



Secretariat of the Pacific Community

# Women *in Fisheries*

Number 8 – March 2001

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



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## Introduction

Welcome to the eighth issue of the Women in Fisheries Special Interest Group Bulletin. This issue reports on the activities of the SPC Community Fisheries Section, and includes the appointment of a new Community Fisheries Adviser, workshops in Tuvalu and Kosrae, field work on marine invertebrates collected by women in Niue, assistance for the new community-based fisheries management programme in American Samoa, and a review of the village fisheries management plans in Samoa.

For this issue I was assisted by Lilian Fay Sauni, a USP Masters student in marine science who was on a training attachment with the SPC Community Fisheries Section in November 2000. Lilian helped with the compilation of articles for the *What's happening within the region* and *What's happening outside the region* sections.

From around the Pacific region we have a tribute to Anne Luior, National Women's Interest Officer for FSM, who lost her battle with breast cancer in December 2000; a report on marine conservation and tourism development for the Marshall Islands; the crab fisherwomen of New Caledonia; and fisheries training for Pacific Island women in New Zealand.

The news from outside the region includes an interview with the female president of a fisherman's cooperative in Brazil; a workshop on gender and coastal fishing communities in Latin America; and former fighters turning to a more peaceful life of seaweed farming in Mindanao, Philippines

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

Contributions in the form of articles, papers, news and information are welcome. Articles can be in French or English; the bulletin is published separately in both languages.

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This and other SPC bulletins are available online at <http://www.spc.int/coastfish/>

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## ***NEWS FROM THE***

*Community  
Fisheries  
Section*



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."* The section is also becoming more involved in supporting the participation of coastal communities in marine resource management and encouraging recognition of their vital role in managing their own fishery resources. The involvement of fishing communities in the management of the subsistence and artisanal fisheries is considered the most effective way to resolve many of the problems threatening the sustainability of the fishery. Some of the activities of the section are summarised below.

### **Staff changes within the section**

Following the departure of Patricia Tuara the position of Community Fisheries Adviser has been taken by Ueta Fa'asili of Samoa. Ueta holds a BSc degree from the University of the South Pacific and was Head of the Fisheries Division in Samoa for 16 years. Ueta has played a major role in the AusAID-funded community fisheries management initiative in Samoa, now a model for the region.



***Ueta Fa'asili, Community Fisheries Adviser***

## SPC Community Fisheries Section resource materials

### Training manuals

- Setting up a small-scale business: a guide for women in fisheries (English or French)
- Practical methods for preserving seafoods: salting and drying (English or French)
- Fisheries management for communities: a manual on promoting the management of subsistence fisheries by Pacific Island communities (English or French)

### Videos

- Shellcraft: an income-generating venture for women “The Cook Islands Experience” (English or French)
- The Reef: Our Heritage, Our Future (English or Nauruan)

### Reports

- An assessment of the role of women in fisheries in Nauru
- An assessment of the role of women in fisheries in the Republic of the Marshall Islands
- An assessment of the role of women within fishing communities in the Republic of Palau

- An assessment of the role of women in fisheries in Pohnpei, Federated States of Micronesia
- An assessment of the role of women in fisheries in Niue
- An assessment of the role of women within fishing communities in Tuvalu
- An assessment of the role of women in fisheries in Kosrae, Federated States of Micronesia

Most of the Community Fisheries Sections reports and some of its training manuals are available online at: <http://www.spc.int/coastfish/Sections/Community/index.html>

For details on how to obtain SPC resource materials, including fisheries training manuals and videos, please contact:

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## FAO National Legislative Review and Enforcement Training Workshop in Tonga

The Community Fisheries Officer (CFO) travelled to Tonga in late July 2000 to attend the FAO National Legislative Review and Enforcement Training Workshop in Tonga to present a paper on the draft management plan for the deepwater snapper fishery in Tonga.

The draft management plan for the deepwater snapper fishery in Tonga was prepared by Viliami Langi following earlier work done by Tim Adams. As both Tim and Viliami were unable to attend the workshop the CFO went to present the management plan as well as contribute to the sessions on community-based fisheries management.

International attendants of the workshop included Blaise Keumlangan, David Doullman, Annik Van Houtte, Heiko Bamman and Masa Izumi of FAO; Semisi Fakahau, Autalavou Taua (Samoa); Trevor Larkin and Len Rodwell (FFA). The workshop was held at the Dateline Hotel and was well-attended by a wide variety of local people from government

and private industry. The people who attended were very pleased to have a chance to give some input into the draft legislation and to see that government was willing to listen to them and take action on areas of concern.

The overall aim of the workshop was to present the draft national fisheries legislation, a review of the 1989 Fisheries Act, work that has been done by Blaise Keumlangan and Ms Manumatavai Tupou, a young Tongan on attachment to FAO. There were also a number of other topics to support various parts of the legislation: aquaculture and legislation; seafood safety, export procedures and HACCP; fisheries management plans (including those for the deepwater snapper, tuna and seaweed); monitoring control and surveillance; and community-based fisheries management.

Autalavou Taua's presentation on the experience in Samoa with community-based fisheries management was well received. The situation in Tonga is

very different to that in Samoa where traditional controls exist. One of the greatest challenges in Tonga will be to adapt the concept of community-based management to a place long accustomed to open access with government controls that are difficult to enforce. Participants seemed mainly concerned about increasing the responsibility of dis-

trict and town officers, seeing as how these officers are already poorly paid and reluctant to take on enforcement roles. The consensus reached by the end of the workshop however, was in favour of implementing some measures for community-based fisheries management in Tonga.

## Second fisheries module for SPC Community Education and Training Centre

After the workshop in Tonga, the Community Fisheries Officer travelled to Suva to run the second fisheries module for the SPC Community Education and Training Centre (CETC) programme, in collaboration with the University of the South Pacific's Post Harvest lecturer, Tony Chamberlain.

CETC runs an annual seven-month programme for women from the Pacific Island region. All the trainees are involved to some degree in community-based work in their home countries. During the programme the trainees study a wide variety of topics including nutrition, media, public awareness and agriculture. In 1999 the USP's Post Harvest Fisheries Development Project (PHFDP) in collaboration with the SPC Community Fisheries Section developed and delivered a pilot fisheries module. Tony Chamberlain of USP and Patricia Tuara of SPC, as the main resource people, developed a manual to support the training. The module was offered as an elective and included practical skills in sustainable harvesting techniques, gear technology, seafood processing and preservation, and

*Participants made good use of the USP seafood processing facilities*



Lyn Lambeth

*Various marinades for the smoked fish were tested*



Lyn Lambeth

*The reef walk was a popular activity*



Lyn Lambeth

marketing. The pilot module was successful and CETC requested it again for 2000.

It was decided to run it again as a pilot module and further develop the manual, with the CFO assisting Tony Chamberlain in the training. This year the trainers were also very fortunate to have a number of other USP resource people to help, including Jone Maiwelagi, Johnson Seeto, Gabriel Tiltili, Jope Lesavua, Samasoni Sauni, Jimaima Lako, Aliti

Vunisea, Jese Verebalavu and Lilian Fay. Due to the problems following the coup in Fiji the workshop had to be run around continual power cuts, so video sessions had to be carefully planned in advance. Both participants and trainers enjoyed the fisheries module, the highlight being a half day of reef walking and fishing.

## Tuvalu fisheries workshop

In September 2000, the CFO travelled to Tuvalu to hold a train-the-trainer workshop for women involved in small-scale fisheries activities. The workshop followed up work begun by the Community Fisheries Section in 1999.

In 1998, Tuvalu requested the assistance of the Community Fisheries Section in assessing, documenting and subsequently training women involved in small-scale fisheries. In January/February 1999 the Community Fisheries Officer travelled to Tuvalu to undertake the first part of the SPC Community Fisheries Section work in FSM — an assessment and report of the role of women in fisheries in Tuvalu. Sikela Ulumutu (Fisheries Department) and Suia Pesega (The National Council of Women) assisted in this work. One of the recommendations of the report resulting from this visit, was that the SPC Community Fisheries Section assist in running a train-the-trainer workshop for the community workers of each island. Funding for the workshop was provided by the Government of New Zealand as part of additional NZODA support for the Women in Fisheries Development Project.

*The Tuvalu National Council of Women provided their conference room for the workshop*



Lyn Lambeth

Twelve women and one man were selected to attend the workshop, including community workers or representatives from eight islands, and trainers from the Fisheries Department, the Women's Department and Tuvalu All Non-Government Organisations (TANGO). One worker from NAFICOT also attended some of the processing and fish smoking sessions relevant to his work. The workshop covered seafood quality, spoilage, processing, preservation, small businesses, conservation and management. Following the workshop the community workers were to return to their islands and run similar workshops for their communities. The Community Fisheries Section looks forward to receiving the reports from these workshops.

*NAFICOT facilities were used for the fish processing sessions*



Lyn Lambeth

## Niue's marine invertebrate species to be included in fisheries management plan

In November 2000 the Community Fisheries Section completed fieldwork in Niue. The work was requested by the Niue government as part of ongoing SPC assistance to Niue in the area of sustainable development and management of its marine resources. SPC's Community Fisheries Officer undertook the fieldwork together with a Canadian-funded training attachment, USP Masters student in marine science, Lilian Fay Sauni.

Also assisting with the work were Brendon Pasisi, Desiree Tukutama and Charlene Funaki of the Niue Department of Agriculture, Forestry and Fisheries, and Peace Corps volunteer, Wendy Cover. The aim of the fieldwork was to identify and document the important marine invertebrate species collected by women in Niue, to look at potential management measures for those species, and to ensure that species collected by women are included in an inshore fisheries management plan being developed by Niue Fisheries and SPC.

Although Niue has only a small fisheries section they recently created a new position — the Women's Fisheries Development Officer — a post held by Desiree. Niue Fisheries remains committed to seeing that the entire community is consulted and included in their work.

Niue, with a total land area of only 258 km<sup>2</sup> and a circumference of 65 km, is reputedly the largest upraised coral atoll in the world. The population is less than 2000, with nearly 10 times that number of Niueans now residing in New Zealand. Niue has no lagoon and

only a narrow fringing reef surrounds most of the island. The former reef and lagoon is raised to about 60 m above sea level, descending to over 1000 m depth within 5 km of the shore.

Although a number of studies have been done on the marine resources of Niue, none have resulted in a clear idea of exactly what, or how many, species of invertebrates are utilised in Niue. At first glance the rugged coastline and small reef flat area, accessible only in calm weather and at low tide, would appear to have few species that could be utilised. However the women gather a surprisingly large number of invertebrates for food and shellcraft. By the end of the two-week fieldwork, 92 Niuean invertebrate names had been recorded, 55 of those were actually observed on reef trips, 29 of them are used for food and around 10 species or groups of species are used for shellcraft. Over 70 species have been definitely or tentatively identified.

The list is by no means exhaustive but will be a useful guide to the most commonly utilised species. Once the work has been completed a report will be submitted to Niue with recommendations for management of the most important species.



Lyn Lambeth

*The small reef flat yielded a surprising number of utilised species*



Lyn Lambeth

*Desiree, Wendy and Lilian search for invertebrates at low tide*

## American Samoa and Samoa assistance

The Community Fisheries Adviser travelled to American Samoa in January 2001 to provide technical input to the newly established Community Fisheries Management Programme of the Department of Marine and Wildlife Resources (DMWLR). The programme emulates the approach practised by the Community-based Fisheries

Extension in Samoa. Following this the Adviser travelled to Samoa to review their village fisheries management plans and by-laws, and to hold discussions with various agencies on the proposed regional workshop involving participation of communities in the management of subsistence and artisanal fisheries.

## Kosrae fisheries workshop

In February 2001 the Community Fisheries Officer travelled to Kosrae to run a one-week workshop for men and women involved in small-scale fisheries activities. The workshop was a followup to the survey and report for Kosrae, *An assessment of the role of women in fisheries in Kosrae, Federated States of Micronesia*.

One of the recommendations of this report was that more training programmes be provided to those involved in subsistence and artisanal fisheries, particularly women. The SPC Community Fisheries Section agreed to assist in running a workshop targeting fish market operators and others involved in small-scale fisheries activities.

Kosrae requested a workshop that would include separate training for men and women, with some mixed sessions. However, at the beginning of the workshop many of the participants, both men and women, asked if they could attend all sessions as interest in every topic was high. The workshop was attended by 32 participants, 15 men and 17 women.

Topics covered included seafood quality control, fish processing and handling, small-scale marketing and business skills, seafood preservation, and fisheries management. During the workshop the participants built and tested a small fish smoker. The smoked tuna was very popular and formed part of the feast prepared by the participants for

***Gill netting is a popular activity for women in Kosrae***



Lyn Lambeth



Lyn Lambeth

***Maerina demonstrates her filleting technique***

the closing ceremony held on the last afternoon of the workshop.

Workshop participants were asked to provide smoked fish for the opening of a marine park in March. Women participants will also provide a fish smoking demonstration as part of the activities being organised by the Kosrae Women's Affairs Program for International Women's Day in March.

*Participants prepare a marinade for fish smoking*



Lyn Lambeth

## Publications and Information

The reports, *An assessment of the role of women within fishing communities in Tuvalu*, *An assessment of the role of women in fisheries in Niue*, and *An assessment of the role of women in fisheries in Kosrae, Federated States of Micronesia*, have been printed as field reports and distributed to the countries concerned. These and other publications may be found in pdf

format (and html for the bulletins) on the Community Fisheries Section homepage at: <http://www.spc.int/coastfish/sections/community/index.html>

Draft reports for Chuuk and Yap are awaiting comment from relevant agencies in FSM.

## Future work

Workshops on small scale fisheries activities for Chuuk and Yap, FSM have been tentatively scheduled for late April or early May, depending on the finalisation of the reports and other work commitments. A regional workshop on involving communities in the management of their fisheries has been proposed for the first half of the year but is awaiting funding. The Forum Fisheries Agency (FFA) is planning to assist Fiji Islands in developing a tuna fishing industry management plan and the SPC Community Fisheries Section, in collaboration with the South Pacific Forum Secretariat, is tasked with helping address gender issues in this work.

from 23 to 27 July 2001. The meeting will be attended by heads of fisheries agencies from around the region, SPC Marine Resources Division staff, representatives of donor agencies, and interested observers. The aim of the meeting is to provide member countries with a forum to discuss common problems and opportunities, and also to comment on SPC's role and activities and provide programs with guidance for their future work.

The French version of the manual, *Fisheries management by communities*, is now available from:

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The third fisheries module for the SPC Community Education and Training Centre (CETC) is scheduled for the middle of July. The Community Fisheries Section will work with USP's Post Harvest Fisheries Development Project in the delivery of this training module. The second SPC Heads of Fisheries Meeting will be held in Noumea

# WHAT'S HAPPENING WITHIN THE REGION



## FEDERATED STATES OF MICRONESIA

### Anne Luior, FSM National Women's Interest Officer, laid to rest on Ulithi, Yap

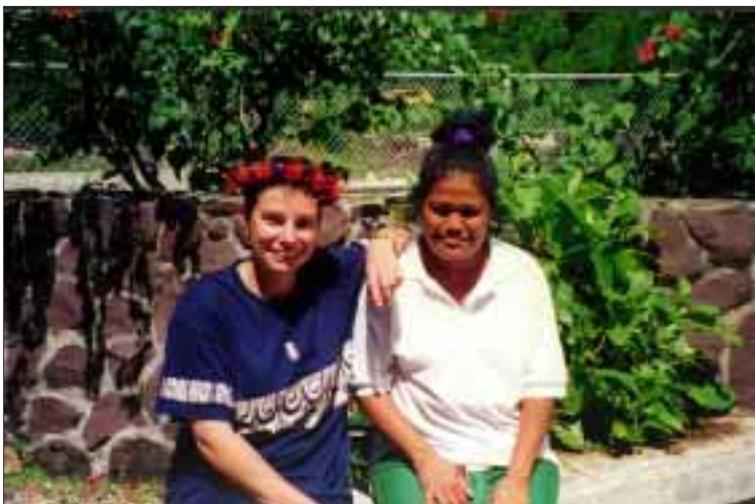
by Lyn Lambeth

Anne Luior, an advocate for gender equality and a pioneer for women's issues, has been laid to rest on her home atoll of Ulithi, in Yap State. Anne died in the Yap State Hospital in December 2000, at the age of 49, after battling breast cancer. She was buried on 29 December 2000, on the island of Mogmog, and is survived by her daughter Sara Wyman. Anne will be greatly missed by the SPC Community Fisheries Section and we would like to offer our condolences to her family, colleagues and friends in FSM and throughout the region.

Anne Luior started as the first National Women's Interest Officer for FSM in 1992, working with the Department of Health, Education and Social Affairs. As well as her work with the women's pro-

gramme, Anne is credited with establishing the Girl Scout Organisation in FSM, promoting the convention of Children's Rights in FSM and chairing the steering committee to establish the Red Cross Society in FSM.

Anne was one of the main initiators of the work of the SPC Community Fisheries Section in FSM, beginning with the visit of the Community Fisheries Officer to the Fifth FSM Women's Conference in August 1999. Since then the CFO has worked closely with Anne and the National Fisheries Section in planning and implementing assistance to women in the fisheries sector. The work in the four states is ongoing and to date has resulted in the publication of reports for Pohnpei and Kosrae, the drafting of reports for Chuuk and Yap, and workshops for women in the small-scale fisheries sector in Pohnpei and Kosrae. Further workshops are planned for Chuuk and Yap. Anne was always particularly enthusiastic to have the section work with women in her home state, and was looking forward to accompanying the CFO on the next visit there. Her assistance and enthusiasm will be sorely missed.



Anne Luior, right, with Lyn Lambeth, during the 1999 FSM Women's Conference

## Ecotourism workshop in Yap, FSM

Delegates from all over Micronesia met in Yap State for two weeks in January 2001 to discuss ways of initiating community-based, marine ecotourism ventures as an alternative means for communities to generate income. The workshop was coordinated by the South Pacific Regional Environment Programme (SPREP).

The Micronesia Community-Based Marine Ecotourism Workshop aimed to find potential solutions to the problem of the use of destructive fishing and harvesting methods, pollution, over exploitation, and sand mining by communities to make money.

Marine ecotourism is essentially tourism with a focus on preserving the marine environment, culture, and lifestyle of the communities visited by tourists. In the long term, it is much more ecologically sustainable and financially viable than current methods of generating income.

The workshop will provide participants with the skills needed to assist local communities in identifying suitable tourism opportunities, and to plan and manage the development of those ventures in

a way that is beneficial to both the community and the marine environment. "In the Pacific about 80 percent of natural resources belong to communities, so it is absolutely important to involve communities to ensure the success of any project," says Lucille Apis-Overhoff, SPREP's Wetlands Management Officer. "This workshop will provide alternative options for communities so that they can earn an income from non-destructive activities, such as marine ecotourism."

Delegates from the Federated States of Micronesia, Guam, Kiribati, Nauru, Northern Mariana Islands, Palau, and the Marshall Islands attended the workshop.

The workshop was made possible through funding support provided by the Canadian International Development Agency (CIDA) through the Canada-South Pacific Ocean Development (C-SPOD) Program Phase II, and the United States Agency for International Development (USAID).

**Source:** Pacific Islands Report/SPREP, January 2000

## NAURU

### Community boat harbour work completed

Work on the community boat harbour at Anibare in Nauru has been completed. The Japanese-funded project included the construction of a wharf and apron, boat ramp, breakwaters, parking area for boat trailers and access roads, deepening of the Anibare Reef channel and installation of navigation aids and channel markers. It is hoped the project will benefit the fisheries and tourism sectors.

Nauru's fisheries sector is seen as an important source of national income in the post-phosphate economic era. The harbour is expected to aid the development of the fisheries sector, resulting in increased employment and the earning of foreign exchange through exports of fish products.

**Source:** Pacific Report/PINA Nius Online, September/October 2000

## MARSHALL ISLANDS

### Caring for the Jaluit, Marshall Islands environment

Jaluit Atoll has launched a programme that includes marine conservation as well as tourism development. The aim of the programme is to conserve marine life so that it continues to be available for subsistence and commercial use, and to develop other marine-based opportunities such as tourism. The programme is operating under the

RMI Environment Protection Authority with the support of the South Pacific Regional Environmental Programme (SPREP).

Conservation Support Area Officer, Leti Abon, is working with Jaluit Mayor, Anatri Jason, and the local council to develop conservation ordinances in

order to ensure that overharvested marine species are not wiped out. A survey of Jaluit's marine resources conducted in early 2000 showed that because of unregulated, harvesting trochus and sea cucumber stocks are low. To allow their recovery, a ban on harvesting these species has been recommended. For other locally used marine resources, the programme wants to see a monitoring system in place and seasonal harvesting introduced to prevent overexploitation.

When the Jaluit council passes its conservation ordinances, it will be one of the first in the RMI to take such forward-looking legislative action. Abon said there is a need for more community awareness, which he has been working on through meetings and gatherings with Jaluit residents in different parts of the southern atoll. The aims of the conservation project will also be assisted by a Japanese-funded fisheries project, which will train

islanders in deep-sea bottom fishing and take some of the fishing pressure off the inshore resources.

The programme is also working with the council and local leaders in promoting small-scale tourism for Jaluit. Island style guest houses are planned for visitor accommodations. Additional plans call for setting up a handicraft centre, training tour guides, and cleaning historic World War II sites. Many of Jaluit's islands are dotted with World War II relics such as concrete bunkers, fighter plane propellers and anti-aircraft guns. To promote tourism, the programme is also raising community awareness on keeping the lagoon clean. Residents are being urged to keep Jaluit attractive for visitors and residents alike by not dumping garbage in the lagoon.

**Source:** *Marshall Islands Journal/Pacific Island Report*, November 2000

## Women and fisheries – opening access in the Marshall Islands

The AusAID Global Education website (<http://globaled.aid.gov.au/index.html>) now has available primary and secondary school material on women and fisheries in the Marshall Islands. A case study investigates the causes and consequences of women's limited participation in the Marshall Islands fisheries industry. It examines ways of assisting women to participate in fisheries activities, and explains some of the benefits of participation for the women, their families, communities and the wider Marshall Islands society and environment.

The case study is based on the 1997 report, *An assessment of the role of women in fisheries in the Republic of the Marshall Islands*, conducted by Patricia Tuara of the SPC Women in Fisheries Development Project (now part of the Community Fisheries Section). The Global Education website also provides teachers' notes and student activities to complement the Marshall Islands case study.

The Global Education website is an education resource for students and teachers. It has information on a wide diversity of global issues including development economics, governance, HIV/AIDS, human rights, health, refugees, women, the environment, food security and agriculture. Information on countries assisted by the Australian Government's overseas aid agency is also available. The Global Education program provides teachers and students with the chance to investigate these issues on a local, regional and global scale.

Most of the information on the Global Education website is presented in the form of case studies. Each case study is written by a professional curriculum writer and is targeted towards Australian state and national curriculum. The material shows positive approaches to the challenges and opportunities that the global environment presents.

Teachers' notes and student activities are included for each case study. Teachers' notes provide an overview of the case study. They list key objectives and outcomes, provide advice on preparation and procedure, and list other resources relating to the case study and area of learning. Student activities cover a range of cognitive processes designed around the case study. The activities are produced so all or some may be used depending on the teacher's objectives.

The website also provides information on a diversity of other resources available to teach global education in the classroom. This includes the latest videos, publications and other items such as posters. The website has recently introduced a new service called Global Ed. News. This is a quarterly newsletter that informs you of the latest Global Ed. case studies. It lists each case study with a short summary and a direct link where you can save or print out the resource in a form that is ready to use in the classroom. The newsletters also inform you of any recent Global Ed. resources.

## AMERICAN SAMOA

### Community fisheries management workshop

A three-day workshop on community fisheries management was held in American Samoa in December 2000. The workshop, hosted by the Department of Marine and Wildlife Resources and funded by SPREP, invited a delegation from neighbouring Samoa to provide information on their successful community fisheries management programme. The programme in Samoa has gained international recognition for its success in promoting community responsibility for the health of inshore marine areas. Under the AusAID-funded programme, 70 villages have developed fisheries management plans that set the means for protecting their marine resources.

According to Etuati Lopeti of the Samoa Fisheries Division, “the plan is based on their deep knowledge of their seas and environment, instead of having professionals dictate to them...when we approached several villages in the beginning, we did not get discouraged by the refusals by some villages, we just went to the next village and got established. When the programs were moving and results were made known, the ones who refused previously came back and asked for inclusion.

“We made sure we did not promise anything we could not produce, and told the villagers the truth

even if it was not what they wanted to hear,” he pointed out. “The bulk of the effort was making them feel they were part of the problem, and that the solution was theirs alone to develop, together with our help,” Lopeti told workshop participants. “We had to become facilitators instead of experts who knew what to do and were imparting this knowledge for their benefit,” he explained. “Despite our training, the villagers are the real experts of their own seas,” he said. “So, they would know best how to preserve and develop them, helped by our scientific information. But the final decisions on management have to be made by them, not by government experts.”

Lopeti recounted the inability of harsh government laws to control the ruining of the coral reef fish habitats. “There were strong laws by the Samoan government to protect the fish stocks,” he pointed out. “But still, we had the people continuing to dynamite the reefs for fish, as well as continuing to use lethal roots of the *ava niukini* plant for years.”

**Source:** Pacific Report/PINA Nius Online, from an article by Aeolainuu Aleki, *Samoa News*, 5 December 2000.

## TUVALU

### Japan to provide inter-island vessel for Tuvalu

In January 2001 the Government of Japan signed documents for a grant for the construction of an inter-island vessel for Tuvalu. The Government of Japan, through its Fisheries Grant Aid programme, will provide 901 million yen (approximately USD 8.6 million) for the construction of the passenger/cargo vessel. The new vessel will provide regular scheduled services to the outer islands, while the present ferry, *Nivaga II*, will be used to carry passengers and cargo to and from Suva, Fiji Islands.

The new 46.5-metre vessel will carry 80 passengers, 18 crew and 4 cadets. Storage facilities will include holds for dry cargo, fresh fish and frozen foods. The vessel will also be capable of delivering fuel oil and fresh water to the outer islands. The vessel will have a maximum speed of 13.5 knots.

Speaking at the signing ceremony, the Charge d’Affaires of the Japanese Embassy, Mr Akira Goto, said Japan recognised that the development of sea transport infrastructure was vital to island economies such as Tuvalu’s. He said that Japan was committed to working with the Government of Tuvalu towards promoting Tuvalu’s economic independence and the well being of its people.

**Source:** PACNEWS, Pacific Islands Report, January 2001

## FIJI ISLANDS

### Aquarium trade in the Pacific to be certified

A pilot project to implement international standards and practices in the Pacific region's growing marine ornamentals industry will include Cook Islands, Fiji and Solomon Islands. Initiated by the South Pacific Forum Secretariat in Fiji and the Hawaii-based Marine Aquarium Council (MAC), the project will work with the three countries to introduce a certification and labelling system for their marine ornamentals industry. Government, industry, NGOs, and individual communities will be involved in the process.

Eseroma Ledua of Fiji Islands, former Principal Fisheries Officer with the Fiji Fisheries Division, is the Project Manager. The key objective of the project will be achieving a balance between developing profitable reef-based industries, maintaining reef health, and minimising environmental impacts.

Comprising the world's greatest number of coral reefs, the Pacific region is home to an unparalleled diversity of marine life that is vital to the environmental and economic health of Pacific Island countries. In 1990, the region is estimated to have supplied four to 10 per cent of the world's marine ornamentals, consisting of 200,000 to 250,000 fish, worth USD 1–1.5 million.

The project is part of the Canada-South Pacific Ocean Development (C-SPOD) Program, Phase II, which is funded by the Canadian International Development Agency (CIDA) and coordinated by the South Pacific Forum Secretariat and LGL Limited, Canada.

**Source:** PACNEWS, September 2000

### Protecting coral reefs and marine life in Verata, Fiji Islands

Verata district, north of Fiji's capital of Suva, is the source of an important staple of Fijian village life, the shellfish *kaikoso*, *Anadara antiquata*. Villagers in Verata rely on the shellfish not only for subsistence, but also as income to pay for necessary expenses, such as school fees. *Kaikoso* is one of Verata's most sought after resources and is therefore vulnerable to overharvesting. Four years ago, a community project was launched to conserve the stocks of *kaikoso*.

The project was simple: provide information on community-based marine management to villagers. Coordinated by the US-based World Resources Institute (WRI), similar ventures are taking place in 20 other sites in the Asia-Pacific region. The project supports local management and involves setting up small-scale marine reserves to be managed by local communities. Protecting coral reefs and marine life is a priority in the Pacific where many livelihoods are dependent on the sea.

In the Verata district, villagers were provided with information from researchers at the University of the South Pacific (USP) about the harms that they might be causing to their reefs and marine life. They were told what could happen if they designated an area where people would agree not take *kaikoso*. Left untouched, the tabu area was expected to eventually yield more shellfish than those areas routinely fished.

A key component of the project is to provide information, but not force people to change their practices. "We said, let them make their own decisions. They have to set up the area themselves," says the coordinator of the WRI project in Verata, Professor William Aalsberberg, director of USP's Institute of Applied Sciences. The villagers in Verata acted on information they gained from informal meetings and workshops, asking themselves questions such as "what are the situations leading to low yields and what are the ways to solve the problems?"

Actions taken by the communities include the banning of commercial fishing licences, limiting the mesh size of nets, banning the capture of turtles and setting aside a small area of their mudflats (where the *kaikoso* are found) as reserves.

Because of the nature of their spawning, the *kaikoso*, through current action, have repopulated areas adjacent to the reserves. Fish, shellfish, sea cucumbers and many other marine animals release sperm and eggs into the water where they mix. The eggs become fertilised and develop into larvae — tiny, swimming forms of the animal. Because adult shellfish are not able to move very far or fast there needs to be a number of individuals close together during spawning in order for fertilisation to be successful. A reserve ensures that enough adults are left in one area so that sperm and eggs meet and fertilise. The larvae drift with the tide and may end

up outside the closed area before settling on the sea bed and growing into adult kaikoso.

Eighteen months after the project started, monitoring by the villagers found six times as many kaikoso in the tabu area and three times as many in the areas still used for fishing. Aalbersberg, who oversees the WRI project, says that the villagers were very pleased with the results. "They're like zealots or missionaries now, telling everyone about the success," says Aalbersberg, who has worked in Fiji, on and off, for close to thirty years.

Aalsberberg says the Pacific region is making a name for itself in international conservation circles. "Indigenous people tend to control their communal sites, because they have meaning for them." The success of the project in Verata – and of similar projects in Fiji, Solomon Islands, Papua New Guinea, Palau and Cook Islands – has drawn attention and interest from the World Resources

Institute. "There is some skepticism on the approach of community monitoring," explains Aalsberberg. Scientists feel the results, and the counting method, might not be academic enough." He shrugs off this doubt: "We will take them, and they can count the kaikoso alongside the villagers. The villagers will probably be more accurate."

In August 2000 the World Resource Institute coordinated a workshop in Fiji Islands to discuss standardised monitoring procedures for a new approach to sustainable fisheries and marine conservation. Participants from Fiji Islands, Solomon Islands, Papua New Guinea, Cook Islands, Palau and the United States agreed that community-led marine reserves are important tools in addressing overfishing and destructive fishing practices in the Pacific.

**Source:** Pacific Island Report/PINA Nius Online, July 2000, *Islands Business*, October 2000

## NEW CALEDONIA

### Ouvéa islanders catch 230 tonnes of fish each year

Coastal communities on the tiny island of Ouvéa (north of New Caledonia) catch some 230 tonnes of fish each year according to a survey jointly conducted by the Secretariat of the Pacific Community (SPC) and the French Institute for Research and Development (IRD). The survey, which was described in the daily *Les Nouvelles Calédoniennes*, was carried out in May and June of 2000. It concludes that the 230 tonne figure could be improved, since it only represents twenty percent of the annu-

al fish resource potential, estimated at around 1000 tonnes. But it still made Ouvéa the largest fish consumer per capita in the French territory, with an average of 45 kilograms (almost 100 pounds) of fish consumed each year per inhabitant. Fishing facilities in Ouvéa include about 65 outboard fishing vessels in operating condition.

**Source:** Oceania Flash/SPC September 2000

### Crabs are women's business

by Charlotte Antoine

After a two-month lull, Jojo is back in action. The crab-hunting season opens on 1 February. It's serious business and you have to be the first one there. Most importantly, it's women's business. "In the old days, only the men went out to work, so the women went fishing. It's a tradition that has persisted," explained Jojo.

Also, like most women, Jojo started crab-hunting young. "My grandmother taught me. I was five years old," she added. "And now I'm the one taking my nieces out hunting."

### In rhythm with the moon

She will be off this morning at low tide. "You have to find good holes and good crabs," she said yesterday as she described what her day would be like today.

"I'll leave at about six o'clock, when it's low tide." Every day from now until 30 November, when the season closes, she'll be checking the tides and the new moon and its quarters. "Crabs moult each quarter moon and they've got to be at least 15 cm long."

“There’s no point hunting at the end of the quarter moon, because the crabs are empty. They have moulted and are hiding, living off their reserves. You have to wait until they come back out of their holes to hunt for food again.”

### Constantly bent double

When Jojo goes out, she never knows when she will be back. “I usually walk 15 to 20 kilometres.” But you can never take a catch for granted. “To begin with, crabs have to be regulation size. And, we don’t take soft or semi-soft crabs. Finally, if we find a female with eggs on its belly, we leave it alone and let nature take its course so that it can finish what it has started.”

The adventure begins as soon as Jojo gets to the mangrove swamp. “You go deep into the mangroves, wading through mud right into the roots. Once you get there, you’re forever bending over, crouching and standing up again.” It’s a real obstacle course. Every so often she stops, listens and checks. When she gets to a hole, she looks carefully and then rummages around in the mud with her hook. “Crabs can be deep down and you sometimes need to cut longer branches to be able to dig them out”. The fun of the sport is to ease the crab out without a struggle. As Jojo says, “First one leg, then another and you’ve got your prey. It’s 15 cm. Great! We can take it.”

### Traps

“Then you’ve got to be careful not to get pinched. You have to fold back the crab’s claws and hold the animal against you while you tie it up. I usually use reeds, which are quite strong.”

Jojo only thinks about going home once she has caught a few kilos of crabs. “There are other ways of hunting,” she adds. “You can use traps which you set on the riverbanks. That’s easier, because you lure the crabs with fish. Then you just have to wait for them to fall for the trap.”

But Jojo clearly prefers mangrove swamps and walking. “I can’t wait to begin again tomorrow.”

### Northern Province: 40 tonnes in 1999

Mud crabs live in shallow (0–10 m) soft mud or sand and mud sea bottoms associated with mangroves. In New Caledonia, the largest mangrove swamps are located on the west coast and in the north of the main island (Arama, Poum, Ouégoa, Touho, Voh, Ponérihouen, Canala and Poya). Mangroves cover approximately 20,000 hectares of coastland, around 1.2% of New Caledonia’s overall land area.

Once caught, the crab is tied up. Some women use inner tubes and others use reeds. But care needs to be taken, as crab claws can do a lot of harm.



Jacquette Samperez [Tour de Côte]

In the Northern Province, the west coast, which has many shallow swampy bays, is the most favourable breeding grounds for this species.

There are seven major commercial fishing operations in the Southern Province who supplied 17.6 tonnes in 1999, compared with 40 tonnes the same year by crab hunters in the Northern Province.

### Different regulations in the North and South

Crab hunting is legal from 1 February to 30 November in the Southern Province and from 1 February to 30 September in the Northern Province. Hunting, transporting, selling, storing or eating soft crabs and crabs measuring less than 15 cm in the Southern Province and 14 cm in the Northern Province are prohibited at all times. Crabs must be sold whole.

The reason regulations differ in the Southern and Northern Provinces is that crabs measuring more than 15 cm are difficult to find in the Northern Province. That is why the size has been reduced to 14 cm. In compensation for the smaller size limit the open season in the Northern Province is shorter.

These regulations used to be a Territorial matter, but since 1992, they have devolved to the Provinces. The Northern Province set out its own requirements and even pled its case before the French State Council.

### A few recipes

#### Stuffed crab

- Take some large crabs (approximately one per person) and shell them.
- Soak some bread with the crust removed in a litre of milk.
- Add beaten egg (about one per crab), crab meat, garlic, salt, pepper.
- Place the mixture in a greased dish or crab shell.
- Bake in the oven for approximately 15 minutes.
- When the top turns golden brown, turn off the oven and add grated Swiss cheese.
- Leave oven door ajar and allow cheese to melt.
- Serve hot.

**Crab in mayonnaise**

- Bring water to boil in a good size pot and place the crab inside.
- Bring back to the boil and leave for another 15 to 20 minutes.
- Serve cold with mayonnaise.

**Curried crab**

- Cut the crab in two, remove gills and pound the claws (to make them easier to open after cooking).
- Make a curry sauce.
- Fry onions in butter.
- Cook in sauce for about 15 to 20 minutes.
- Suggestion: the curry sauce can be replaced with a coconut sauce.

**Steamed crab**

- Cook as with curried crab, but use tomatoes instead of curry and add a glass of water.

**Tips****How to choose a crab that is full**

There are several ways of choosing a crab that is full: you can lift it to see whether it is heavy, look underneath it to see whether its belly has a yellowish colour, or check whether the claw tips are red.

**Forks or hooks?**

Hooks and forks are used to catch crabs in their holes. Hooks are used at low tide, whereas forks are used when the tide is coming in or going out. They are used to pin down the crabs and prevent them from escaping.

**How to tell whether a hole has a crab inside**

Look carefully and check for tracks. Note whether the edges of the hole have been cleared and whether there are any ripples in the water. If so, the hole is likely to be occupied.

**Traditions**

All crab hunters follow the traditions handed down from grandmother to mother to daughter. Spitting into the empty shells to make crabs come back is one of them. And if we can believe crab hunters, this really does work.

**Crab stories**

According to one story, in some parts of New Caledonia, you can see the face of a woman on the shells of male crabs.

**Source:** *Les Nouvelles Calédoniennes*, 1 Feb. 2001

## AUSTRALIA

### Victorian women in seafood industry network

The Victorian Minister for Energy and Resources, and Ports, the Hon Candy Broad hosted a workshop for women in the seafood industry at the National Wool Museum in Geelong, Victoria. The workshop, titled "Fishing for Success: Women in the Seafood Industry", was aimed at recognising the role women play in the fishing industry and allowing them to pursue an active and visible role through the Women's Industry Network – Seafood Community.

"We were pleased with the response and the enthusiasm to the workshop with over fifty women from the west of the state attending. It shows us that a women's industry network for the seafood women is needed. Those women in gumboots, those out there working in the industry, do want to be more involved in the decision making process, after all it is their livelihood at stake as well as the men's. Until now these women have been the forgotten faces of the seafood industry," said Miss Katy Saunders, Director of National Women's Industry

Network. "The women at the workshop represented the many sectors of the seafood industry with wild catch, aquaculture, wholesale, processing, research and government all attending. We were pleased to see information and contact details being exchanged so that a new network can be created," said Miss Saunders.

The workshop is the initiative of the Minister for Energy and Resources, and Ports, and the Women's Industry Network with support provided by the Rural Women's Network. The Women's Industry Network Seafood Community (WINSOC) is a non-profit independent productive network. It is managed by an Executive Committee and governed by a National Board of Directors. The WINSOC is a body responsible for linking together women of the fishing and seafood industry from around Australia. Seafood women work alongside their husbands/partners, either as company partners, working in the processing plants or on the boats and in the sheds, doing the bookkeeping, writing

letters, attending meetings and supporting their family as they are major stakeholders in the seafood industry and its future. Other women involved or associated with the seafood women also have an important role to play as trainers, researchers, managers, government agencies and service providers.

The WINSC recognises these attributions and the potential expertise and skills of seafood women and provides a network that will enable them to take an active, creative and visible role at local, state and national levels in ensuring a sustainable industry.

**Source:** *Professional Fisherman*, November 2000

## Making the best of the pest that clogs the nets

by Jacquie Edwards, Ross Naidoo and Sue Poole

One man's trash is another's treasure. That pest that clogs the nets and reduces target catches could be the next big thing on the menu. Jellyfish is a highly regarded delicacy in Asia and although it is generally regarded as a nuisance to the Australian fishing industry, the retail value of processed products in Japan ranges from A\$50 to A\$70 a kilogram.

Reduced fishing seasons and jellyfish catches in Asia have resulted in increased interest in harvesting the common blue jellyfish, *Catostylus mosaicus*, from Australian waters. The blue jellyfish is distributed all around the Australian coast and research into its suitability for processing has had favourable results in the Asian market. Recently both Victoria and New South Wales have instigated management plans and an exploratory licence has been issued in the Northern Territory (*Professional Fisherman*, February 2000). There has also been interest in developing a fishery in Queensland.

The world harvest of jellyfish tops 250,000 tonnes annually resulting in 25,000 tonnes of processed products. The demand in Japan is approximately 11,000 tonnes a year, potentially making jellyfish a very big earner for Australia. The jellyfish are simply harvested using a dip or scoop net. Large congregations of jellyfish are common during the summer, particularly in northern Australia. The jellyfish, although having some degree of mobility, are taken along with the currents and wind and large numbers can be seen inshore and caught in bays, marinas or estuaries when conditions are right.

Jellyfish processing methods are well documented. The tentacles are separated from the bell of the jellyfish and cleaned to remove dirt and mucus. Both parts of the jellyfish are used with different cultures preferring either the bell or the tentacles. A mixture of salt and alum is used to remove moisture in a series of drying stages, and up to four salting steps are used for the top quality jellyfish prod-

uct. The drying of jellyfish is quite labour intensive, as the jellyfish require cleaning and turning during the drying process. Traditionally, this process is manually performed.

Once salted and dried, the jellyfish still require several steps, including de-salting, cooking and rehydrating, by the purchaser before it is ready to be served. Semi-dried jellyfish is eaten in a number of ways, but it is usually enjoyed as a bar snack with a cold beer or as a special entrée. It can also be used as an ingredient in a variety of dishes.

Les Spinks of Seafood Processors and Exporters Ltd in Ballina, New South Wales has been processing semi-dried jellyfish in Australia for several years. Recently he approached researchers at the Queensland Department of Primary Industries' Centre for Food Technology to explore the potential of adding value to the dried product. With funding support from FRDC's Seafood Services Australia, a ready-to-eat marinated jellyfish product has been developed.

It became apparent during trials that acceptance would be based on the unique texture of jellyfish flesh. The texture of the jellyfish product is all-important. Without the correct tender but crunchy texture, any newly-developed Australian products will not be acceptable to the market. This attribute is not only achieved during the salting and drying process but through cooking as well. As the product is usually cooked by the consumer, the researchers had to develop cooking techniques for the product from a starting point of anecdotal evidence from consumers. On its own, the jellyfish has no flavour and is usually consumed with a soy sauce-based marinade. The project work involved development of a marinade using traditional Asian recipes and the final product is now ready to be assessed by traditional jellyfish eaters with the Sensory and Consumer Science group at the Centre.

One major benefit of making a pre-shredded marinated product is that it removes the emphasis from the jellyfish bell size, the traditional grading system of jellyfish in Asia. The other is offering convenience to the purchaser, as the marinated product can be eaten on its own or used in a variety of recipes without the lengthy preparation.

The most lucrative market in the world for processed jellyfish is Japan, consuming over 40 per cent of the highest quality production. The majority of this production is currently supplied by China. The value-added Australian product, as developed by the research team, is designed to target the high value convenience market in Asia. The success of this product in Asia will enhance the development of other fisheries for undervalued species.

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**Source:** *Professional Fisherman*, May 2000

## NEW ZEALAND

### Second regional course on seafood enterprise operations and management for Pacific Island women held in Nelson

SPC Fisheries Training Specialist (FTS) Terii Luciani travelled to Nelson (New Zealand) in late November to assist in the supervision of a regional course for Pacific Island women on seafood business operations and management. The course was part of the SPC Fisheries Training Section's regional programme on the management of fisheries enterprises and was funded through a grant from the New Zealand Government.

A total of 10 women from around the Pacific attended this course for three weeks. The main objective of this course was to provide an opportunity for women involved in seafood business management and operations to upgrade their technical

skills and develop strategies for enhancing the commercial viability of these businesses.

The course programme was developed around two main subject areas: "Seafood Technology" and "Seafood Business Management"; each area covering a number of specific subjects or topics, including:

- Seafood Technology
- Seafood Quality and Handling
- Seafood Spoilage
- Seafood Hygiene, Sanitation and Food Safety (including HACCP)
- Seafood Legislation
  - Seafood Products, Processes and Technologies
  - Seafood Product Development and Improvement
  - Factory Visits
  - Laboratories/Practicals/ Work Groups
  - Seafood Business
  - Staff Performance Management
  - Accounting and Financial Reporting
  - Budgeting and Business Planning
  - Marketing



Terii Luciani

*Elvine Lehartel from Tahiti attended the course*

On the last day of the course, the trainees were asked to complete a formal evaluation of the course. The evaluation was in 3 parts. The first part covered the content of the programme, the second covered general organisation, and the third helped SPC and the School of Fisheries with the planning of future courses.

A few important points came out of these evaluations, including the decision to run a third regional course in 2001. In general, the participants indicated that they were more than pleased with the programme as delivered. There seemed to be some debate as to the relevance of Accounting and related topics for the target audience but several participants indicated that these topics were a necessary part of their business and, therefore, relevant.

Many participants enjoyed the practical aspects of the programme and the factory visits, and suggestions were made that this part needed to be expanded. To this end, future programmes may be better if half the day was spent on theory and the remaining half day spent on practical, factory visits or presentations of products and services by New Zealand suppliers.

*Other extra curricular activities included a visit to a green-lip mussel farm*



Terri Luciani

## Two women on the Nelson Polytechnic Pacific Island fisheries officers training course

The 22nd SPC Nelson course welcomes the participation of two women in the region's most popular fisheries training programme. The two female participants are Ms Lausu Asela from the Ministry of Fisheries of Tonga and Ms Tukutama Desiree Pauai from Niue Fisheries Division. The SPC Nelson course is an annual event and has been attended by 256 fisheries officers from 21 countries and territories.

During the reporting period, Section staff liaised with the New Zealand School of Fisheries tutors for programme contents and course organisation, selected course participants and organised travel arrangements. The course will start on 12 February 2001 at Nelson and will be attended by a total of 12 participants from the region.

Many participants indicated a need for more staff performance management and related topics in future deliveries. This could be achieved by either reducing hours for Accounting and bookkeeping or in the seafood technology areas. More emphasis on Seafood Technology topics was welcomed. The facilities and management of Franklyn Hall were applauded and participants were pleased with the organisation and helpfulness of School of Fisheries staff and, in general, acknowledged that Nelson was a good venue.

**Source:** SPC Fisheries Newsletter No. 95

This year a French speaking trainee from Wallis and Futuna will be attending the course. He will be in New Zealand five weeks prior to the course commencement to attend an intensive English language programme.

This regional course is funded by the New Zealand government, the Commonwealth Secretariat and the Commonwealth Foundation.

**Source:** SPC Fisheries Newsletter No. 95

# WHAT'S HAPPENING

## OUTSIDE THE REGION



### GENERAL

#### Consensus or conflict? Time for a reality check on community-based sustainable development

Global consensus emerged in the 1990s that the key to sustainable development is local-level solutions. Such approaches are evident across a wide range of sectors and in the policies of governments, donors and NGOs. All call for shared management of natural resources across the board, based on the assumption that communities are homogenous and consensual. Yet, how real is community-consensus? Does it feed into expected improvements to the environment? Collaborative research by the UK Institute of Development Studies and research centres in India, Ghana and South Africa suggests that understanding the conflict within communities is the key: social and ecological differences are complex and cannot be ignored.

It has hitherto been assumed that communities are consensual and distinctive as a unit, that they have stable, universally valued environments and that the relationship between a community and its natural resources is harmonious. The research takes a different starting point rooted in an appreciation of diverse social identity such as gender, caste, wealth, age, or origin. Rather than shared beliefs and interests, people have different and often conflicting values with different priorities that can be negotiated or bargained for. What is the real relationship between people and their environment? How do individuals or groups view environmental resources, for what purposes and at which times of the year? How do different people gain access to and control over resources and how do they use them to sustain their livelihoods?

The case studies in this IDS bulletin present a very different perspective on people-environment relations to traditional pictures of community-based sustainable development. The focus on different and sometimes conflicting values, and on the institutional arrangements by which people access and control or even compete over environmental goods presents fundamental challenges to policy:

- A deeper view is needed of institutional relationships at the local level that emphasises the differences between individuals and their relations with the environment and institutions.
- Alternative approaches to institutional design are essential, ranging from targeted interventions to more flexible learning processes.
- It makes sense to support effective negotiation processes that include measures to enhance people's capacity to stake claims on resources through participation and empowerment.
- 'Community' imagery intended for local-level implementation can be used strategically and effectively by local people and other stakeholders to help define and direct processes of change.

**Contributors:** Melissa Leach, Robin Mearns, Ian Scoones

**Source:** *Community-Based Sustainable Development: Consensus or Conflict?* IDS Bulletin, Volume 28 (4) edited by Melissa Leach, Robin Mearns and Ian Scoones, October 1997.

## Women feed the world

Women are vital in nourishing the world. They produce 60 to 80 percent of the food in most developing countries, and their role in farming continues to grow. In 1950, women performed almost 40 percent of agricultural work. Today they perform close to half globally and are the primary food producers in many parts of the world. As the ancient African proverb wisely states, “without women we all go hungry.”

On International Women’s Day 2001, Future Harvest launched a new website dedicated to women farmers, foresters, fishers, and herders. The website highlights how women overcome long odds to feed their families, promote peace, and gain livelihoods in developing countries.

To read more about the women who feed the world, visit:

[www.futureharvest.org/people/women.shtml](http://www.futureharvest.org/people/women.shtml)

**Source:** Future Harvest PMB 238  
2020 Pennsylvania Avenue, NW  
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E-mail: [info@futureharvest.org](mailto:info@futureharvest.org)

## Fish FAQs

The US Northeast Fisheries Science Center’s website offers a wealth of fascinating facts about fish and other marine species. Basic information how many species of fish there are, whether fish sleep and whether they can swim backwards to more specialised facts such as what lobsters eat and how many offspring shrimp produce during spawning can be found here. Although many of the facts relate to commercial species known in the US, there are a few interesting bits of information relevant to the Pacific Islands.

### *A few examples of the questions and answers offered on the website:*

#### *What is the largest fish? the smallest fish?*

The largest is the whale shark, which grows to more than 50 feet in length and may weigh several tons; second largest is the basking shark, which may measure 35 to 40 feet long. The smallest fish is the tiny goby, an inhabitant of fresh-to-brackish-water lakes in Luzon, Philippines. It seldom is longer than a half inch at adulthood, yet is so abundant it supports a fishery.

#### *Why do food fish sometimes have a strong odor?*

For most species, truly fresh fish is almost odorless. Fish begin to smell “fishy” when deterioration sets in, often caused by incorrect storage practices that bring about the release of oxidized fats and acids through bacterial and enzymatic action.

#### *What is the biggest bivalve mollusk, cephalopod mollusk, and crustacean known to man?*

The biggest bivalve mollusk is the clam *Tridacna*, native to the Indo-Pacific, which reaches a weight of 500 pounds. The giant squid, nearly sixty feet long, is the biggest cephalopod. The Alaskan king crab is the largest of the crustaceans, weighing up

to 15 pounds, and measuring four to five feet across shell and claws.

#### *What do oysters and clams eat?*

Called filter feeders, oysters and clams eat plankton. By pumping water through their bodies, the mollusks strain the microscopic organisms through their gills, which act as sieves.

#### *Clams seem to squirt water through their siphons. What purpose does the siphon serve?*

Three main purposes: breathing, obtaining food, and eliminating waste products. Since clams are relatively immobile and movement is usually limited to burrowing in the sand, their double-tubed siphon—which operates much like a snorkel—is their lifeline. Inflowing water is pumped through the siphon, passed over the gills, and strained to remove food particles. After receiving carbon dioxide from the gills and other waste products from the digestive tract, the water is expelled through the outgoing siphon. Constant circulation of the water is maintained by the beating of a multitude of microscopic hairs (called cilia) located inside the tube and in the gill chamber.

### *How do clams reproduce?*

Eggs and sperm are released into the water seasonally, generally in mid-summer when water is warm and planktonic food is abundant. After fertilization of an egg, cellular division produces larvae and eventually tiny clams that settle to the bottom. In a few species, the final stage is completed within the mantle cavity of the parent.

### *How do oysters produce pearls?*

Pearls begin with the presence of a foreign substance, such as a grain of sand, that lodges in the shell. The oyster's body reacts by depositing layers of nacreous (pearl-like) material around the foreign

body to wall it off and reduce irritation. Many oysters—as well as some clams and mussels—manufacture material like the pearl-producing substance. True pearl-producing oysters, however, inhabit waters of the Indo Pacific.

### *Are there any poisonous snails?*

Yes. Cone shells (family Conidae) include members with toxic venom. These mostly tropical forms can be highly toxic, even fatal, to man. Their poison is injected by a spear-shaped rod called a radula.

### **Source:**

The US Northeast Fisheries Science Center's website: <http://www.wh.who.edu/faq/index.html>

## BRAZIL

### Proud to be a fishworker

*Women should keep their heads high and not let go of their struggle*

*Excerpts from an interview with Joana Rodrigues Mousinho, President of the fishermen's colonia\* of Itapissuma in Pernambuco, Brazil, by M.G. Indu of ICSF's Documentation Centre at Chennai.*

I was born in the city of Itapissuma. I belong to a family of fishermen and I started fishing at the age of eight. The women's group I work with began in 1975 with the help of the church. This group started very small, but we all realized we had to defend our rights as fishworkers. We did not have licenses to fish like the men and that was basically our main issue. Today we women fishworkers have licenses. This was the first place in the whole of Brazil where women were given fishing licenses and recognized as fishworkers, just like the men.

I was elected as President of the *colonia*. In the beginning it was very difficult because most of the men believed that the position of a woman was behind the stove or behind the sink washing clothes. Now I am very happy with my work in the *colonia* of fishermen, I am well accepted and many people support me. I fish shrimps, oysters, different types of shellfish and I am very proud to be a fishworker.

I do what I can to defend the rights of the fishworkers and the shellfish gatherers. The *colonia* now has about 2,225 members — 1000 men and

1225 women. They are registered in the national welfare system. Today we have 810 women fishworkers who have retired and receive retirement benefits. Women fishworkers also get maternity allowance and an unemployment allowance during the off-season for shrimp. We also have social security in case of accident or death and I believe that us women have great advantages in the fisheries sector. And it is mostly the women who pay the *colonia* dues for themselves and also for their husbands who often do not give their payments on time.

It is not easy to administrate this *colonia* with more than 2000 registered fishworkers, and also other fishermen who are not registered but still have the same problems. It has not been easy administering this group, and to also be a fishworker, a mother and a grandmother. I was earlier the president of the Federation of Fishermen of the state of Pernambuco. I was elected but I did not like it. I was the first woman to be elected to this position. It was very complicated. All the presidents of *colonias* were only men. They were even upset with me when I went to a meeting in Brasilia with the Ministry of Environment. They thought that I was

\* Colonia: cooperative or collective

not supposed to go and that I wouldn't be capable of doing the job.

At the present there are at least three women Presidents of *colonias* in Pernambuco. There are also women who hold positions such as Secretary and Treasurer so that is an advancement for women. So in this sense women have taken a very big step towards improving their rights and that of fishermen in general in the movement.

Women fishworkers collect crabs, mussels and other shellfish and take these to the beach to sell. They also make and repair nets, and sometimes help to repair boats. They participate in the meetings of the community, besides the ones of the *colonia*, and they also take care of the house, the children, and the fishermen, besides doing the other chores of the house like cooking, cleaning, gathering firewood and washing the clothes. They may also wash the clothes for other people to get extra income.

Sometimes women bring in more income than their fishermen husbands. The women actually go out and capture the fish and they themselves are the ones who go and sell it. On the contrary the men go to fish on boats which are not theirs using tools which are not theirs and they have to then share with the owner of the boat and the net. They then take very little home. This is not in all the cases, just in some. But in theory, if every fisherman had his own boat and net, he will bring in more income.

Women do not do any fishing in the open sea. Our area is the estuarine mangrove area. We mostly work inside the estuary and the problem we have is the destruction of the mangrove habitat, as a result of shrimp aquaculture projects. Since most of the women are single mothers and get their daily meals from the mangroves, this destruction is affecting directly the women. So the women know that they have to struggle and go after these issues because that is what their livelihood depends on.

Another big problem that we have is the use of

explosives for fishing where all the fish are blown up inside the water, eliminating every single species in our area. Today we do not have as many fish as we are used to probably due to this pollution and the use of explosives. Another threat that we are confronting is that our small community of about 20,000 inhabitants has been trampled by tourism. We have the Santa Monica channel which is so beautiful and there are many mangroves. This attracts many tourists who come in jetskis and high speed boats. These often get entangled in our nets and destroy them. We had an accident where one of these high speed boats hit a fisherman and killed both him and his 14-year old son, except that the owner of the boat was not prosecuted because he is a very rich and powerful man. So the case has been unresolved.

However, because of this we do not hang our heads low and not fight for our rights. On the contrary now we have the help of other persons who enforce our struggle for fishermen's rights in this area. I have a grandchild who is five years old. Before coming here the TV network "Rela Global" interviewed me about the mangroves and my grandchild told me he had seen me on TV. He was very excited. I told him he should not be excited about me being on TV because this is a struggle and you only achieve things when you struggle for them and you have to start when you are little to fight for things that you will achieve later.

What I would like to tell the other women is that they should keep their heads high, they should not let go of their struggle and should be strong and fight for their rights that they have as fishworkers, just like any fisherman!

**Source:** Yemaya: ICSF's Newsletter on Gender and Fisheries. No. 4 August 2000

ICSF is the International Collective in Support of Fishworkers. email: [icsf@vsnl.com](mailto:icsf@vsnl.com), Website: <http://www.icsf.net>

## Invisibly yours

Also from Brazil is the report of a six-day workshop on *Gender and Coastal Fishing Communities in Latin America*, held in the coastal fishing village of Prainha do Canto Verde, Brazil, in June 2000. The full article about the workshop by Chandrika Sharma, Programme Associate of the International Collective in Support of Fishworkers (ICSF) can be found in the August 2000

issue of *Samudra*. The workshop was held as part of ICSF's Women in Fisheries Programme and had the following objectives:

- develop an understanding of trends in fisheries development and their implications for coastal fishing communities in the Latin American context;

- acknowledge women's roles in fisheries and in fishing communities in Latin America, and to reflect on strategies to strengthen their meaningful participation; and
- facilitate greater networking among organisations representing, and working with, artisanal fishworkers in the Latin American context.

Thirty-six participants, both men and women, attended the workshop, including representatives of Latin American countries as well as ICSF representatives from India, Belgium and Brazil. During the workshop it was recognised that the pressure on coastal fishing communities and their livelihoods is increasing. Despite cultural differences between regions, and differences between rural and urban areas, the workshop found a common factor regarding the work of women within fishing communities.

According to the report, the common factor is that "the work of women is rarely seen as 'productive.' It has low social value and is normally seen as an extension of the 'domestic' space. Little value is attached to the domestic and community tasks performed by women. This is despite the enormous diversity of tasks performed by women."

As in the Pacific, women may perform a wide range of fisheries activities including marketing, processing, gleaning, net-mending, seaweed cultivation, fish smoking, drying and salting, and fishing. In addition, they may also take on work on behalf of husbands, such as dealing with financial institutions for credit and repayment of loans. Women dominate the processing sector, taking part-time or full-time work in processing plants — often repetitive and low paid work with poor conditions. Also, women are typically responsible for the family during absences by their fishermen husbands, and often take on activities outside the fishery to give the family some form of stable income.

The question then asked at the workshop was "why then does the work of women continue to be invisible?" This provoked interesting discussions on gender issues — what the concept of gender actually was or meant, and how this conceptual understanding could be translated into practical initiatives. During the workshop there was consensus that women have always been important in the fisheries and in fishing communities, other issues provoked debates and resulted in the emergence of different positions. The concept of 'gender' was seen by some as being introduced by the west, a position that has been echoed in the Pacific. According to this position "traditional societies in many parts of the developing world are based on relations of complementarity, where both men and

women perform different, but complementary, roles. There is no concept of inequality and competition in relations between men and women; rather, the emphasis is on oneness and complementarity."

Others felt that it is important to recognise that women are discriminated against in many ways, often not receiving the same opportunities in life as men. According to this position, men have more power within the family and the community, "and this has been used and abused." The lack of recognition of the work of women, especially within the household, was one perception that needed to change. However, those taking this stance also warned against creating conflicts between men and women over differences in perspective on gender issues. They advised that "discussions on issues need to take place within a larger context of affirming the culture and identity of coastal fishing communities, and of strengthening these communities. It should take place within a context of creating a new type of society, which values the labour and role of women."

One woman at the workshop expressed concern that the issue may remain merely a verbal concern, with little actual implementation taking place. Practice, not talk, is important she stressed. Another woman cautioned about the way mainstream agencies are interpreting gender in fisheries issues by attempting to increase women's economic participation in the fishery, "without an understanding of the larger social context."

Despite the different perspectives and positions taken by the workshop participants, a number of agreed upon points emerged:

- the work and roles of women within the fisheries and within fishing communities have historically been, and continue to be, important, though often invisible and undervalued;
- there is a need to assign value to the work and labour of women, and to recognise this as an important part of the productive chain within family enterprises. This may involve redefining what is seen as fisheries;
- these efforts need to take place within an overall context of strengthening and affirming the way of life and cultural identity of coastal communities, and on fostering mutual respect between men and women. There is a need to be wary of triggering a divisive conflict within the community;
- women's participation in fishworker organisations should be seen as vital in not just support-

ing issues important to men. There are issues that are specific to women that need to be addressed too. The role of women should not be seen as complementary, but as an issue in its own right.

The full text of this article by Chandrika Sharma may be found in the August 2000 issue of *Samudra*, published by the International Collective in

Support of Fishworkers (ICSF). *Samudra* is published three times a year in English, Spanish and French, and may also be found online at:

<http://www.samudra.org/icsf/online.htm>

## PHILIPPINES

### Former combatants find peaceful life as seaweed farmers

The October/December 2000 issue of *Appropriate Technology* includes an article about former combatants in Mindanao, Philippines turning to seaweed farming instead of conflict.

The area was the scene of a twenty-year conflict between the Moro National Liberation Front (MNLF) and the government. The conflict ended with the signing of a peace agreement in 1996.

A USAID-funded project has been assisting former combatants of the MNLF to plant a variety of crops, including seaweed. Having no alternative form of livelihood after two decades of conflict, many former fighters felt restless and isolated from the economic development taking place in other parts of Mindanao.

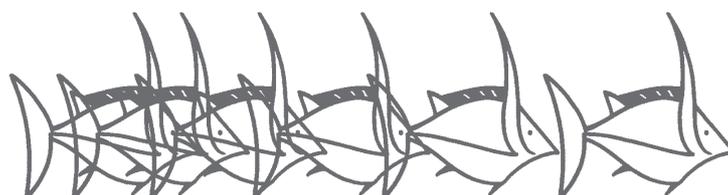
Hasan Diru is a former fighter with the MNLF, he now cultivates seaweed on floating bamboo rafts. Hasan used some of the proceeds from his first and second harvests to buy a small motor boat which he uses to maintain his farm and to transport his produce.

His wife, Odgiey, used funds from the first few harvests to set up a small grocery store, which services about 1000 families in nearby "sea villages" on the island of Kabukan in Sulu Province.

"My view about life has changed dramatically," Hasan says, musing over the effects of seaweed farming on his community. Hasan is now more confident in being able to provide for his family's daily needs and his three children's education. Hasan is now one of thousands of seaweed growers contributing to the millions of dollars earned by the annual export sales of carrageenan, an additive derived from the seaweed.

Hasan and his fellow seaweed growers use the floating raft system, with the seaweed remaining in the water regardless of tidal changes. To create a seaweed raft, a farmer needs styrofoam floats, 14 bamboo poles each about 4 metres long, plastic straps, plastic "straw", and iron stakes. The bamboo poles are placed seven to eight metres apart and tied with plastic straps to form a raft 60 to 100 metres in length. The floats keep the raft suspended in the water. The raft is then towed to a suitable farming area along the coast and fastened to iron stakes driven into the seabed, stones, or other materials to keep it in place. Seaweed cuttings are then tied to the raft with plastic straw. The seaweed hanging from the floating raft benefits from an uninterrupted flow of nutrients and is not directly exposed to sunlight.

**Source:** *Appropriate Technology* Vol 27, No 4, Oct/Dec 2000



# Books & PUBLICATIONS



## Booklet on management of bleached coral reefs

*by Susie Westmacott, Kristian Teleki, Sue Wells and Jordan West*

Since the 1980s, the phenomenon of coral bleaching has become more frequent, widespread and severe. Global climate change appears to be the main cause. Long periods of unusually warm sea temperatures in 1998 led to wide-scale bleaching of coral reefs in the Indian Ocean, the Pacific Ocean and the Caribbean Sea. Bleached corals expel their symbiotic algae and become susceptible to disease and overgrowth by other kinds of algae. In the Seychelles Islands in the western Indian Ocean, coral reefs were particularly hard hit by bleaching, and more than 90 per cent of corals died.

Climate change and other human impacts are destroying the coral reefs of the world. Scientists estimate that one quarter of the coral reefs have already been destroyed, and that a third of the remaining reefs are severely threatened. Urgent measures are needed to protect remaining reefs.

The World Conservation Union (IUCN) has published a booklet, *Management of Bleached and Severely Damaged Reefs*, to provide guidance on how to protect and manage degraded coral reefs. The booklet is available in six languages (English, French, Spanish, Kiswahili, Indonesian and Portuguese) was produced in cooperation with the Secretariat of the Convention on Biological

Diversity, the World Wide Fund for Nature (WWF), and the US Agency for International Development (USAID).

The booklet can be ordered from:

IUCN Publication Services Unit  
219c Huntingdon Road  
Cambridge CB3 0DL, UK

Tel: +44-1223-277894,

Fax: +44-1223-277175,

E-mail: [info@books.iucn.org](mailto:info@books.iucn.org)

[www.iucn.org/2000/about/content/index.html](http://www.iucn.org/2000/about/content/index.html)

or from:

Sue Wells  
IUCN East African Regional Office  
PO Box 68200  
Nairobi, Kenya

Tel: +254-2-890605

Fax: +254-2-890615

E-mail: [smw@iucnearo.org](mailto:smw@iucnearo.org)

## Reefs at risk: a map-based indicator of threats to the world's coral reefs

by Dirk Bryant, Laretta Burke, John McManus, and Mark Spalding

This study is the first global assessment of coral reefs to map areas at risk from overfishing, coastal development, and other human activity. The study finds that nearly 60 percent of the earth's coral reefs are threatened by human activities — ranging from coastal development and overfishing to inland and marine pollution — leaving much of the world's marine biodiversity at risk. The report concludes that, while reefs provide billions of people and hundreds of countries with food, tourism revenue, coastal production, and new medications for increasingly drug-resistant diseases — worth about USD 375 billion each year — they are among the least monitored and protected natural habitats in the world. Produced by the World Resources Institute in collaboration with International Center for Living Aquatic Resources Management (ICLARM), the World Conservation Monitoring Centre (WCMC), and the United Nations Environment Programme (UNEP).

Key findings of the report include:

- Coral reefs of Southeast Asia, the most species-rich on earth, are the most threatened of any region. More than 80 percent are at risk, primarily from coastal development and fishing-related pressures.
- Most United States reefs are threatened. Almost all the reefs off the Florida coast are at risk from a range of factors, including runoff of fertilizers and pollutants from farms and coastal development. Close to half of Hawai'i's reefs are threatened, while virtually all of Puerto Rico's reefs are at risk.

- Nearly two-thirds of Caribbean reefs are in jeopardy. Most of the reefs on the Antilles chain, including the islands of Jamaica, Barbados, Dominica and other vacation favorites, are at high risk. Reefs off Jamaica, for example, have been ravaged as a result of overfishing and pollution. Many resemble graveyards, algae-covered and depleted of fish.

But the news is not all bad. The report also describes steps that can be taken to combat threats to coral reefs, and includes the stories of communities around the globe that have successfully addressed these challenges to their marine environment and way of life. *Reefs at Risk* concludes that the most important actions for promoting healthy coral reef ecosystems depend largely on these efforts by local governments, community groups, environmental organizations and the private sector. Many are win-win solutions: creating marine parks that, in turn, create new jobs; treating sewage before it reaches reefs (which benefits human health); and eliminating costly government subsidies. A well-managed marine protected area system is one of the most effective approaches for assuring healthy reefs, while generating tourism dollars and maintaining the vitality of nearby fisheries.

More information on the marine-related work of the World Resources Institute can be found at:

[www.wri.org/wri/oceans/index.html](http://www.wri.org/wri/oceans/index.html)



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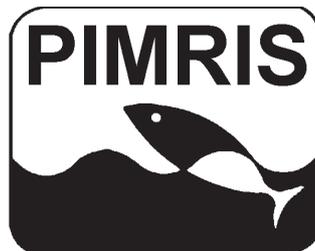
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PIMRIS is a joint project of five international organisations concerned with fisheries and marine resource development in the Pacific Islands region. The project is executed by the Secretariat of the Pacific Community (SPC), the South Pacific Forum 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.