has just begun publishing a newsletter, *Yemaya*, on gender and fisheries. The idea for such a newsletter was first proposed at ICSF's General Body meeting in Trivandrum in February 1998. It was suggested that the newsletter carry news and views of organisations and individuals working on gender issues in fisheries in different parts of the world. Besides keeping people aware of what is happening, it should help sustain the links between those working on similar issues, and help them network.

The name "Yemaya" is Afro-Brazilian in origin and is the shortened name for Yey Omo Eja, meaning "Mother Whose Children are the Fish", a mother whose children are so numerous they are uncountable. The first issue of *Yemaya*, published in April 1999, included articles from Africa, Europe, Asia, North America and Latin America. For more information about *Yemaya* contact:

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"The Last of the Hunter Gatherers" — Fisheries Crisis at sea

by Michael Wigan; Published by Swan Hill Press, 101 Longden Road, Shrewsbury, SY3 9EB, United Kingdom. RRP is £19.95.

This is a remarkably objective book describing many of the major fisheries of the world and what has happened to them, and predicting what is likely to happen in the future. While it tends to be somewhat

Atlantic-centric, there is, nevertheless, some coverage of other parts of the world. What has happened in the Atlantic will surely occur in the Indian and Pacific Oceans if nothing is done to better protect the fisheries in those areas for the long term.

The author has taken an historical approach, and has depicted a very wide-ranging examination of the

state of the world fisheries. He looks at the influences of such factors as the green movement and anglers. His conclusions are remarkably objective and, indeed, positive. A very inspiring book that will be of considerable interest to anyone whose long

term future is tied up with the fishing industry, wherever they happen to live and operate in the world.

Source: *Professional Fisherman*, March 1999

Double ghosts — Oceanian Voyagers on Euroamerican Ships

by David A. Chappell (M.E. Sharp, Inc. 1997)

Extract of a review by Mark Else, University of Hawai'i Graduate Maritime Archaeology and History Certificate Program.

For far too many years the story of the Pacific, and those who sailed through it, has been told from a purely Western standpoint. With *Double Ghosts*... the reader is allowed to sail the waters of the blue Pacific through the eyes of native peoples who played an indispensable role in the development of Pacific trade and cultural exchange during and after Western contact.

In the 16th century, Western ships began to cross the Pacific, beginning with Ferdinand Magellan in 1522. Oceanians, or the native peoples of Polynesia, Micronesia and Melanesia have traveled aboard Euroamerican ships since soon after this first voyage. At first the travel was not often voluntary. Oceanians were "blackbirded" or kidnapped, and treated as slaves or curiosities much of the time by the Spanish. It would take another two hundred years before the bulk of Oceanians were traveling of their own free will.

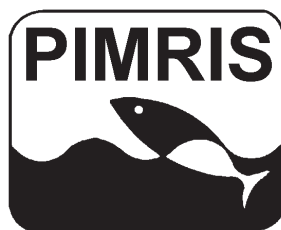
The author leaves us with valuable information about the legacies created by the movement of thousands of kanaka throughout the Pacific on Euroamerican ships. Kanaka means "person" in Hawaiian but would come to mean "native laborers," to Westerners throughout the Pacific.

The desire to sail with the foreigners would expose the kanaka sailors to not only rejection by the Euroamerican, but by their own people as well. When many of the native men returned, they had been so changed by their time with the white men that their own people did not know them anymore. This is one of the most important points of Chappell's book – not only did the foreigners' diseases devastate the cultures of the Pacific islands, but their ideals poisoned the minds of the young generation and changed the structure of Oceania forever. This would make the men "double ghosts" both to their own people and history as well.

The author, David Chappell, is a member of the Marine Archaeology and History Certificate Program (MAH) Steering Committee.

Source: *Seawords*, The Newsletter of the Marine Option Program University of Hawaii, Volume XIII No. 2, February 1999. p.5.

PIMRIS is a joint project of 5 international organizations concerned with fisheries and marine resource development in the Pacific Islands region. The project is executed by the Secretariat of the Pacific Community (SPC), the South Pacific Forum Fisheries Agency (FFA), the University of the South Pacific (USP), the South Pacific Applied Geoscience Commission (SOPAC), and the South Pacific Regional Environment Programme (SPREP). This bulletin is produced by SPC as part of its commitment to PIMRIS. The aim of PIMRIS is to improve



Pacific Islands Marine Resources Information System

the availability of information on marine resources to users in the region, so as to support their rational development and management. PIMRIS activities include: the active collection, cataloguing and archiving of technical documents, especially ephemera ('grey literature'); evaluation, repackaging and dissemination of information; provision of literature searches, question-and-answer services and bibliographic support; and assistance with the development of in-country reference collections and databases on marine resources.