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Fisheries Education and TRAINING

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INFORMATION BULLETIN

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Editorial

Welcome to the Fisheries Education and Training bulletin.

The previous issue covered new training opportunities in the area of fisheries resource management. This issue focuses on recent training developments in seafood safety and quality, a topic of direct interest to our readers from the fishing industry and the national Competent Authorities.

As usual, your bulletin is reporting on the activities of the Fisheries Training Section and various fisheries schools, colleges and institutes. An interesting addition is the list of contacts for training providers in SPC member countries and territories. We rely on you to keep this list up-to-date, and welcome your article for the next issue.

Bonne lecture!
Michel Blanc

Contents

FEATURES

Training in tuna handling, grading and seafood safety

In the absence of a dedicated Post-Harvest Fisheries Section, the SPC Coastal Fisheries Programme is committed to filling the region's training needs in the key area of seafood quality and safety. Similar efforts are being made, in parallel, and often collaboratively, by USP's Marine Studies Programme.

During the second semester of 2002, the Fisheries Training Section provided post-harvest training assistance to a number of member countries. Section staff were directly involved in the running of workshops on tuna handling (Cook Islands and Palau) and tuna grading (Samoa, Cook Islands and Palau), while seafood experts were contracted to provide seafood safety/HACCP training assistance in Fiji Islands, Palau, Solomon Islands and Cook Islands.

Vessel unloading in Rarotonga

- In Samoa, a tuna grading workshop followed an initial training in December 2000, when Albert Petersen, a professional grader from Fiji Islands, trained staff of local tuna export companies. High staff turnovers resulted in a request from the Samoa Fisheries Division for a second workshop, which was run by Section staff in July 2002. The workshop included a classroom session followed by practical grading demonstrations at the various export companies. The lecture was attended by 24 trainees from the main seafood exporters in Samoa (Apia Export Fish Packers, Tradewinds Fish Co., CJ Exports, Albacorp Fish Co., and Riverside Marine), as well as seven staff from the Samoa Fisheries Division. The follow-up, on-site grading sessions were attended by approximately 35 additional persons.

Wholesaler processing frozen tuna at Osaka Central Market

- In Cook Islands, three workshops were run back to back, in August. The first workshop targeted 12 outer islands trainees who attended a month-long training programme on tuna longlining conducted by SPC's Fisheries Development Officer, William Sokimi. The tuna handling workshop was the first component of this training and was aimed at making these prospective crew members proficient in tuna handling. The workshop had a positive impact on trainees, because William later reported that trainees demonstrated excellent handling practices during longline trips. The second workshop included tuna grading as well as tuna handling. It was attended by 10 representatives from existing and prospective fish export companies (Latitude 22 Fisheries Ltd, Taio Shipping, Cooper's, Brent Fisher's and Brett Porter's). Grading practicals at Latitude 22 followed the morning classroom session. A third workshop on tuna handling was attended by nine local fishers interested in targeting large tunas around FADS, and using fish export companies to sell their catch on the lucrative overseas sashimi markets.

- SPC's Fisheries Training Adviser was in Palau in October conducting workshops that were part of a longer tuna longlining training programme implemented by the Fisheries Development Section. Two, one-day workshops were run, the first one on tuna handling (14 trainees from various states and some tourist operators), and the second on tuna grading for 10 trainees from various companies and government departments.

- A grant from Taiwan/ROC (USD 25,000) funded the organisation of several in-country USFDA/ HACCP courses. Palau was the first country to receive assistance in August through the visit by a seafood specialist from New Zealand (Francisco Blaha). The course, based on the US AFDO/ Seafood Alliance curriculum, was attended by six

local seafood processors, four staff from the Department of Public Health and two staff from the Bureau of Marine Resources. The course in Fiji Islands was jointly organised by the SPC's Training Section and USP's Marine Studies Programme. A consultant to SPC, Cushla Hogarth from New Zealand, and Tony Chamberlain (USP) taught HACCP principles to 30 members of the local fishing industry and two staff from Fiji Fisheries Division. In September, another seafood expert, Nigel Harris, travelled to Solomon Islands to run two HACCP courses, one in Honiara for 28 participants from the local industry and the other in Noro (Western Province) for 10 staff of the cannery owned by Soltai Fishing and Processing Co. In November, Charles Daxboeck, a Canadian expert based in Tahiti, conducted one HACCP course in Rarotonga. Participants included staff from various fish export companies, the Health Department and the Ministry of Marine Resources. As a follow-up to the course, Charles has provided advisory services to several exporters and reviewed the proposed Cook Islands HACCP legislation.

In 2003, the Section will continue to be active in the area of seafood quality and safety. A number of requests for training assistance have been received, which should result in a series of in-country workshops. In December 2002, a funding proposal was submitted to Taiwan/ROC. If approved, more expert assistance will be provided to seafood companies and national Competent Authorities in the region. This will complement the work carried out by USP under EU- and FAO-funded programmes.

[All photos taken by Michel Blanc]

Grading and packing yellowfin and bigeye tuna at Apia Export Fish Packers (Samoa).

Cleaning albacore tuna before freezing at Tradewinds Fish Co. (Samoa)

End-of-workshop tuna-testing sessions in the Cooks (left) and Palau (right)

FEATURES

USP Post Harvest Fisheries Activities

Pacific Island exports of fisheries products to major markets such as the United States and the European Union continue to increase. It is critical that national food safety management systems encompass the requirements of Hazard Analysis and Critical Control Points (HACCP) for fishery products. However, recent audits in some Pacific Island countries by European fish inspectors and US Association of Food and Drug Officials (AFDO) Inspectors indicate there is still work to be done to meet international requirements. The University of the South Pacific (USP) — under mandate to provide cost-effective, sustainable training and education at all levels to the region — and endorsement from Heads of Fisheries (HOF) Meetings and CROP Marine Sector Working Group Meetings is making steps to provide regional training for industry and government:

- 26-30 August 2002. A USP/SPC HACCP workshop based on the US AFDO/Seafood Alliance curriculum was conducted for Fiji at USP's Marine Studies Center by Tony Chamberlain and Cushla Hogarth for 30 participants from fish exporting businesses, 2 from Fiji's Fisheries Division and 5 from regional organisations. The workshops also assisted in updating fish exporter HACCP plans.
- Various External Food Safety Audits have been conducted on fish and food factories in Fiji Islands by Tony Chamberlain (registered *QSA*).
- 11-15 November 2002. Tony Chamberlain was engaged as a Temporary World Health Organization (WHO) Adviser at the WHO/FAO/SPC Pacific Islands Food Safety and Quality Consultation. One of the recommendations of this consultation was to support training, education, social marketing and advocacy strategies that enhance food safety and quality.
- 15 November 2002. USP's Marine Studies Center achieved Center and Training Registration with the Royal Institute of Public Health (*RIPH Center Number 1955*) for the following internationally recognised RIPH courses:
  1 Foundation Certificate in Food Hygiene and Safety
  2 Intermediate Certificate in Food Hygiene and Safety
  3 Intermediate Certificate in Applied HACCP Principles
  4 Advanced Diploma in Food Hygiene and Safety
  5 Advanced Diploma in Applied HACCP Principles

It is anticipated that USP will commence some of these programmes in June 2003.

- 2-6 December 2002. A USP/HACCP workshop based on the US AFDO/Seafood Alliance curriculum was conducted for Fiji Islands and Tonga at USP's Marine Studies Center by Tony Chamberlain and Gabriel Victor Titili for 21 participants from fish and food industries, health inspectors, Fiji School of Medicine, and staff from the Colonial War Memorial Hospital.
- Over the next two years Tony Chamberlain will work part time on an FAO project on HACCP-based fish inspection systems in the South Pacific (Fiji Islands, Tonga, Palau and Marshall Islands). The first output of this project will be a three-week, sub-regional workshop at USP's Marine Studies Centre for fish/food inspectors. This will be followed with four national workshops and various other activities such as legislation strengthening, and food safety legislation for fishery products.
- USP's Marine Studies Center is actively seeking involvement to carry out training for the EU project, "Strengthening fishery products health conditions in ACP/OCT countries". This five-year programme began in December 2002, and aims to develop sustainable legal, institutional, resource and financial structures for inspection and control of the health conditions for the fishery sector.

At the community level, the USP/Canada-South Pacific Ocean Development Program (C-SPODP) Post Harvest Fisheries Development Project was completed in January 2003, although there have been two major self-funded spin-off activities:

- Four sea plant utilisation workshops have been conducted at USP's Marine Studies Center and various Fijian villages under funding from Canada, UNDP and ECOWOMEN.
- The International Ocean Institute (IOI) and FAO are funding a two-year programme for the Ministries of education in Fiji Islands, Tuvalu and Kiribati to provide seafood school books developed under USP–CSPODP Post Harvest Fisheries Development Project and training. This project began in January 2003 with a sub-regional workshop for 200 school teachers at USP's Marine Studies Center.

FEATURES

Certificate in Seafood Technology - March 2003

Looking for a career in the seafood industry?

The Certificate in Seafood Technology course for 2003 will run from on Monday, 3 March through 27 June.

The Certificate in Seafood Technology is an introductory programme designed to provide you with a solid background for entry into the seafood industry, either in a sea-going role or in a shore-based processing plant. You will learn basic sea safety skills, processing technology, and seafood science, which have with a deliberately broad focus. The programme provides core skills for entry into one of a number of industry sectors, including catching, processing, retailing and aquaculture.

This programme has been designed in conjunction with representatives of all the major industry sectors and provides a good opportunity for students to gain full-time work. You will have the opportunity to apply the practical skills you learned during the four weeks of work experience in your chosen industry sector.

Much of the programme content is unit standard-based and builds toward the National Certificate L2 Processing or the National Certificate L2 Seafood Vessel Operations. Where students can gain appropriate practical skills during their work placement they may achieve one or other of these qualifications.

The Treaty of Waitangi Fisheries Commission offers a number of scholarships to support students taking the course. If you think you are eligible, contact Lisa Rakuraku at the Commission at (04) 499 5199.

For more information on the Certificate in Seafood Technology course, contact:

Neil Wilson
New Zealand School of Fisheries
Tel : 03 546 2477
Fax : 03 546 2456
Or write to

Course Coordinator
Certificate in Seafood Technology
New Zealand School of Fisheries
Nelson Marlborough Institute of Technology
Private bag 19, Nelson, New Zealand

Food Science Australia - Approved course for thermal processing of low-acid foods

This course, approved by the Australian Quarantine and Inspection Service (AQIS), will provide participants with the necessary skills to design a safe and commercially viable thermal schedule for the processing of low-acid food products in hermetically sealed packaging.

The course involves four days of lectures on thermal processing, practical heat penetration work, process calculations, tutorials and preparation for exams. Two examinations will be given on the fifth day, which will cover theory and practical thermal calculations. Participants who successfully pass the examination will be authorised to submit new thermal process schedules for approval by AQIS.

Course contents:

Module 1: Microbiology of cannery operations
Module 2: Thermal processing concepts
Module 3: Heat resistance of microorganisms
Module 4: The Trapezoidal integration method
Module 5: Mathematics of heat transfer
Module 6: The Gillespy method
Module 7: Calculations for non-scheduled processes
Module 8: Retorting and over-pressure
Module 9: Packaging systems for heat processed foods
Module 10: Hazard analysis for heat processed foods
Module 11: Options for minimally processed foods

For more information please contact:

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SPC FISHERIES TRAINING ACTIVITIES

Seaweed farming training workshop

Solomon Islanders will venture into seaweed farming following a first-ever training workshop in Gizo in November 2002.

Twenty-three trainers and provincial fisheries officers attended the workshop, which was facilitated by the Secretariat of the Pacific Community.

Synder Rini, Solomon Islands Minister for Planning, told participants that the workshop was designed to equip fisheries officers and trainers with skills in seaweed culture, and enable them to train others in this field.

"There are less opportunities to generate income, so most coastal communities are relying on inshore resources to generate income to meet basic needs such as paying school fees, buying clothes and other basic needs," he said.

Rini stated that the government recognises the importance of inshore resources and aquaculture both as a management tool and an alternative income source. "As a result, my government has a strong policy to promote aquaculture and encourages coastal communities' participation in aquaculture activities," the minister stated. Rini said that participants have an important task, training communities so they can participate in aquaculture activities. He said that the Pacific has a potential for aquaculture development, but observed that, "This development can only be achieved through cooperation with other organisations such as SPC and NGOs". He also stated that aquaculture development requires support from financial agents and institutions and of course from the government.

Rini observed that collaboration and mutual understanding were crucial if Solomon Islands is to be competitive with other countries, involved in aquaculture.

SPC's Aquaculture Adviser, Ben Ponia, said that seaweed farming is a high priority for SPC, which will continue to provide institutional support to Solomon Islands.

The workshop was funded by the European Union, and trainers included Ben Ponia and Rory Stewart, manager of the Rural Fishing Enterprise Project.

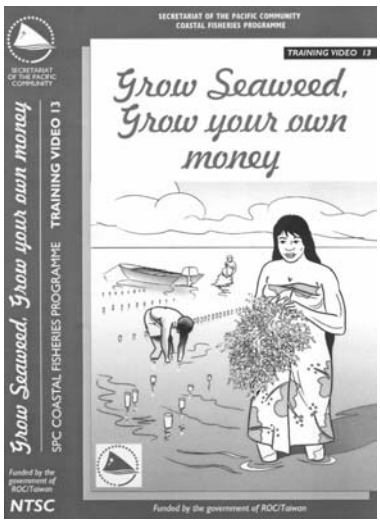
Resource personnel included Ledua Esaroma from Fiji Islands and Kamatie Kautu from Kiribati.

The workshop was officially opened in Honiara, with practical sessions held in near by Rarumana.

SPC's Fisheries Training Section launches new training video

The Fisheries Training Section has produced a new training video, entitled "Grow Seaweed, "Grow Your Own Money". Using the remaining funds from a Taiwan/ROC-funded aquaculture project, the Section hired a video production company in Kiribati (Nei Tabera Ni Kai video unit) to produce a video on seaweed farming.

The video uses a humorous style to promote seaweed farming as a new cash crop for fishers and farmers in rural coastal areas. The new video is now available for distribution. It will complement a more technical video being produced by USP.



SPC FISHERIES TRAINING ACTIVITIES

First national seaweed training workshop held in Solomon Islands 20–28 November 2002

Introduction

Seaweed farming requires low capital inputs and simple technology. It is a prospective cash crop for coastal rural communities and has proved to be a viable alternative to traditional export products, such as copra.

Given these attributes, the 1st SPC Aquaculture Meeting identified seaweed as one of the high priority commodities for the Pacific region. Solomon Islands is one of the countries that could potentially be a major producer of seaweed.

Seaweed farming developments in Solomon Islands
Seaweed farming trials in Solomon Islands began in 1989 through the British Overseas Development Agency (ODA). Experimental trials were established at Vona Vona lagoon and Rarumana village. The initial results were promising, with 10 metric tonnes produced. However, after the Coastal Biological Company ceased its operations in 1991 the project had to be terminated.

The seaweed (*Kappaphycus* species) is commonly known in the industry as eucheuma or cottoni. Farms are made up of lines strung between stakes in shallow reef areas, or on floating rafts and longlines in deeper lagoon areas. Seaweed cuttings are simply tied and left to grow until harvest six weeks later. Seedstock is obtained from a small portion of the harvest retained.

Unlike many of the region's fisheries products, the export market demand for seaweed is guaranteed. The carrageen from the sun-dried seaweed extract is utilised in a wide variety of food and pharmaceutical products. World production, mostly from Southeast Asia, is about 150,000 dry tonnes.

In the Pacific, seaweed farming is well established in Kiribati, with production around 1000 dry tonnes per annum, and has been re-established in Fiji Islands, with annual production peaking at 700 dry tonnes. Around 1500 rural households are engaged in farming, providing cash-in-the-hand to meet basic financial obligations such as school fees, church donations and communal activities.

In 1999 the Solomon Islands fisheries department began to revive interest in seaweed farming, but this was disrupted by the ethnic crisis. By 2002 the European Union funded Rural Fishing Enterprise Project (RFEP) became involved. The RFEP project manager, Rory Stewart, had previously worked with seaweed farming in Kiribati. The RFEP and the Solomons fisheries department established pilot farms in Langalanga, Malaita Province, and Rarumana, Gizo Province.

The successful establishment of trial farms in Langalanga and Rarumana caused widespread interest at local and national levels. SPC was approached to assist the Solomon Islands government with a national workshop that would provide the relevant training to extend seaweed farming to all provinces. The planning and logistics was coordinated through an organising committee comprising Mr Alex Meloty, fisheries department, Mr Rory Stewart, RFEP, and Mr Ben Ponia, SPC. Funding for the workshop was provided by SPC and RFEP.

Arrangements for the seaweed workshop

Mr Ledua Esaroma was the workshop trainer. He was one of the main proponents behind the rejuvenation of seaweed farming in Fiji Islands and is the agent for FMC BioPolymer, the sole buyer of seaweed in Fiji.

Mr Kamati Kautu from the Kiribati fisheries department was also recruited as a resource person for the workshop. Kamati has first-hand knowledge of the seaweed farming industry in the Kiribati through his duties as a seaweed extension officer.

The core trainees for the workshop were fisheries officers from the Solomon Islands national fisheries department and the provincial fisheries departments. Whilst most were novices in seaweed farming there were a few relatively experienced participants who had been involved in the recent phase of pilot farms or through training sponsored under the FAO SPADP program several years ago.

Ms Jane Bagita, an observer from the Milne Bay fisheries department in Papua New Guinea, was also invited. Papua New Guinea has a tremendous potential for seaweed farming and the Solomons workshop was a good opportunity for Jane to assess the applicability of seaweed farming for her country and perhaps champion its cause in the future.

Rarumana Island, where the fieldwork took place, is located about 40 minutes boat ride from the township of Gizo. Numerous plots of seaweed had been established in a back-reef area about two kilometres away from the village and covering an area stretching maybe a half kilometre. It was estimated that there were about 6000 lines in total. Since the activity had started (about four months earlier) the farms had harvested about 3.6 tonnes of dry product (about 30 tonnes wet weight). About 2 tonnes was produced by a single person. The enthusiasm of the village host as well the scenic setting of Rarumana lagoon was a great working environment.

Conclusion

By the end of the workshop the participants had been guided through all aspects of seaweed farming, including methods for site selection, farming materials selection, preparation of farming materials, setting up test plots, predator identification and control, harvesting and drying, moisture testing, storage, marketing, farm management, farm modelling and monitoring. A more detailed account of daily activities, extracted from Mr Esaroma's report, is appended.

This trip also assisted in formulating national targets for the industry. The aim is to produce 80 dry tonnes per month and the involvement of 500 families within a four-year time span. The current phase of expanding seaweed production will also lead to the first export of a container load, possibly within the next six months. FMC BioPolymer, one of the main buyers of seaweed, is negotiating with the Solomon Islands government to buy the seaweed at a set price until the country reaches a certain tonnage, after which the producers can bargain on prices.

The roles of SPC and the European Union RFEP were discussed during the post-workshop meetings, to ensure that follow-on support is provided. The two agencies have resources to provide much of the necessary technical and funding assistance for the initial growth stages until seaweed farming reaches a critical mass where private sector led development can be sustained. The European Union has committed funding for seaweed developments until December 2003. There are positive signals that after this it will fund a five-year project, similar to the assistance that was provided to establish the industry in Kiribati.

On a regional level, the seaweed development in Solomon Islands is an important step towards the regional target of at least 10,000 tonnes per annum. This quantity is required to justify a regional processing plant that will provide value adding opportunities to improve the profitability for farmers.

Daily schedule of activities

Day one (20/11/2002)

The Honourable Minister for Fisheries, Mr Nelson Kile, opened the workshop on 20 November 2002. The opening session was held at the Forum Fisheries Agency conference centre and attended by 38 fisheries officers. Mr Kile reminded the officers of the economic crisis faced by the country and the importance of promoting seaweed farming as an export commodity.

After the official opening, the trainer provided a brief overview of seaweed farming in the region and stressed to the participants the importance of hands-on and practical experience. The participants were told that 95 per cent of the workshop time would be devoted to fieldwork and practical training.

Day two (21/11/2002)

In the morning the participants flew to Gizo, Western Province, for the practical component of the workshop. The group was accorded a ceremony of welcome by the Deputy Premier of the Western Province government.

Day three (22/11/2002)

On the third day, we travelled by boat to Rarumana village for a field visit. In addition to the 27 fisheries officers, representatives from WWF, WorldFish Center and the Seventh-day Adventist Church travelled with us to Rarumana. Again the elders of Rarumana community accorded us a ceremony of welcome. There were 68 people from around Rarumana at the workshop.

Topics covered during the practical sessions were site selection, methods of farming, preparation of farming materials and the use of loops versus raffia. The participants returned to Gizo in the afternoon.

Day four (23/11/2002)

It was another boat trip in the morning to Rarumana. Participants were taught methods of line preparation,

SPC FISHERIES TRAINING ACTIVITIES

planting of seaweed, sizes of propagules, diseases, predators and farm management methodologies. This was another busy day, with 98 people attending the workshop.

Day five (24/11/2002)

Since Sunday was taboo day in Solomon Islands, the participants left Gizo and were taken by boat to Musatupa Atoll to watch the seaweed training videos. The Kiribati video was produced by SPC and the University of the South Pacific produced the Fiji video.

Day six (25/11/2002)

This was the last field day at Rarumana. The participants took part in setting up farms using new and old off-bottom methods. They also participated in drying seaweed and testing of moisture content. Participants looked at seaweed shrinkage during drying, transportation of planting materials and were taught methods of storing dry seaweeds. At 3:30 p.m. the Rarumana community put on a farewell ceremony, which was attended by 102 people.

Day seven (26/11/2002)

The participants traveled by plane back to Honiara for the wrap-up and closing.

Day eight (27/11/2002)

The participants went through farm modelling, economics, data recording, data analysis for management purposes and a wrap-up on technical issues. The SPC Aquaculture Adviser and the EC Resident Adviser were invited to give closing remarks before the Honourable Minister for National Planning and Development officially closed the workshop.

Day nine (28/11/2002)
Provincial officers returned to their respective bases.

Trainees get hands on experience by setting up a seaweed farm.

Samples of seaweed are examined for signs of predation and fungi.

Harvested seaweed is laid out on a rack for sun drying.

Dried seaweed is packed into rice bags for export overseas.

SPC FISHERIES TRAINING ACTIVITIES

IN BRIEF

- Ian Cartwright, ex-Forum Fisheries Agency Deputy Director and now a fisheries consultant based in Launceston, Tasmania, completed the external review of the SPC/ Nelson Polytechnic fisheries officers course. Since 1979, nearly 300 Pacific Island fisheries staff have attended the course. Ian held discussions with staff of both SPC Coastal Fisheries Programme staff and New Zealand School of Fisheries staff. Ian also visited Papua New Guinea, Solomon Islands, Fiji Islands, Tonga and Niue. Past trainees as well as fisheries administrations in other countries and territories were consulted through questionnaires. The review report will be tabled at the 2003Heads of Fisheries meeting, along with a revised course outline being developed by SPC. The new version of the Nelson course will be offered early in 2004, provided new funding is secured.

- A training video on tuna loining will be available for distribution early in 2003. The footage for the video was filmed during a workshop in Fiji in 1999. Since then the number of loining operations, mainly for albacore tunas, has increased following the success of Tahitian companies. This video provides a step-by-step demonstration of the "hanging technique", and should fill a training gap. It will be available in both French and English.

- A two-week organisational and financial management workshop will be run for the Palau Federation of Fishing Associations (PFFA) in February 2003 funded by New Zealand and SPC. An enterprise management specialist will travel to Koror to train PFFA board members, as well as managers of state cooperatives.

- In October 2002, two instructors from the Solomon Islands School of Fisheries and Maritime Studies travelled to Noro, in the Western Province, to train 170 pole-and-line vessel crew in safety-at-sea. This massive training programme, sponsored by SPC, took almost a month to complete and combined on-board and classroom trainng. A second training session was held in December 2002, which trained the remaining 200 crew from what is one of the largest fishing companies in the Pacific. On completion of the training participants received a Basic Sea Safety certificate, which is mandatory under Solomon Islands legislation.

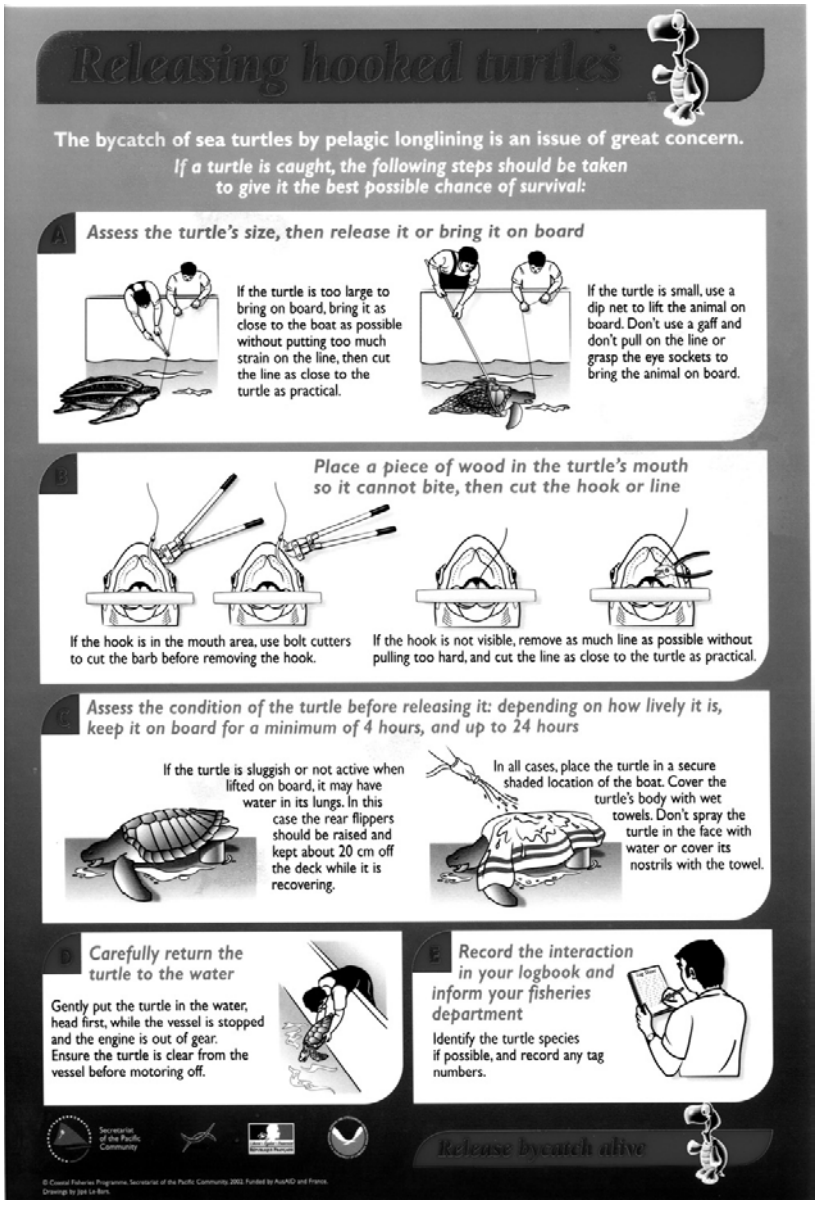
- Michael Quadina, skipper at the Nauru Fisheries and Marine Resources Authority and ex-SPC/Nelson course student, received a sponsorship from S¨PC's Training Section to sit the Class 6 Master/Engineer certificate in Fiji. With his ticket on hand, Michael will become skipper on Nauru's first super-alia, which was recently purchased from Samoa.

- At the time this issue went to press, the Training Section was about to secure funding from NZAID for a pilot programme targeting fishing vessel engineers. The five–week course will run from mid-2003 onwards and will cover fishing vessel specific engineering skills (e.g. refrigeration, hydraulic and electrical systems). No doubt this training will attract strong interest from Pacific Island fishing companies. A couple of seats will also be ear-marked, for capacity building purposes, to engineering instructors from the region. More on this training programme in the next issue of this bulletin.

- The Section is seeking funds from a regional donor for the continuation of the successful SPC/Australian Fisheries Academy Traineeship Programme for Pacific Island fishers (1999 and 2001). A proposal for the third commercial fishing skippers course has also been prepared and submitted.

- Training Section staff are finalising the development of new educational materials. Bycatch issues in pelagic longlining need to be tackled in a proactive manner, which requires training and raising awareness of longline vessel crew in the region. A series of turtle bycatch materials was released; in early 2003; including guidelines on how to release hooked turtles.The materials (which includes posters, laminated cards and stickers) will be sent to fisheries administrations and fishing companies, in both English and French speaking countries and territories. This will be followed by the production of some turtle identification cards, similar in format to the popular Live Reef Fish cards. Later in 2003, the bycatch aware-

ness workshop materials developed for use in Hawaii will be adapted to the western and central Pacific tuna longline fishery, and distributed to the region's fisheries training institutions.



Guidelines on releasing hooked turtles

AROUND THE TRAINING AND EDUCATION CENTRES

Pole-and-Line Fishing Vessel Sea Safety Training in Solomon Islands

STCW regulations are in place in Solomon Islands to cover fishing vessels and merchant ships. In order to comply with these, a basic sea safety training programme has been held at Soltai fishing and processing ltd in the Western Province, Solomon Islands. The training was conducted by lecturers of the Solomon Islands School of Marine and Fisheries Studies while SPC provided the necessary funding assistance to bring the lecturers from Honiara and purchase the safety equipment used during the courses.

One group of trainees during the Sea Safety Course at Soltai

This safety training programme was held in two stages in November and December 2002 and proved highly successful in the training of 363 crew who had previously received little or no maritime training and the majority of whom had a low level educational background.

The content of each course was based on the Basic Sea Safety Certificate developed by the Fisheries Training Section of SPC to meet the requirements of crews working onboard small-to-medium size vessels in Pacific Island countries and territories.

The course was practical in content and comprised three main modules:

1) Basic First Aid, which covered the fundamental principles of first aid and their practical application onboard a fishing vessel.

2) Sea Safety and Survival, which comprised group discussions, lectures and videos followed by practical demonstrations on how to deal with hypothermia, the correct use of safety equipment such as flares, EPIRBs, lifejackets, radios, the prevention of accidents, in-water survival, life raft drills, vessel abandonment techniques, coast guard procedures and other rescue services.

3) Fire Fighting, which was aimed at demonstrating the importance of having the correct fire fighting equipment onboard the company vessels.

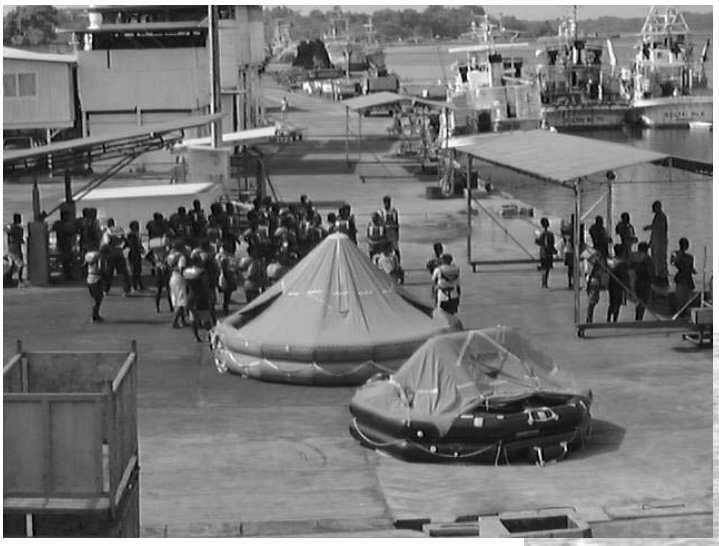
These modules proved highly successful in the practical training to a basic level, in an easily understandable format for crew members. The most encouraging aspect was the improved attitude to safety by crew members whose previous lack of knowledge was obviously a danger to themselves and others. The correct fire fighting equipment is now onboard vessels, lifejackets are no longer considered to be only useful as pillows, and flares not something to be stolen for use as fireworks on New Years Eve.

Soltai Fishing and Processing Ltd. operates a fleet of 12 pole–and–line fishing vessels catching skipjack and yellowfin tuna for processing in the cannery and arabushi factories at the companies shorebase in Noro, Western Province. The cannery supplies domestic and regional markets with high quality canned tuna whilethe arabushi is exported to Japanese markets. The company is 100% Solomon Islands owned and employs 99% of Solomon Islanders in the 800-strong workforce.

The company would like to extend its gratitude to the SPC Fisheries Training Section for their assistance in the essential area of sea safety.

AROUND THE TRAINING AND EDUCATION CENTRES

Jumping into the water with a life jacket



Life rafts used for demonstration purposes

AROUND THE TRAINING AND EDUCATION CENTRES

First trial for Class 6 Master/Engineer course in Yap

The Fisheries and Maritime Institute (FMI) has introduced the next stage of its training programme. Beginning 3 June 2002, the Class 6 Master/Engineer course was introduced, the highest grade offered thus far. Next year FMI will offer Class 5 Master and Class 5 Engineer courses, the next highest course in its programme.

This Class 6M/E course was opened on 3 June 2002 and will continue until mid–September. It is the first trial for FMI to deliver this course, and the first time for the instructors as well. Instructors at FMI have been upgraded by SPC's Regional Maritime Programme and are improving their teaching skills, on the job, with Japanese experts serving as mentors.

The Class 6 Master/Engineer course covers the following five subjects: 1) Nautical knowledge, 2) Engineering knowledge, 3) Basic Radar operation, 4) Radio telephony and 5) Advanced fishing techniques. Basic radar operation is divided into four parts: radar basics, display setup, radar plotting and collision avoidance. Radio telephony covers: Global Maritime Distress and Safety System (GMDSS), ship and coast stations, distress and urgency communication, digital selective cally (DSC), Emergency Position Indicating Radio Beacon (EPIRB), Search and Rescue Transporter (SART), radio telephony and marine radio communication equipment. Advanced fishing techniques consists of two parts: 1) the theory of fish behaviour, fishing gear, instrument, machinery, fisheries resources and financial management; and 2) practical fishing techniques on gillnet fishing, dipnet fishing and longline fishing. This module originated at FMI, and is four weeks long.

Eighteen students attended the course: 14 from Yap, 2 from Chuuk, and 2 from Kosrae; all completed the Restricted Class 6 or Watchkeeping Rating Deck/Engine course. After three and a half months of training, they will have the opportunity to go for sea service, in order to get the qualifications they need for licensing as Class 6 Masters/Engineers. This is the lowest license in the chain and is mainly for fisherman in the domestic trade, allowing the operation of a boat up to 24 meters within 200 nautical miles of the Federated States of Micronesia.

Postgraduate Training at the CRC Reef Research Centre

Education is an integral part of the activities of the Cooperative Research Centre for the Great Barrier Reef World Heritage Area (CRC Reef Research Centre) because many innovative research results arise through the activities of postgraduate students. Students undertake both basic research and applied research tasks that contribute to the strategic development of policy or industry practices.

The program's emphasis is on research training, through the provision of stipends and support for postgraduates. CRC Reef Research Centre currently supports more than 70 postgraduate students.

The Centre offers student scholarships for targeted research projects, grants, student research support, and opportunities to undertake additional training. For example, Centre postgraduates are offered training opportunities in leadership and career development, project management, media skills, conflict resolution and science writing in addition to their postgraduate research program.

Career development and workplace training

The CRC Reef Research Centre Education Program offers students many opportunities for career development, which can enhance their chances of obtaining employment. Workshops include Dealing with the Media, Career Development and Leadership, and Science Business Fusion.

CRC Reef Research Centre has also developed an Industry Placement Program for its postgraduate students. This program aims to improve linkages between research institutions and industry, and provides students with skills that will enhance their employability and encourage innovative thinking. The program assists students in arranging short-term (generally two months) paid or voluntary positions with private firms or government organisations.
The CRC Reef Research Centre offers many opportunities for students to become involved in the Centre manage-

ment. A number of Centre committees include student representatives, and serving on these committees allows students to gain an understanding of meeting and decision-making processes. Students are also invited to become involved in planning "student research day", which familiarises them with the organisational skills needed to run a successful conference.

Academic training

The CRC Reef Research Centre assists students in acquiring the academic skills necessary to complete their research degrees, by sponsoring placements in courses such as scientific writing, GIS and statistics. In addition, the Postgraduate Student Coordinator provides academic mentoring.

For general enquiries please contact info@crcreef.com

For technical enquiries please contact our webmaster@crcreef.com

Contact:
G. Robin South
Director, International Ocean Institute – Australia
PO Box 1539
Townsville
Queensland 4810
Australia
E-mail: robin.south@impac.org.au

New Zealand School of Fisheries Statutory Marine Certificate Courses for 2003

Enrolments and enquires

Be sure to enrol early, as the courses offered at the New Zealand School of Fisheries are subject to sufficient numbers of students. Complete details for attending the school and sitting for the Maritime Safety Authority examinations can be obtained from the school's office.

Applications to sit for the Maritime Safety Authority exams must reach the Principal Examiner for Masters and Mates at least 21 days before the beginning of the course. In order for your seatime to be checked and verified in sufficient time, it is advisable to submit your seatime to the Maritime Safety Authority before you attend any of our courses. Proof of seatime and other details should be sent to:
Maritime Safety Authority
PO Box 27-006
Wellington, New Zealand
Phone: +04 473 0111
Fax: +04 494 1263
Freephone number: 0508 22 55 22

Special note for DSS/DSM/NZOM/Marine Engineer Class 4 candidates regarding modular courses: these courses may now be taken in two or more parts. Please contact the school for details.

Local Launch Operator
3 weeks 3 days block. Seatime requirements: 6 months; minimum age: 18.

Course dates:
A 10.02.03 Exam Week 03.03.03
B 28.04.03 Exam Week 19.05.03
C 16.06.03 Exam Week 07.07.03
D 08.09.03 Exam Week 29.09.03
E 10.11.03 Exam Week 01.12.03

Inshore Launchmaster
3 weeks and 3 days block. Seatime requirement: 18 months, minimum age: 18. Course fees and dates are the same as for The Local Launch operator, as both courses are run together.
The Maritime Safety Authority also requires a course in Restricted Radar for this certificate. The fees for the course are quoted separately in this brochure.

New Zealand Offshore Watchkeeper (NZOW)
Nine week block. Seatime required: 2 years; minimum age: 18. Must hold either ADHF or ILM. Required ancillary certificates: RRTOC, First Aid, Restricted Radar, Basic Firefighting, Survival.
Course dates:
A 10.02.03 Exam Week: 07.04.03
B 08.09.03 Exam Week: 20.10.03

New Zealand Offshore Master (NZOM)
13 week block. Seatime requirements, 3 years; minimum age; 19. Must have 18 months qualifying seatime from date of issue of ILM (or equivalent). Must also have six months

AROUND THE TRAINING AND EDUCATION CENTRES

of watchkeeping. Required ancillary certificates: GRTOC, First Aid, Restricted Radar, Basic Firefighting, Survival.
Course dates:
A 10.02.03 Exam Week 05.05.03

New Zealand Coastal Master Upgrade (NZCM-NZOM)
4 week block. six months watchkeeping required while holding NZCM. Required ancillary: GRTOC and current First Aid (fees extra).
Course dates :
A 31.03.03 Exam Week 12.05.03

Mate Deep Sea Fishing Vessel
Seatime requirements: 12 months qualifying seatime while holding a NZOM/NZOW (or equivalent).
Course dates:
A 10.02.03 Exam Week A to be advised

Master Deep Sea Fishing Vessel
Seatime requirements: 12 months qualifying seatime while holding a Mate Deep Sea Fishing Vessel (or equivalent).
Course dates:
A 17.03.03 Exam Week A To be advised

Restricted Radar
1 week course. Seatime requirements: 12 months
Course dates:
A 10.03.03 Exam 14.03.03
B 17. 03.03 Exam 21.03.03
C 26.05.03 Exam 30.05.03
D 14.07.03 Exam 18.07.03
E 06.10;03 Exam 10.10.03
F 13.10.03 Exam 17.10. 03
G 08.12.03 Exam 12.12.03

Advanced Deckhand Fishing (ADF)
3 weeks plus 2 days, includes 2 day survival course
Seatime requirements: 12 months; minimum age: 16
Course dates:
A 10.02.03 Exam Week 24.02.03
B 28.04.03 Exam Week 12.05.03
C 11.08.03 Exam Week 25.08.03
D 20.10.03 Exam Week 03.11.03

Marine Engineer Class 6
1 wk course; minimum age: 18. Requirements: 2 years engineering seatime on commercial vessels, of which not less than 1 year on diesel engines.
Course dates:
A 10.02.03 Exam 17.02.03
B 28.04.03 Exam 05.05.03
C 16.06.03 Exam 23.06.03
D 08.09.03 Exam 15.09.03
E 10.11.03 Exam 17.11.03
First Aid (extra if required)

Marine Engineer Class 5
2 week course, plus exams. Please contact school for details.

Marine Engineer Class 3 and 4
Please contact school for details.

Basic Firefighting
1 week course
The course is held at the Nelson Fire Service Headquarters, St Vincent Street, Nelson.
Course dates:
A 27.01.03
B 03.03.03
C 03.05.03
D 25.07.03
E 04.11.03

Advanced Firefighting
1 week course held at the Nelson Fire Service Headquarters, St Vincent Street, Nelson.
Requirement: Must have completed Basic Firefighting Course.
Course dates:
A 13.01.03
B 14.03.03
C 30.06.03
D14.09.03
E 21.11.03
GMDSS

Outside enrolments limited.
Requirement: Must hold Restricted Radio Telephone Operator Certificate
Course dates:
A 17.02.03
B 07.04.03
C 07.07.03
E 04.08.03
F 15.09.03
G 10.11.03

Marine Engineering Short Courses
1. Marine hydraulics

2. Refrigeration for fishing vessels
3. Marine electrical systems
4. Programmable Logic Controllers (PLCs)

Duration 1-3 days – contact the school for further details

GRTOC is run separately as part of the NZOM.

Enquires and enrolments should be directed to:
NZ School of Fisheries, NMIT, Private Bag 19, Nelson
Phone: +03 546 2477
Fax: +03 546 2456
E-mail: fisheries@nmit.ac.nz

Seafood Training Australia – A career as a Fisheries Officer

Fisheries Officers, sometimes called Fisheries Compliance Officers, are responsible for the proper management, conservation and preservation of the fishing resources in each State/Territory of Australia, by ensuring they are not endangered or over-exploited.

The duties of Fisheries Officers vary greatly across the States. The type of work that they do often depends on the size and type of commercial fishing and aquaculture industries in their district. These officers may also serve as fisheries observers on naval patrol boats or they may be responsible for wildlife protection.

In some States, these officers are also responsible for enforcing the laws relating to boating in marine parks and protected zones.

What sort of tasks do they perform?

- Patrol and investigate waterways for unlawful fishing activities &/or the removal of protected marine life, and to enforce relevant laws and regulations
- Inspect fishing vessels, fishing gear and processing enterprises to ensure compliance ??Liaise with industry on fishing regulations and licence renewals
- Check that fish are sold through legal markets and that fish markets do not sell undersize fish
- Investigate and report on alleged breaches of legislation and provide evidence in court ??Promote & provide education on fisheries resource management programs & policies.

More senior fisheries officers, such as supervising or district fisheries officers and fisheries managers, will also be responsible for supervising and coaching other staff and representing their organisation at public and government events and activities.

Qualifications

Vocational qualifications in fisheries compliance are available from Certificate III to Diploma. The wide range of electives within each qualification means that every qualification can be designed to meet the particular needs and interests of employers and trainees.

Some states and territories may have traineeships in fisheries compliance. Formore details, contact Seafood Training Australia or your local Industry Training Advisory Body.

SEAFOOD TRAINING AUSTRALIA
PO BOX 533, CURTIN ACT 2605
TEL. 02 6281 0383
FX. 02 6281 0438
Ph: 1300 733 037




AROUND THE TRAINING AND EDUCATION CENTRES

National Training Calendar / First semester 2003

Training Provider	Course	Duration	Commencing
Vanuatu Maritime College	Safety Certificate Fee: Vt 8,000	2 weeks	13/01/2003 10/02/2003 10/03/2003 07/04/2003 05/05/2003 02/06/2003 30/06/2003
	Advanced Fire Fighting: Fee: Vt 5,000	4 days	24/02/2003 24/03/2003 21/04/2003
	Proficiency in Survival Craft: Fee: Vt 5,000	4 days	03/03/2003 31/03/2003 28/04/2003
	Deck Watch Rating: Fee: Vt 16,000	4 weeks	13/01/2003 03/03/2003
	Preparatory Skills: *No fee for students attending Masters and Engineers programs. Other Students Fee Vt. 8,000*	2 weeks	13/01/2003 17/03/2003 09/06/2003
	* Master <20GT: Fee: Vt 16,000	4 weeks	27/01/2003 23/06/2003
	* Master <200GT: Fee: Vt 40,000	10 weeks	31/03/2003
	Marine Radio Communications: Fee: Vt 3,200	4 days	24/02/2003 09/06/2003 21/07/2003
	* Engineer<75kW: Fee: Vt 16,000	4 weeks	27/01/2003 23/06/2003
	* Engineer<300kW: Fee: Vt 40,000	10 weeks	31/03/2003
	Overseas Ratings: Fee: Vt 56,000	16 weeks	03/02/2003 13/05/2003 18/08/2003
Solomon Islands College of Higher Education	Class 5 Master	17 weeks	24/02/2003
	Safety Certificate	3 weeks	03/02/2003
	Safety Certificate	3 weeks	28/04/2003
	Safety Certificate	7 weeks	09/06/2003
	Basic Maritime and Fisheries	21 weeks	24/03/2003
	Class 3 Engineer	22 weeks	03/02/2003
	Class 5 Engineer (M2)	12 weeks	03/02/2003
	Class 6 Restricted Master/Eng	8 weeks	05/05/2003
	Navigational Aids Program	3 weeks	10/02/2003
	Navigational Aids Program	3 weeks	09/06/2003

LIST OF MARITIME AND FISHERIES TRAINING INSTITUTIONS IN THE PACIFIC ISLANDS

There are 12 maritime and fisheries training institutions in the Pacific Islands, two of which have separate fisheries training schools. Any queries about training programs should be directed to the head of the school.

- FSM Fisheries & Maritime Institute
  PO Box 159
  Kolonia, Pohnpei
  Federated States of Micronesia
  Phone: + 691 3202480
  + 691 3202481
  Fax: +691 3202479
  http://www.comfsm.fm
  Matthias Ewarmai, Director:
  Phone: + 691 3505244,
  Fax : +691 3505245,
  E-mail: Matthiase@mail.fm
  Augusto Sanemai, Recruiting Officer

- Fiji Institute of Technology, School of Maritime Studies
  PO Box 3722
  Samabula, Suva
  FIJI
  Phone: +679 331-5115
  Fax: +679 331-5614
  E-mail: Tkevueli@fit.ac.fj
  Kevueli Tavainavesi, Head of School

- Ecole de Formation et d'Apprentissage Maritime
  BP 9014
  98715 Papeete
  Polynésie Française
  Phone: +689 439872
  Fax: +689 410716
  E-mail: efam-tahiti@mail.pf

- Maritime Training Centre
  PO Box 511
  Betio
  Tarawa
  Kiribati
  Phone: + 686 26152
  +686 26086
  Fax: +686 26561
  +686 26242
  E-mail: mtctrw@tskl.net.ki

- Fisheries Training Centre
  PO Box 295
  Bikenibeu
  Tarawa
  Kiribati
  Phone: +686 28507
  Fax: +686 28506
  +686 28713
  E-mail: FTC@TSKL.NET.KI
  Captain Kabureua, Principal

- Fisheries and Nautical Training Centre
  PO Box 860
  Majuro 96960
  Marshall Islands
  Phone: +692 6257449
  +692 6253262
  Fax: +692 6255447
  E-mail: rmifntc@ntamar.com
  Larry Muller, Principal, RMI Fisheries and Nautical Training Centre

- Ecole des Métiers de la Mer
  B.P. 36
  38 Avenue J. Cook
  Quai des pêches
  98845 Nouméa
  Nouvelle-Calédonie
  Phone: +687 287863
  Fax: +687 274754
  +687 272667
  E-mail: emm@offratel.nc
  Christian Blanchard, Directeur

- PNG Maritime College,
  P.O. Box 1040
  Madang
  Papua New Guinea
  Phone: +675 8522615
  Fax: +675 8523113
  E-mail: dharrod@global.net.pg
  David Harrod, Principal

LIST OF MARITIME AND FISHERIES TRAINING INSTITUTIONS IN THE PACIFIC ISLANDS

- National Fisheries College
  PO Box 239
  Kavieng
  New Ireland Kavieng
  Papua New Guinea
  Phone: +675 9842266
  +675 9842187
  Fax: 675 9842343
  John Kasu, Principal (NFC)
  Phone: +675 9841248
  E-mail: johnkasu@daltron.com.pg

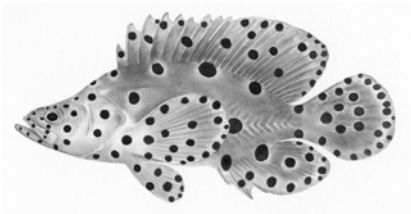
- Samoa Polytechnic
  School of Maritime Trainings
  c/o PO Box 861
  Vaivase
  Apia
  Samoa
  Phone: +685 21428 or +685 42840
  Fax: +685 25489 or +685 25092
  E-mail: sp@sampol.edu.ws
  www.sampol.edu.ws

- School of Marine and Fisheries Studies
  PO Box R113
  Honiara
  Solomon Islands
  Phone: +677 30686
  Fax: +677 30390
  Starling Daefa, Head of School

- Tonga Maritime Polytechnic Institute
  PO Box 485
  Nuku'alofa
  Tonga
  Phone: +676 22667
  +676 21009
  Fax: +676 24334
  E-mail: tist1uf@kalianet.to
  'Uhila-moe-langi Fasi, Principal

- Tuvalu Maritime Training Institute
  Amatuku
  Private Mail Bag
  Amatuku, Funafuti
  Tuvalu
  Phone: +688 20849
  Fax: +688 20855
  E-mail: tmti@tuvalu.tv

- Vanuatu Maritime College
  PO Box 20
  Luganville, Santo
  Vanuatu
  Phone : +678 36547
  Fax : +678 36154
  E-mail: martrain@vanuatu.com.vu



PIMRIS is a joint project of four 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's Pacific Information Centre (USP-PIC), and the South Pacific Applied Geoscience Commission (SOPAC). This bulletin is produced by SPC as part of its commitment to PIMRIS. The aim of PIMRIS is to improve the availability of information on marine resources to users in the region, so as to support their rational development and management. PIMRIS activities include: 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.

PIMRIS
Pacific Islands Marine Resources Information System