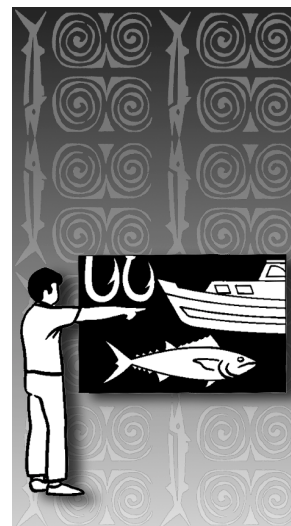




Secretariat of the Pacific Community

Fisheries Education and **TRAINING**

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

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NOTE FROM THE EDITOR

This new issue of our bulletin on Fisheries Education and Training is a mine of precious information for all of those fisheries people who have an interest in training issues.

In addition to the usual report on SPC Fisheries Training Section activities, the bulletin will provide readers with an update on the training offered at SEAFDEC, JICA, Tonga, Samoa, FSM, a report on the official launching of the Vanuatu Maritime College and training news from Fisheries Departments in Nauru, Samoa, Niue, and Vanuatu.

Commercial vessel operators will read with interest an article on the forthcoming introduction of Safety Management Systems in the region while fishing company managers will learn about a new training opportunity for their crew at the Australian Fisheries Academy in South Australia. An article on the co-management of Samoa tuna fishery may give some ideas to fisheries managers in our region.

Enjoy this bulletin!

Michel Blanc

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M a r i n e R e s o u r c e s D i v i s i o n – T r a i n i n g S e c t i o n



FEATURES



Tuna fishery co-management in Samoa: a model for the region?

*by Michel Blanc
Fisheries Training Adviser*

Since 1995, the offshore commercial fishery in Samoa has expanded rapidly due to the introduction of horizontal longline gear to capture large tunas for export, mainly to canneries in Pago Pago. Tuna catches have increased from 1700 tonnes in 1996 to 5100 tonnes in 1999. The industry employs over 1,000 people and is the major export earner of the country.

The rapid expansion of the offshore fishing industry has created many problems for both the private and public sectors. Thirty-three

lives were lost at sea from 1997 to 2000 due to lack of seamanship skills, lack of basic safety equipment and poor vessel construction. Considerable quantities of fish are still rejected due to poor onboard handling of the catch.

Mooring facilities in Apia are inadequate to deal with the considerable increase in the number of fishing vessels. Although the government had taken measures to address some of these problems including the setting-up of a VHF-radio communication network and the implementation of safety and manning requirements for fishing vessels, the industry has, until recently, had minimal involvement in the decision-making process. The responsibility of developing and managing the offshore fishing industry in a sustainable manner rests not only with government agencies but also with the various stakeholders involved in the industry. In acknowledging the diversity of stakeholders, Samoa initiated in October 1999 the development of a Commercial Fisheries Management Advisory Committee (CFMAC). This committee is comprised of elected representatives from the Upolu and Savaii fishers, boat builders and fish exporters as well as appointed representatives from the Fisheries Division,

Ministry of Transport, Treasury Department, Port Authority and Department of Trade, Commerce and Industry. Meetings are held every two months with special meetings organised to address particular and urgent issues.

CFMAC has been the main contact point for the private and public sectors to address development and management issues concerning the offshore fishing industry, provide advice, and present recommendations to the Samoan government for consideration.



Part of the alia fleet in Apia, Samoa

To date, the committee has dealt with a variety of issues including safety at sea, vessel crew training, seafood quality and regulations, shore infrastructures and resource management and sustainability. In general, the CFMAC is a forum where issues concerning offshore commercial fisheries are discussed, problems identified and possible solutions developed. In adopting this approach, Samoa is achieving greater awareness, acceptance and ownership of fisheries management arrangements through the committee's interaction between the various stakeholders.

After the management of inshore fisheries resources by its coastal communities, Samoa is again innovative, this time with its approach to the co-management of offshore resources. SPC's Training Section is keen to make the Samoan strategy known to the region and a manual describing the purpose and operations of the CFMAC will soon be produced in collaboration with the Samoa Fisheries Division. Depending on the region's feedback and the availability of funds, the Section is also considering the possibility of organising a regional workshop on the co-management of commercial fisheries resources.

AFA/SPC Traineeship Programme for Pacific Islands fishers

*by Grant Carnie
Principal Training & Development Consultant
Australian Fisheries Academy*

A joint venture training and work placement program, first conceived over a year ago between the Fisheries Training Section at SPC and the Australian Fisheries Academy (AFA), got underway in Australia in October 2000. Based on the very successful traineeship program run by AFA for young Australian fishing crew, the pilot program would provide the opportunity for six Pacific Island fishers to expand their knowledge and gain experience in the Australian fishing industry. The participants would undertake specific training at both AFA's Port Adelaide and Port Lincoln campuses before taking a position as a crew member on Australian fishing vessels involved in a similar fishery to the one they were involved with in their own country.

The trainees who came from Tonga, Papua New Guinea, Yap (Federated States of Micronesia) and the Solomon Islands, work in the tuna longline and purse seine fisheries and the PNG prawn fishery in their home countries. They arrived in Adelaide in early October during an unseasonably cold spell and after settling in to accommodation at the nearby Fort Largs Police Academy facilities, the first port of call was a clothes shop to purchase some warmer clothes.

The trainees spent two weeks at the Port Adelaide campus and undertook training in a range of skills including rope-work, wire-work, net construction, boat handling as well as completing their Marine Radio Operator's certificate through the regulatory controlling body, the Australian Communication Authority.

The program moved to AFA's Port Lincoln campus in mid-October, which is situated on the waterfront in the fishing boat harbour. Port Lincoln is one of Australia's largest fishing ports and certainly its most diverse. As well as being home to the lucrative southern bluefin tuna fleet and tuna farms, it has fleets operating in prawn, lobster, sardine, crab, fish trawl and marine scale fisheries. It also has an abalone fishery and a rapidly expanding aquaculture industry farming species such as oysters, mussels, scallops, yellowtail, kingfish and snapper.

The trainees stayed in waterfront apartments in the marina complex, which was a five-minutes walk from the campus. While the outlook might not quite have had the tranquility and beauty of their own islands, they all decided that life in a waterfront apartment wasn't a bad way to spend two weeks!

After an introductory tour of the local fishing fleets, seafood processing plants and aquaculture enterprises, the trainees began the second half of the off-the-job

training. AFA trainers presented an overview of fishing methods in Australia and particularly in similar fisheries as those they were involved with in their own countries, including fishing gear construction and an introduction to electronic fish finding. They then joined with the new group of Australian fishing trainees for the regulatory sea safety training, Elements of Ship-board Safety, and an introduction to seafood handling. The rapport between the two groups was excellent and the more experi-

enced Pacific Island trainees were able to help the new Australian trainees as they began their fishing careers.

The campus-based training ended on 2nd November with a joint graduation ceremony in Port Lincoln of the Pacific Island trainees and the previous year's Australian fishing trainees. After being presented with their certificates by the CEO of the Australian Fisheries Academy, Martin Payne, and Ms Liz Penfold, the local Member of Parliament, the trainees joined local skippers, crews, fishing company representatives and AFA staff in celebrating the completion of the first phase of the traineeship.

The following day, the trainees went separate ways, joining various fishing vessels in different parts of Australia. This included longlining tuna with the Great Barrier Reef Tuna Company out of Cairns in Northern Australia and with two private operators based in Ulladulla in New South Wales, prawn fishing on a state-of-the-art freezer trawler from Port Lincoln and purse seining skipjack tuna off the East Coast of Australia on board the FV *Maria Luisa*, owned by AFE Fisheries



William Tewaii from PNG receiving his graduation certificate from Martin Payne, CEO of the Australian Fisheries Academy

of Port Lincoln. The trainees remained with their designated vessels until their departure from Australia in late December, in time to be home with their families for Christmas. The pilot program was very successful, meeting and exceeding all expectations and hopefully laying the foundation for an ongoing partnership between SPC and AFA in the ongoing delivery of a similar traineeship. AusAID is in the process of examining a proposal for the continuation of the program, and all involved are hopeful future funding will be approved.

The success of the program can be attributed to all involved including staff from SPC and the Australian Fisheries Academy as well as host employers but most importantly to the Pacific Islanders who undertook the traineeship. Their enthusiasm, commitment and desire to learn new skills was a credit to themselves, their employers and their country but most importantly they were great fun to be with and they will long be remembered by all who came into contact with them.



Practicing navigation skills at AFA's Port Adelaide campus



Junior Delaiverata from Solomon Islands at the helm practicing boat handling skills



Ignatius Falmed from Yap, Kami Hulape from PNG and William Tewaii from PNG demonstrating boat handling skills in Port Adelaide



Trainees in the classroom at AFA's Port Adelaide campus with Hagen Stehr, Chairman of AFA and prominent Australian fishing identity

A New approach to vessel and crew safety – The Safety Management Systems

*by Michel Blanc
Fisheries Training Adviser*

A Safety Management System (SMS) is an active and documented process aimed at reducing the risk of accidents for the crew, the ship and the marine environment while increasing the profitability and quality of the shipping (fishing) operation. An SMS includes a series of written procedures and records (contained in the ship's Safety Management Manual) and regular inspections or audits by the authority monitoring the system. Worldwide, SMSs are replacing the 'old annual survey system'. The introduction of SMS in the Pacific was the theme of a regional workshop held in Nadi on 29–30 March, and coordinated by staff of the Fisheries Training Section. The International Safety Management (ISM) Code of the International Maritime Organization (IMO) requires, for countries that are parties to the SOLAS Convention, that all cargo and passenger vessels of more than 500 GT adopt an SMS. The deadline set by the IMO for countries to include the ISM Code in their legislation and for shipping companies to introduce SMSs on their vessels is 1 July 2002. While non-convention vessels (cargo and passenger vessels of less than 500 GT and fishing vessels) are not required to have an SMS, many countries are making those systems mandatory for all vessel classes. In New Zealand, for instance, all commercial vessels, irrespective of their size, are required to have an SMS. Vessels under 500 GT use a Safe Ship Management System (SSMS). This system is monitored by private companies, is quite detailed, and is very similar to the SMS required for SOLAS vessels. Commercial vessels under 6 m have a Safe Operational Plan, a scaled-down version of the SSMS (less complex) which is monitored by 'authorised persons' accredited by the New Zealand Maritime Safety Authority. So far, those systems are working very well in New Zealand and companies are happy with the increased safety (fewer injuries and accidents) and profitability, despite the costs of the system, of shipping/fishing operations. Having such systems in place also makes it easier and cheaper for companies to insure their vessels.

The Nadi workshop on SMS was part of the 6th regional maritime meeting organised by the SPC Maritime Programme. Its purpose was twofold. Firstly, it provided representatives of regional maritime authorities and training institutions with an explanation of the ISM Code and how it should be implemented. Secondly, the workshop considered a range of SMSs that may be appropriate for non-convention vessels in the Pacific. Guest speakers from the New Zealand School of Fisheries, the New Zealand Maritime Safety Authority and the Cook Islands Ports Authority talked about their experience of SMS and presented the different systems used in their country. While the implementation process for the ISM is well documented and seems straightforward, there is total flexibility concerning

non-convention vessels. Some countries may wish to make SMSs mandatory for all or certain classes of vessels (in which case a range of options exist for the type of system they can use); in other countries which are not interested in this approach individual companies may decide to use a SMS voluntarily.

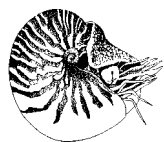
After the workshop presentations by guest speakers, group discussions took place to assess the relevancy of SMSs in the Pacific. Interestingly, the three local ship owners that had been invited to the workshop pushed strongly for the introduction of SMSs in the region. The results of group discussions were combined in a series of resolutions as follows:

'That SPC develops:

- a generic SMS legislation for non-convention vessels for those countries that require it
- an information package on SMS for crew, companies and maritime authorities
- generic Safety Management Manuals, possibly in the form of software
- a training package for maritime training institutions.'

Participants agreed on another series of resolutions for SPC to assist with the implementation (mandatory for SOLAS vessels) of the ISM Code in the region. The Nadi workshop seems to have achieved its objectives. Participants are now well aware of the ISM Code and how to implement it by July next year. They also took home lots of reference materials describing a range of SMSs for non-convention vessels, including a very simple checklist system used in the Cook Islands and a model Safe Operational Plan developed by the Section for outboard-powered commercial vessels. The workshop resolutions will result in a collaborative effort from the SPC Maritime and Fisheries Programmes to prepare the ground for the introduction of SMS, with the ultimate goal of increasing the safety of maritime and fishing operations in the Pacific region.

At the time of writing this article, correspondence between the SPC Regional Maritime Programme (RMP) and the Fisheries Training Section (FTS) was taking place to decide "who will do what". FTS position is that RMP should focus on the ISM resolutions while FTS should have a leading role in the followup to the SSM resolutions. Because of the Training Section's previous involvement and experience in the promotion of vessel safety, our network of fishing vessel companies, and the fact that most non-convention ships in the region are fishing vessels, I believe the Section can respond efficiently to the meeting resolutions, in close collaboration with RMP.



NEWS FROM THE FISHERIES DEPARTMENTS



Tuna grading in Samoa

*by Michel Blanc
Fisheries Training Adviser
SPC, Noumea*

An analysis of the tuna industry training needs was recently carried out by the Samoa Fisheries Division. Among the priority needs identified by the survey was tuna grading skills for the local fish export companies.

While albacore tunas comprise the majority of catches and are exported frozen to the two canneries in American Samoa, the local fish exporters are starting to export fresh chilled tunas to Hawaii and mainland USA. Yellowfin and bigeye tunas need to be carefully graded before being packed for export to sashimi markets in Japan, US or Australia. Grading an albacore for export to Pago Pago is very simple. Freshness is the key parameter and all fish carefully chilled after landing and brought to the exporter within a maximum of two weeks will be suitable for the canning process.

Many more parameters are taken into account when deciding if a yellowfin or bigeye tuna should be sent to a sashimi market overseas. The grader should consider the meat colour, oil content, presence of burnt meat, body shape, size, freshness, external appearance, and presence of disease or parasites. But this is not all, other factors such as the market situation and the production of competitors, are taken into account, making a good communication between the grader, the company manager and the overseas buyers essential. In other words, it will take many years of practice for a green grader to become an expert.

Last November, the Samoa Fisheries Division decided to call upon the services of the Training Section to address the needs of local exporters. Section staff have acquired wide experience in running tuna handling workshops in the region but they had never conducted an in-country workshop specifically targeting tuna graders. It was thus decided to hire the services of a professional grader and after unsuccessful attempts in Japan and Hawaii, we contacted the most experienced tuna grader in Fiji Islands, Mr Albert Petersen from Great Pacific Seafood. Luckily, Albert was keen to take part in this training venture and his boss agreed to release him for the duration of the workshop in Apia. During his fifteen years of employment within the Fiji tuna industry – mostly with Fiji Fish Ltd – Albert graded hundreds of thousands of tunas, if not

millions... The Training Section could not find a better resource person for the Samoa workshop!

The workshop was conducted on Tuesday 12 and Wednesday 13 December. Its content combined classroom sessions at the Fisheries Division with practical grading demonstrations at the processing plants of the four Apia-based tuna exporters. Classroom sessions included a slide show to explain the different grading parameters, the sashimi concept and tuna marketing in Japan. Sessions covering on-board handling practices were also included to provide fish exporters with a clear understanding of how the local fishers should be treating their catch from landing to unloading.

Despite several workshops on tuna handling, most local fishers still do not carry sufficient ice to properly chill their catch, and because the alia catamarans are now doing two-day trips – instead of one-day trips in the early years of the fishery – the issue of fish quality and the problem of rejects by Pago canneries is re-surfacing in Samoa. Despite improvements in 1999 – rejects from the two canneries in American Samoa were reduced from 190 tons in 1998 to 53 tons in 1999 – 94 tons of albacore tuna were rejected in Pago Pago, from January to September 2000. Fisheries Division has decided to tackle this problem of quality through training – a 3-week HACCP for tuna exporters was run in June 2000 – and legislation. A National Seafood Safety Monitoring Program will be initiated in 2001 and this will include the development of national seafood safety standards for the tuna fishing industry.

During the practical sessions, Albert was able to grade a wide range of tunas at each of the four fish exporters – CJ Exports, Albacorp, Tradewinds and Apia Export Fish Packers. Participants were told that the best way to evaluate the colour of tunas was by comparing meat samples – tail cuts – of several fish, placed on white board and observed under natural sunlight (neon light alters colours). At Albacorp, a company that exports small amounts of chilled albacore tunas to the US market, Albert explained that grading those fish does not require a tail cut, as colour and oil content are fairly homogeneous in albacore tunas. The key parameters are the fish's freshness (Japanese buyers require the gills and



Albert Petersen, a professional tuna grader with 15 years of work experience in Fiji Islands



This chunk of tuna will not be exported. It will be used for a sashimi-tasting session

guts to be left inside the tuna so that its freshness can be quickly assessed), its firmness and external appearance.

The best tunas were graded at CJ Exports, apparently the most discriminating company with respect to fish quality purchased from local fishers. There, only one, fat bigeye tuna was seen, a fish suitable for the demanding Japanese market, and several good-colour yellowfin tunas were graded by Albert as suitable for both the Japanese and US markets. Overall, despite natural conditions that do not contribute to the catching of premium-grade fish - warm waters equals low fat content - Samoan waters are home to yellowfin and bigeye tunas suitable for export to Hawaii and the US mainland. However, on-board handling procedures need to be improved to make those exports economically profitable. Local fishers, whether working on alia catamarans or larger longliners, need to apply the skills demonstrated during numerous workshops run by SPC and the Fisheries Division. Spiking of the tuna's brain, if done properly, and if combined with the *tanaguchi* method, will stop all bio-chemical reactions inside the fish and thus preserve the fish's freshness and improve the colour of its meat. Bleeding is equally important and should be done immediately after killing the fish, either with the side cuts or by slitting the membrane between the gill collar and the gill cover. Bleeding will result in a faster chilling of the fish - unlike other species, tunas are warm-blooded animals - it will assist with

the ridding of blood-conveyed toxins such as the lactic acid responsible for the burnt meat or yake and importantly will improve the meat colour and appearance. Thirdly, the tuna should be chilled in ice or refrigerated seawater as soon as the previous two procedures are applied. The bigger the tuna, the longer it will take to drop the core temperature close to 0°C - not less than 24 hours for a 80 kg tuna placed in an ice slurry! A rapid and complete chilling will preserve the fish's freshness and will reduce the risk of yake.

A total of 14 persons attended this grading workshop, including five staff of fish export companies, five fishermen, two Fisheries staff, one staff of the Samoan Quarantine and one young Fijian grader whose company - TriPacific Marine Ltd - sponsored to attend this training.

After the workshop was completed on Wednesday 12, Albert re-visited each company to grade more fish and give additional information to the local graders. The managers of these companies were pleased with the workshop content and while acknowledging that this training has given their staff the basic skills to confidently start grading tunas for export, they quickly requested the Fisheries Division to organise a tuna loining workshop early in 2001. It is likely this request will soon be transmitted to the Training Section, which will seek the services of a professional filleter as was done in July 1999 for a workshop at Celtrock Holdings in Fiji.



Albert showing how to take a fish sample near the tail of the tuna



Tuna flesh samples can also be taken using a coring tool



*Checking the temperature of a nice bigeye tuna
at CJ Exports*



The best grading method: comparing samples on a white surface

“Don’t increase the risk, stay sober at sea.”

Niue is keen to protect its fishermen from the danger of drinking alcohol while at sea. Niue Fisheries Department asked SPC Fisheries Training Section’s help to produce a poster showing what happens to fishermen who go fishing after a drinking party. This cartoon poster adds to the resource materials produced by the Training Section, aimed

at reducing the number of small-boat accidents in the region. The poster has been printed in both English and Niuean languages. SPC Fisheries Training Section can assist other countries to promote safety at sea. For more information, please contact SPC Fisheries Training Adviser at michelbl@spc.int.



Training plans in Nauru

Currently there is no fisheries training institution in Nauru but the Nauru Fisheries and Marine Resources Authority (NFMRA) is very keen to establish one in the near future.

Meanwhile, the NFMRA endeavours to be consistent in sending its staff to training programmes relevant to their duties. Presently, five NFMRA personnel are undertaking studies:

- Mr Hudson Agadio at the Nelson Marlborough Institute of Technology
- Mr Terry Amram at the University of the South Pacific

- Mr Charleston Deiye at the University of the South Pacific
- Mr Camalus Reiyetsi at the Overseas Fishery Cooperation Foundation (OFCF)
- Mr Ken Blake at the OFCF

The NFMRA has also identified training needs in areas such as aquaculture, navigation, safety and engineering. It intends to address those needs through staff training attachments in Fiji Islands, the Philippines, the Australian Maritime College or the New Zealand School of Fisheries.

Source: Mrs Chitra Jeremiah, NFMRA

Information materials available for Vanuatu

The Vanuatu Department of Fisheries is producing a series of colour fact sheets (A4 size) called *Vanua-ika*. Initiated by Graham Nimoho, Principal Fisheries Extension Officer, and Terii Luciani, SPC Fisheries Training Specialist, the fact sheets cover topics on resource management, bottom fishing techniques, aquaculture, current research findings, fish identification, and the Fisheries Division. Each fact sheet is written in plain, easy-to-read English (some will be pro-

duced in Bislama) and has illustrations and diagrams. Sources for more information are also provided.

During his short attachment with the SPC Information Section and Training Section Graham assumed responsibility for all aspect of the production of two fact sheets.

For more information about the *Vanua-ika* fact sheets email: spc@spc.int



SPC FISHERIES TRAINING ACTIVITIES



Second regional course on Seafood Enterprise Operations and Management for Pacific Island Women in Nelson.

The 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

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 needs 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. 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.





Elvine Lehartel from Tahiti attended the second regional course for women managers in New Zealand



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

Two women on the SPC Nelson course

The 22nd SPC Nelson course welcomes the participation of two women in the region's most popular fisheries training program. 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. This year a French speaking trainee from Wallis and Futuna will be attending the course. He will be in New Zealand five weeks earlier prior to the course commencement to attend an intensive English programme. This regional course is funded by the New Zealand government, the Commonwealth Secretariat and the Commonwealth Foundation.

IN BRIEF

- James Uan, Fisheries Training Officer at the Kiribati Fisheries Division, will be attached to the SPC Fisheries Training Section from June to August this year. During his time at SPC, James will be exposed to the work programme of the Coastal Fisheries Programme and will take an active role in implementing of the practical fishing module of the 2001 SPC/Nelson course. James will work with staff of the CFP to develop a training strategy and the resource materials for upgrading the scientific skills of fisheries extension officers in Kiribati.
- A boat-building project in Santo, Vanuatu, will be coordinated by the Section in May. This project, funded by France, will consist in the attachment of the boat-building instructor of the New Caledonia School of Fisheries to the Santo boatyard for a period of two weeks. The New Caledonian instructor will apply the West System building technique to the construction of a 5.7 metre fishing vessel. The purpose of the project is to train staff of the Santo boatyard in the West System technique, increase the range of vessels available to the small-scale fishing sector in Vanuatu, and provide the Vanuatu Maritime College with an additional training vessel.
- A pearl-oyster farming training attachment for two PNG aquaculturists from Kavieng to the Cook Islands was scheduled in May. The attachment has been postponed to a later date.
- Two skippers from Alatini Fisheries in Tonga have been sponsored by the Section to attend a Class 5 Master course at the Australian Fisheries Academy in Adelaide. The two trainees successfully sat the end-of-course exams after five weeks of hectic studies.
- The SPC Regional Media Center in Suva is producing a video on loining albacore tunas. The footage was taken during a workshop at the fishing company Celtrock Holdings at Suva in July 1999. Staff of RMC will finalise the video script and edit the footage for the 13th 'SPC Fisheries Training' video.
- A two week study tour of New Zealand fisheries institutions is being organised by the Section and the New Zealand School of Fisheries. This pilot project, funded by NZODA, will enable six Pacific Island fisheries managers to observe New Zealand's approach to fisheries management. Of particular interest is the interaction between the NZ Ministry of Fisheries and the fishing industry, and the development of co-management models.



AROUND THE TRAINING AND EDUCATION CENTRES



SEAFDEC Training Department — Programme for 2001

Introduction

The Training Department is committed to upholding its service to sustainable marine capture fisheries and coastal fisheries management for member countries and the environment through the precepts of human resource development, research, information and extension and the promotion of responsible fishing operations. Based upon the framework of the SEAFDEC strategic Plan the programs are oriented toward national needs and international requirements that affect the region.

Responsible Fishing Promotion

Program Duration: January – December 2001

Program Objectives:

1. To promote the implementation of the CCRF and Regional Guidelines for Responsible Fishing Operations in Southeast Asia.
2. To conduct research and development studies to generate and provide further information designed to promote the implementation of Responsible Fishing.

Program Justification:

The responsibility of States and Users is to conscientiously conserve, manage, develop and protect their respective fisheries resources. The corollary to the precepts of the CCRF, the article on fishing operations will play a vital role in the adoption of measures for long-term and sustainable production and utilization of fishery resources contributing to the region's food security.

The Training Department implemented the RCCRF Project

Phase 1: Responsible Fishing Operations and the Regional Guidelines for Responsible Fishing Operations with the result that this project has become a tool for the implementation of the practices in the Southeast Asian region.

Program Priorities:

1. Study on JTEDs and by-catch reduction
2. Regional Training Course in Responsible Fishing Operations.
3. Regional Training Course in Environmentally Friendly Marine Engineering for Fishing Vessels.
4. Regional Short-term Training Course in Refrigeration for Fishing Vessels.
5. The Production of Information Packages on Responsible Fishing.
6. The Production of a Training Manual for Responsible Fishing.

Exploitation of Under-Utilized Resources

Program Duration: January – December 2001

In a review of the state of the world's fisheries in 1994 (FAO 1997), showed that the annual increase of the world's reported landings was approaching zero. This indicates that the maximum yield of the oceans was being reached and that the average catch over the past few years was very close to that maximum. Based upon the crude global landing estimates, the world potential for fish production is now at a maximum. This composite aggregate result hides the increasing occurrence of over-fishing of stocks in many areas, whereas the demand for fish protein shows a continuing to increasing trend. To counteract this effect the exploitation of under-utilized fisheries resources is a key issue in increasing the provision of low-priced fish protein to meet the demand.

Projects under this proposal include:

1. Research Projects :
 - 1.1 The Study on Ocean Squid Resources in the Indian Ocean and South China Sea areas.
 - 1.2 The Study on the Abundance of Demersal Fish Resources in the Indian Ocean and South China Sea.

- 1.3 The Study of Tuna Resources in the Indian Ocean.
2. Training Projects :
- 2.1 Regional Short-term Training Courses in :
- Pelagic Fishing
 - Long-line Fishing
- Envisaged Program Output:**
- The program output will be of benefit to the region in sustainable fisheries for food security by the following:
1. To gain various information on new fisheries resources that may be utilized. Such information would include species composition, abundance, fishing ground locations and characteristics.
 2. The best use of appropriate technology to harvest the new resources.
 3. To secure sustainable fisheries for food security policy in the region.
- Program Priorities:**
1. Study on Oceanographic Squid Resources in the Indian Ocean and South China Sea areas.
 2. Study on the Abundance of Demersal Fish Resources in the Indian Ocean and South China Sea areas.
 3. The Regional Short-term Training Course in Pelagic Fishing.
 4. Study on Tuna Resources in the Indian Ocean.
 5. The Regional Short-term Training Course in Long-line fishing.

SEAFDEC Aquaculture Department, Training Program for 2001:

	Dates	Training Fees
Freshwater Aquaculture (Aquafresh)	8 Apr - 17 May (Weeks)	US\$1,750
Management of Sustainable Aquafarming Systems (Sustainableaqua)	09 May - 14 Jun (5 weeks)	US\$2,250
Marine Fish Hatchery (Marfish)	05 Jun - 13 Jul (5 weeks)	US\$2,250
Fish Nutrition (Nutrition)	10 Oct - 15 Nov (5 weeks)	US\$1,850

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Towards an increased collaboration with PNG National Fisheries College

During a recent visit to Papua New Guinea, SPC Fisheries Training Adviser spent a few days at Kavieng, home of the PNG National Fisheries College (NFC). The purpose of the visit was to better understand NFC's present restructuring and plan future collaboration projects between the College and the Training Section.

In Kavieng, the AusAid-funded NFC Strengthening Project (NFCSP) was initiated early last year with Hugh Walton, the previous director of the New Zealand School of Fisheries, as project manager; Rusty Strickland as Fishing Operations Manager; and several short-term consultants in areas such as post-harvest, organisational management, and fisheries management. The purpose of the NFCSP is to assist the PNG government with the upgrading of the NFC to a training institution with the capacity to identify industry needs, develop appropriate training strategies and curricula and deliver cost-effective training.

The NFCSP comprises several components:

- *Institutional Strengthening:* development of the College's mission statement, management structure, staff appraisal systems and recruitment of new staff matching profile requirements.
- *Training Development:* development and delivery of training courses in response to changing industry needs.
- *Student Support:* provision of interim funding for the support of fisheries and seafood handling cadetships, to assist in the transition to fee-based training, and satisfy immediate industry needs.
- *Facilities development:* upgrading the existing facilities (slipway, marine engineering workshop) and construction of new facilities (seafood handling teaching facility) for the training of qualified deckhands and seafood handlers to national competency standards.

In addition to the above activities, the NFCSP will also provide advisory services to the newly formed New Ireland Commercial Fishing Association (NICFA), a registered society with some 240 members including some seafood retail and processing companies, exporters and a majority of small-scale commercial fishers. The NICFA was established with the objective of coordinating and promoting consultations with provincial and national fisheries authorities and with other bodies involved in fishing and associated industries of PNG.

Following discussions with NFCSP staff, several areas of potential assistance by the Section were identified:

- *Staff development:* New staff are being recruited at the College and it is likely some will lack a teaching background. A priority for NFC will be to provide teaching skills training to its new staff. The Section is proposing to use its network of training providers for the setting-up of individual training attachments to expose NFC staff to the teaching procedures of selected overseas institutions. Another option under consideration is the organisation of an in-house train-the-trainers course as was done in June 2000 at the Vanuatu Maritime College. The Vanuatu course focused on competency-based teaching for adults and was run by NEXT Vanuatu, an Australian institution that specialises in adult teaching.
- *Pre-sea safety and fishing course:* The first level of fisheries training at NFC and the initial qualification in the new PNG certification structure for fishing vessel crew is the Certificate in Fishing Operations 1 (CFO1). This five-week course, similar to the SPC Pacific Island Qualified Fishing Deckhand certificate, will be delivered in competency-based format, originally in Kavieng and, later, in other Provinces. The first course is scheduled for March 2001 and the Training Section will partly fund a consultant tutor to come to NFC to help the new local tutors running the course. The Section has similarly assisted Vanuatu and Tonga with the running of their initial pre-sea course.
- *Pearl farming attachments:* Niugini Pearls Limited is a small company with hatchery and farm sites on two islands opposite Kavieng. Owned by the landowners of the Tigak Islands, the company's objective is to seed 7500 shells every six months. At this stage, the company has a broodstock of 2000 oysters. Early in 2001, the Training Section will organise a training attachment for two staff of Niugini Pearls. The training will focus on spat collection and hatchery techniques, farm systems and seeding. Section staff are in the process of organising the attachments, which are likely to be based at Penrhyn, in the northern group of the Cook Islands.
- *Safety-at-sea materials:* Following the translation of SPC safety-at-sea materials in Bislama and Solomon Island Pidgin, the Section will collaborate with staff of NFCSP for the translation of the same materials – safety check-list posters and stickers – into PNG Pidgin and Motu. The materials will be printed in Port Moresby and distribution to the provinces will be made by the College.

- Masterfisherman attachment:* The New Ireland Commercial Fishing Association (NICFA) requested the services of an SPC masterfisherman for a period of two-three months early in 2001. The purpose of this attachment will be to assist with the deployment of several FADs in the Kavieng area and promote appropriate small-scale methodology for pelagic long-lining and deep-bottom fishing. Planning for the attachment is currently underway.

Interestingly, the AusAid/NFCSP and another major fisheries development projects funded by the ADB, work in harmony and apparently complement each other quite well. For instance, a fishing wharf will soon be built under the ADB project in parallel to the renovation and building of new NFC facilities in the same area, including a large seafood handling teaching facility, a functional marine engineering workshop used for both training and commercial purposes and a renovated slipway. If those projects continue to progress according to plan, Kavieng will possess all the required tools to support a profitable commercial fishing industry — rich fish grounds, a modern training institution, onshore support facilities and trades and a powerful commercial fishing association.

Tonga Institute of Science and Technology Maritime Division Course calendar for the year 2001

N°	Course names	Course dates	Duration	Max n° of participants
1	Class II Watchkeeper Rating (Pre-Sea)	02 April – 17 August	20 weeks	Deck: 15 Engine: 15 Catering: 4
2	Advance and Familiarisation LPG	02 April – 20 April	3 weeks	Trainees: 15
3	Master Class V Engineer Class V	27 August – 02 November	10 weeks	Deck: 15 Engine: 15
4	Fisherman Ship Safety Course	23 April – 11 May	3 weeks	Trainees: 15
5	Special Catering Course	10 Sept – 26 Oct	7 weeks	Trainees: Open
6	LPG Familiarisation Course (Basic)	12 Nov – 26 Nov	2 weeks	Trainees: 15
7	Ship Safety Course	12 Nov – 30 Nov	3 weeks	Trainees: 15

If you need more information please contact:

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Samoa Polytechnic School of Maritime training Programmes Information 2001

Programme course code	N° of Courses	Programme Title	N° of Programme per Year	Start	End	Duration	Maximum number of students
MR - 10	9	Certificate of Achievements in Basic Maritime Multipurpose Training	1	12 Feb 2001	27 Nov 2001	35 weeks	30
FD - 10	7	Certificate of Achievement for Qualified Fishing Deckhand	1	20 April 2001	20 Oct 2001	24 weeks	10
EW - 20	6	Certificate of Competency in Marine Engineering Watchkeeping (Rating 1)	1	05 Mar 2001	31 May 2001	16 weeks	15
NW - 20	6	Certificate of Competency in Navigational Watchkeeping (Rating 1)	1	05 Mar 2001	31 May 2001	16 weeks	20

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SEAFDEC/AMC Collaboration

An MOU between the Australian Maritime College (AMC) and SEAFDEC was signed on 17 November 2000 at the Training Department by Mr Mark Wilson, the Deputy Director and Head of the Graduate School of AMC, and Mr Panu Tavarutmaneeagul, SEAFDEC Secretary-General.

The MOU aims to promote collaborative programmes in education, training and applied research in aquaculture, fisheries and post-harvest technology. The objective of the agreement is to collaborate in human resources development, research and information development. Human resources development will involve collaborative curricula development, especially in responsible fisheries, seafood

product development, and ecological sustainable development.

The agreement also covers the exchange of staff, lecturers, experts and trainees, as well as their participation in on-the-job training, workshops seminars and symposia. AMC and SEAFDEC will carry out collaborative and joint research projects as well as research extension, including regional workshops, seminars and symposia. For information development, both institutes agree to develop and exchange information and cooperate in an information network.

Source: Seafdec Newsletter oct-dec 2000

FSM Fisheries and Maritime Institute (FMI)

The FSM Fisheries and Maritime Institute came into existence on 10 August 1999, when the College of Micronesia signed an agreement with the national government of the Federated States of Micronesia to establish a national fisheries and maritime training center for the country. The permanent site for the Institute is on Yap Island, the former site of Micronesia Maritime and Fisheries Academy which was run by the Protestant Mission in Micronesia. The FSM Fisheries and Maritime Institute (FMI) became the sixth campus of the College of Micronesia, and the only campus to offer fisheries and maritime courses.

The fisheries courses offered at the Institute are taken from the materials developed and provided by the Fisheries Training Section of the SPC, and other newer materials developed by the FMI fisheries staff with the able assistance of the Japanese International Cooperation Agency (JICA) team of experts fielded at the Institute. The maritime courses, however, are those developed and provided by the Regional Maritime Programme of the SPC based in Suva, which meet the requirements and standards of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers. Before taking the fisheries courses students must take the common courses. The common courses consist of the Elements of Shipboard Safety (a shipboard familiarization course) and Basic Shipboard Safety (sea survival techniques, basic fire fighting and control, elementary first aid, and occupational health and safety). The Restricted Class 6 Master/Engineer Course is currently also offered as a common course to give a little bit of fishing taste to the students and help them to decide which industry they will pursue. The other fisheries course is the Class 6 Master/Engineer; satisfactorily completing this course and passing the DOT exams entitles the candidate to be Master

of a 24-metre longline fishing vessel. The merchant marine courses available once a student has completed the common are in order of progression: the Multi-Purpose Rating Course; then the Class 5 Engineer Course followed by the Class 4 Engineer Course; or the Class 5 Master Course, followed by the Class 4 Master Course. These are the highest courses the FSM Fisheries and Maritime Institute offers. Those seeking certificates higher than Class 4 would have to apply to institutions overseas.

The FSM Fisheries and Maritime Institute is still in its infancy and, aside from the fact that the buildings that make up the FMI facilities have not yet been completely refurbished, much of its training materials and equipment are still forthcoming. Therefore, training is still concentrated on the lower levels of seafarers. Once these equipment and materials are received, installed and operational, the higher courses will slowly be introduced. Since September 2000, four sessions of Elements of Shipboard Safety/Basic Shipboard Safety (ESS/BSS) and one session of Restricted Class 6 Master/Engineers Course have been run. We have just started the second course in Restricted Class 6 Master/Engineer, beginning 23 April and concluding on 15 June. From 2 July to 27 July, we will conduct another ESS/BSS course, to be followed by a Multi-Purpose Rating Course from 30 July to 7 September, and by another ESS/BSS from 10 September to 5 October. The last session in the year will be an ESS/BSS course from 15 October to 9 November, followed by a Multi-Purpose Rating Course from 12 November to 21 December.

The Institute is open to men and women of every nationality. Although students who have completed grade 9th can enrol, high school graduates are preferred.

Training at the Australian Fisheries Academy

Background

Monday morning I'm up before sunrise to catch the first plane out of Tonga on my way to the Australia Fisheries Academy in Port Adelaide, South Australia.

The purpose of this course is to obtain my Grade 5/Skipper 3 Certificate so I can legally operate vessels up to 24 m in length within 100 nautical miles from shore. In Tonga this is about the limit of our waters: we have islands stretching north and south so we are never far from shore, and we are bounded to the west, north and east by Fiji Islands, Samoa and Niue respectively. All of my vessels fall well within the limits of 24 m, with the largest longliner being 18.3 m.

have been operating boats in Tonga for 17 years. Our company owns six vessels ranging in length from 9 m to 18 m. Up until now the Ministry of Marine and Ports has allowed me to operate all of my vessels. Although the skippers working for me have the appropriate tickets, I have been operating under a Certificate of Service allowing me to skipper my vessels. However, late last year when I asked the Ministry to renew my Certificate of Service I was told that since Tonga was adhering to the provisions of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (known as STCW 95) and was aiming to be on the 'white list' I would now have to obtain the appropriate ticket to operate my vessels within the law.

The Grade 5 Skipper Certificate ten-week course is being offered in Tonga only once later this year. Besides myself, our company employs three other skippers who we want upgraded to the Grade 5 level. All three of these fishermen currently skipper boats using their Grade 6 tickets. Their current tickets are fine for the vessels they are operating, but our expansion plans are for larger fishing vessels that will require Grade 5 skippers.

Since I could not afford to pull myself and three skippers out of the water for ten weeks at the same time, we decided that another skipper and I would attend the Grade 5 course at AFA. The duration of this course is only four weeks, so there is less time away from fishing. Why the difference in duration? In Tonga the course is taught in both Tongan and English to ensure that the students understand the material and to prepare them for the exams, which are in English.

Our company selected Solomone Tui'pulu to attend the AFA course with me. We selected Solo because he seemed to do well during the Pacific Island Deckhand course at AFA late last year and his understanding of English is reasonable.

Getting there

Back to Monday morning. I'm sitting on the airplane and still no sign of Solo at the airport. The flight is closed and we're preparing to depart so I'm thinking that Solo has had last minute reservations and decided not to come to the course. Anyway, I'll be in the air in a minute on my way to the first stopover in Auckland, where I figure I can call back to Tonga to find out what happened to Solo.

At Auckland airport my schedule is so tight I have no time to get to a phone as I'm now boarding a plane to Sydney. The same thing happens in Sydney where I have only minutes to catch my domestic flight to Adelaide.

In Adelaide, Grant Carnie, the General Manager of AFA, meets me at the airport and asks where Solo is. Good question, so I get to a phone and call Tonga. Turns out there was a bit of miscommunication within the company and Solo was never picked up to get to the airport. By the time Solo caught a taxi to the airport the flight was heading down the runway.

Luckily for Solo this is the one day of the week where there are two flights to Auckland so he catches a flight at noon and is able to connect all the way through. When he arrives at Sydney they tell him the next bus to the domestic terminal won't get him there in time, so he grabs a taxi and races to the domestic terminal. At the domestic terminal he runs to the gate that his plane is departing from, but is so out of breath that the airline staff make him sit down for five minutes to catch his breath before he boards the waiting plane.

Grant and I return later that night to collect Solo, and he and I are off to our accommodation at Fort Largs Police Academy. The next morning Grant picks us up from the dorm rooms and takes us to the school early to show us around before the course starts.

The course

Our first day at the course was Radar Theory. Radar theory!! Solo and I were so tired we couldn't agree on the time of day and we were expected to stay awake for a stimulating lecture on radar theory. Not to mention this was my first day in school since way back, and probably as long for Solo. When the afternoon session ended we were only too happy to head back to our dorms. At the dorm I reviewed the day's material to ensure Solo understood everything. This was to become our normal routine during most of the course. My initial reason for doing this was because English is Solo's second language, but it turned out to be excellent discipline for me to study as well.

Friday of our first week. We'd been informed there was nothing new in radar study and the rest was review until a practical exam on Monday and the written exam on Wednesday. Both Solo and I were only too happy to get into the practical. Our boats in Tonga are equipped with the latest Furuno radars so there were no new terms, dials or buttons for us to learn. This was going to make the practical, which was 40% of the radar exam, a breeze. The plotting exercises on paper as part of collision avoidance were also fairly easy, although not something we do every day at sea.

Radar practical

No problem here for Solo or me and we both passed easily. Now there were just a couple more days of review before the written radar exam.

Radar exam

Although the general mood of the class was that this would be difficult neither Solo nor I were too worried. On Tuesday we sat a practice exam to point out any weaknesses we needed to study up on, and that night we crammed in another five hours of studying.

Wednesday's exam was split into two parts. One section was radar plotting for collision avoidance and the other section was radar theory. As expected we both passed easily and started the next day on Coastal Navigation.

Coastal navigation

This was another subject that Solo and I found easy, as we often use paper charts and are very familiar with plotting positions. However in Australia most of the fishermen fish

close to shore and rely almost exclusively on their electronic GPS plotters. Since plotting positions is the same in every language Solo did very well here. Although the rhymes used to memorise transferring chart work to the wheelhouse were in English, the fact that we commonly plot positions at sea meant that this was familiar to us and we did not need the jingles to memorise what to do. The exam on this subject was heavily weighted towards chart work, so again we passed easily. Two down and the rest of the subjects looked fairly easy. We also had a better feeling of what the exams were like and were confident that the next two weeks would be just as easy. We were looking forward to getting back.

Ship and nautical knowledge

The sea time required to enter this course is 30 months. Anyone with 30 months on a vessel should know this stuff well. After two days all I could say was that this was basic review of common terms. The instructors promised it was building up to the material that would come later — I certainly hoped so. There was a lot to cover in Ship and Nautical Knowledge and it built up to quite a bit that needed to be memorised. A lot of it was common sense, but it had to be memorised in the terms that would be used on the exams.

Although Solo cruised through the coastal navigation and radar sections, these knowledge sections gave him some problems. I can only put this down to the fact that the terms are English words, common to boat builders and old seafarers, which are never used by fishermen, let alone island fishermen who speak another language. Because of our schedule to return to Tonga, Solo and I had to sit the Ship Knowledge exam on Wednesday, the Nautical Knowledge exam on Thursday morning, and then our oral exam on Thursday afternoon. The rest of the class would not start sitting oral exams for another week. So besides studying for the written exams we were also studying for the orals. Unlike the written exams, which were conducted and graded at the school, Transport SA, who issue the certificates, gave the oral exam. For this we could be expected to be asked questions on anything we had studied for the past four weeks as well as questions on rules of the roads, vessel lights, buoyage systems and just about anything else that might pertain to the size vessels this ticket would allow us to operate.

The home stretch

All of this made for a very intense last few days of school. No time to celebrate after each exam as we were preparing for the next. This was made especially difficult when the class and teachers all went to lunch together at a local pub after the last written exam and Solo and I had to keep drilling each other on questions we thought the examiner at Transport SA would ask us that afternoon.

To sit for the orals you have to pass all of the written exams. By lunch on Thursday we were told we had both passed the last written exams, which would be taken to Transport SA for the examiner to review. After lunch came the oral exams. I went in first. With so much to study in the last few days, Solo and I had done 'selective studying' for our oral exams. We thought as we were from the Pacific the examiner would direct his questions towards areas that were relevant for us. So when he starting asking me for signals made in fog I really had to struggle to remember the sections in the books that I had only glanced at. Sorry, but fog signals are not something I hear every day in Tonga. In fact in all my years in Tonga I have only encountered fog once at sea, while I was anchored up on a seamount fishing for snapper north of Vava'u and there wouldn't have been another boat within fifty miles. That's how often we get fog! Well I remembered enough to pass the oral exam, as did Solo, and we became the first in our class to get our tickets. And this is the most important thing to remember about the course and the instructors at the Australian Fisheries Academy: they are there to help you get your ticket. There are no quotas or restrictions as to how many people in the course will be allowed to pass. Everyone who answers enough questions correctly passes, and the instructors are there to help.

The instructors at the school have years of sea time in various fields, some on trading vessels, some in the navy and others on fishing vessels. All of the instructors make themselves available to each student. Our class was roughly half going for a 'fishing skipper' ticket and other half going for a 'trading vessel master' ticket. There was practically no difference in the course work for these tickets. However in Australia they are different tickets depending on your planned vessel operation. The fishing skipper ticket, which is what Solo and I did, allows you to operate fishing vessels up to 24 m in length, up to 100 nm offshore. The 'trading vessel master ticket' relates to the same length of vessel and distance offshore, but a skipper with this ticket cannot operate a commercial fishing vessel, only passenger, freight and charter boats. The facilities at AFA are top notch, allowing the students to simulate many aspects of navigating a vessel or working in an engine room. One of the newest toys at the school is a bridge simulator with all the standard electronics found in a modern fishing vessel. Sea and weather conditions can be altered with a computer programme, as can surrounding vessel traffic. This gives the 'captain' at the bridge an opportunity to practice manoeuvres in challenging situations without the risk of a real collision and the loss of a vessel and lives. This has to be valuable — if it were to happen at sea you could get only one chance to make the correct choice.

Another great teaching aid is the engine room in a container. An engine as complete as one on a vessel sits inside a normal 20-foot shipping container. The details of this room are too many to list, but nothing is spared. This container can

become a travelling classroom for engineering courses. The school also has a processing operation for post harvest teaching. All of this is under one roof in Port Adelaide, and there are also other campuses where courses are carried out.

The attitude of the other students towards us was great. Of course our fishing area and methods are a little different so they wanted to find out as much as possible about this. And we found out just as much about them. We never wanted for something to do on the weekends, as we had several offers to join in with our classmates and teachers each week. Because of this we were able to see some other parts of South Australia. And where did all this effort get us? Well I'm

legally able to skipper my boats again and Solo will be skippering our largest longliner for the first time next week. Our company's plan is to purchase another tuna longliner in the next few months that Solo will skipper full time.

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Vanuatu Maritime College Officially Launched



Friday 9 February 2001 saw the official launch of the Vanuatu Maritime College. On that day also, assets formerly belonging to the Fisheries Department were officially transferred to the College, funding agreements worth 1,413,000 Euros were signed, a new fire-fighting complex was opened and fire-fighting equipment was commissioned.

The College was honoured by the presence at the launching ceremony of the Prime Minister, the Speaker of Parliament, three Government Ministers and representatives of the diplomatic corps. Outlining the history of the College, the Chief Executive Officer, Capt. K.J.

Barnett, explained that it had been established in 1999 as part of the move for comprehensive reform by government and in response to global changes in the standards of seafarer training and certification. Since the College started training in September 1999 almost 600 students had participated in its maritime and fisheries training programmes. It was fitting, he said, that following trialling to confirm its seaworthiness, the College should now be formally launched on its intended voyage.

The Prime Minister, the Right Honourable Barak Tame Sope Ma'automate, highlighted the importance to Vanuatu's economy of safe and efficient domestic ships, competent, skilled and reliable seafarers, and properly trained and experi-

enced fishermen. He urged ship-owners, their crews and local fishermen to make good use of the unique training opportunities offered by the College. He then officially launched the College in Island style by breaking open a large coconut, and wished the good ship Vanuatu Maritime College a long, safe and happy voyage. Immediately afterwards, the College's flag was broken out for the first time. The next stage of the ceremony saw the Honourable Albert Ravutia, Minister for Fisheries, and Capt. Barnett sign an agreement by which buildings, equipment, vessels and maritime installations previously owned by the Department of Fisheries were formally transferred to the College.



The Honourable Albert Ravutia, Minister for Fisheries (centre) and the Chief Executive Officer, Capt. K.J. Barnett (left) sign the agreement transferring former Fisheries Department assets to the College, watched by the Chairman of the College Board and Director of Fisheries, Mr Moses Amos

Under a project named Strengthening of Vanuatu Maritime College for a Sustainable Future, four aid donors – the Agence Française de Développement (AFD), the European Union (EU), Australia and New Zealand – are collaborating to develop the College infrastructure and provide training resources and technical assistance. AFD will be contributing funding totaling 750,000 Euros over a period of three years. The agreement providing for this funding was signed by the Prime Minister on behalf of the Government of Vanuatu and Mr Christophe Richard, Acting Director, on behalf of AFD. Later in the proceedings, the Prime Minister and Capt. Barnett signed a contract re-assigning this funding to the College.

Total funding for the College from the EU over the same period will be 663,000 Euros. The financing agreement between the Commission of the European Communities and the Republic of Vanuatu, which had already been signed in Brussels for the EU, was also signed by the Prime Minister in the presence of Mr Edmund Appelbaum, Chargé d'Affaires, Delegation of the European Commission for the Pacific. The Ambassador of the French Republic, His Excellency Mr Patrick Amiot, then spoke of the services provided by the Vanuatu Maritime College and their contribution to the nation's development, which, in turn, had attracted donor support for the College's growth. The Prime Minister thanked AFD, EU, Australia and New Zealand for their willingness to assist the College to develop and expand.

Next, the invited guests proceeded to the waterfront, where they witnessed the official opening of the new fire complex, funded by Australia, and commissioning of fire-

fighting equipment, funded by New Zealand. The High Commissioner for Australia, His Excellency Mr Perry Head, gave a short address on behalf of himself and his New Zealand colleague, His Excellency Mr Robert Taylor. College students gave a lively demonstration of how these facilities will be used. The Chairman of the Vanuatu Maritime College Board, Mr Moses Amos (who is also Director of Fisheries) expressed the College's appreciation to Australia and New Zealand.

In a closing address, the Minister of Education, Youth and Sport, the Honourable Jacques Sese, spoke of the important role to be played by the College in the development of Vanuatu's young people. Addressing the College's instructors, he reminded them of the very special qualities required of good teachers, including the need to set high standards and be energetic and dedicated every day. The proceedings ended with a kava ceremony and tasty refreshments produced by the College cook.



(Left to right) Mr Edmund Appelbaum (EU), the Prime Minister, Mr Christophe Richard (AFD) and the French Ambassador during the signing of the funding agreements



College instructor and students listen attentively during handover by the Australian and New Zealand High Commissioners of the fire complex and equipment

Quality training for seafarers and fishers at all levels to improve employment opportunities in the maritime and fishing industries and enhance safety at sea.

Competency based training and assessment programmes:

Pre-sea training	Safety certification	Tanker familiarisation
Deck watch rating	Master < 20 GT	Master < 200 GT
Engine watch rating	Engineer < 75 kW	Engineer < 300 kW

Rural fisheries training

Fishing techniques	Seafood handling	Fishing nets and gear
Safety at sea	Boat maintenance	Outboard maintenance

For further information contact

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Integrated coastal resource management in tropical seas: South Pacific group completes one month JICA training program in Japan

*by Frank Chopin
Fisheries Adviser
JICA*

Summary

In November 2000, nine people from South Pacific countries visited Japan to participate in the group training course on Integrated Coastal Resource Management. This one-month course combines classroom-based seminars and workshops with field trips to coastal communities and fishing grounds. Participants visited two distinct subtropical island groups located in Japan's southern island chains. Chichi-jima, in the Ogasawara group, is located 1000 km south of Tokyo and is characterised by a volcanic topography, limited coral reef development, low population and subtropical climate. There are 30 islets in this group whose isolation from the Asian continent has resulted in a unique flora and fauna. They are also the breeding grounds of the humpback whale from December to April. A strong sense of conservation and a precautionary approach to island development has resulted in an all-out effort by islanders to protect the region's natural beauty.

The second part of the program took participants to several islands in Okinawa Prefecture, Japan's southwesternmost prefecture, consisting of 50 inhabited and 110 uninhabited islands scattered over 1,000 km in an east-west and 400 km

from north to south. The islands are divided into three major groups: the Okinawa Island group, the Miyako Island group, and the Yaeyama Island group. Participants visited the capital, Naha, Iheya, Miyako and Ishigaki islands. In some areas, the higher populations, urbanisation, tourism and industrial development have had a significant impact on the natural environment resulting in a loss of habitat and biodiversity, land and water pollution, and coastal erosion. Observing these impacts and studying how local governments and island communities have tried to mitigate these problems through restoration and awareness programs provided some valuable lessons regarding rehabilitation of coastal resources and cooperation between ministries of environment, fisheries, tourism and industry.

Participants returned to Tokyo for completion of their training and presentation of their action plan for integrated coastal resource development.

The participants attending the training

In the two years the course has been operating, JICA has accepted seventeen participants from ten countries as follows:

Name	Country	Occupation	Year
Suresh Chand	Fiji	Asst. Manager (Inshore), Fish. Division	1999
Apolosi Ralawari Turaganivalu	Fiji	Acting Principal Fisheries Officer, Fish. Division	1999
Philip Polon	PNG	Executive manager, Research & Management Divn. National Fisheries Authority	1999
Pouvave Fainuulelei	Samoa	Senior Fisheries officer, Fisheries Division	1999
Peter Ramohia	Solomon Islands	Senior Fisheries Officer, Fisheries Division	1999
Bernard Telei	Solomon Islands	Principal Environment Officer, Environment / Conservation Division	1999
Henry Toropasi	Solomon Islands	Senior Tourism Officer, Dept. of Commerce & Tourism	1999
'Ulungamanu Fa'anunu	Tonga	Principal Fisheries Officer, Ministry of Fisheries	1999
Fritzgerald Niffon	FSM	Marine Specialist – Chuuk Dept. Marine Fisheries	2000
Romio Osiena	FSM	Deputy Director – Chuuk Dept. Marine Fisheries	2000
Tiemaua Tebaitongo	Kiribati	Asst. Fisheries officer, Fish. Divn.	2000
Lara Atto	Nauru	Women's Fisheries Development Officer, Fisheries & Marine Authority	2000
Lora Demei	Palau	Fisheries Officer, Divn. Marine Resources	2000
Jesse Sengebau	Palau	Asst. Laboratory technician, Environmental Quality Protection Board	2000
Glen Alo	Vanuatu	Fisheries Extension Officer, Fisheries Department	2000

Training Objectives

To improve the strategic planning policy and management capabilities of personnel in industry and government that are involved in development and use of coastal resources in Pacific Island countries. It will achieve these objectives by providing participants with analytical tools for problem solving (PCM Method), case-based learning seminars on the problems of managing natural resources, comparison of coastal field sites, hands-on experience in sustainable development activities and workshops where participants propose a plan for development of a specific resource sector.

Departure to Ogasawara

After a short orientation program at JICA Tokyo International Training Centre (TIC), participants boarded the 6670-tonne ferry *Ogasawara Maru* for a 25-hour trip to Japan's southern island, Chichi-jima. Course Leader, Mr Hideyuki Tanaka (pre-

viously in charge of FAO – S. Pacific Aquaculture Project), Frank Chopin (JICA Advisor) and Mitsuhiro Osaki (JICA Train-

ing Officer) accompanied the participants to the Ogasawara Island group. Mr Naoyoshi Sasaki, Managing Director of JICA Kanagawa International Fisheries Training Centre (KIFTC) commented that "We included a trip to the Ogasawara Island group for three reasons:

- its remoteness from the mainland and strong emphasis on marine and land conservation by the island community have resulted in a precautionary approach to industrial development;
- Secondly, the island topography is volcanic with steep terrain, pocket beaches and limited shallow water areas and presents the island community with distinct problems related to coastal erosion and management of coastal fish populations;
- even though Ogasawara has a small population (<2000), it has a local capacity for monitoring,



Another beautiful day for participants in Ogasawara Island

researching and managing its fragile natural resources. Self-reliance, natural beauty and sustainable development are the key elements of the trip."

Ogasawara Island program

During the stay in Ogasawara, experts from the island conducted seminars and field trips on various aspects of natural resource management including:

- Self reliance and subsidies – Mr. Baba
- Island community development – Mr. Savory / Suzuta
- Industry tourism Division, Ogasawara Village Council
- Habitat degradation by feral goats and rehabilitation results – Mr. Kase, national Parks, Ogasawara
- Habitat degradation on land and loss of biodiversity on reefs due to sedimentation – Mr. Inaba, Ogasawara marine Conservation Centre
- Deep Sea vertical longline in Ogasawara – Mr. Nishikiori / Nozawa, Ogasawara Fishery Centre
- Constraints to fishery development Ogasawara – Mr. Ono, Ogasawara Fishery Cooperative Association
- Whale Watching Association and Ecotourism – Dr. Mori, Ogasawara Whale Watching Association
- Analysis of tourism data – trends and opportunities in Ogasawara – Mr. Yamada, Ogasawara Tourism Association

Marine turtle conservation

A study tour was arranged to the Ogasawara Marine Centre, which has researched marine turtles for 18 years and has released over 130,000 juveniles to date. Researcher Manami Yamaguchi described the research programme for monitoring turtle populations and how the Centre works with island fishers to collect adult females for egg laying.

The facility tour was followed by a visit to a nesting beach to see how research data is collected and how each nest site is surveyed for survival/mortality ratios. "This centre is more than just involved in the research of turtles," said Manami Yamaguchi. "We try to bring all members of the island community together to listen, see, learn and discuss the issues of traditional fisheries, culture and resource sustainability. We hope the participants can get an idea of this participatory

approach to managing natural resources and the importance of sharing information and ideas."

Offshore fishing for tuna and marlin using small boats

The Ogasawara fishery cooperative arranged for participants to spend a day fishing for tuna and marlin using vertical drop lines on the deep sea fishing grounds off the west coast of Ogasawara

using 18-metre FRP boats. Although, the trip was very short (depart 04h30 return 13h00) participants on both boats could experience the handling, shooting and catching of large pelagic fish. Swordfish and tunas were carefully handled and processed to ensure maximum prices at the Tokyo market. Mr Nishikiori's lecture describing how fishers had switched from heavily fished shallow water reef areas to target large marlin and tuna was well demonstrated. Participants were particularly impressed with the simple but effective 600-metre drop lines fished in water depths of 1200 metres.



Early morning catch of marlin using droplines in 600 metres

Subtropical aquaculture

Kimura Johnson of the Ogasawara Fisheries Centre described the subtropical aquaculture research conducted by the Centre and how information is passed to the Sea Farming Association for commercial development of aquaculture species. Mr Johnson discussed with participants the problems of early life rearing in tanks and showed them around the Centres laboratory and holding tanks. There was also a tour of the Sea Farming Association's facilities and sea cages anchored in the bay. Participants observed the feeding of two species of fish, kampachi (amberjack) and shima aji (striped jack). "Rearing fish in these pure warm waters requires special care. We are particularly concerned about diseases that can be introduced through ballast water from visiting boats or through juveniles transported from the mainland." Kimura Johnson said. "Also, we have focused on species that are suited to the warm waters of the Island and also in producing fish without using medicines to control stress or disease. Using simple but labour intensive freshwater bathing, we have managed to control and minimize ectoparasite problems," Johnson said.

Garbage recycling facility

A short observation tour was arranged to visit the island garbage recycling facilities and to view the efforts made

on the island to minimise the impacts of waste disposal. All cans and plastics are separated and packaged for recycling off the island. Burnable garbage is reduced to ash and held in closed containers for burial without the possibility of leaching into the soil. Scavenging systems remove noxious gases from the incinerator flu. In addition, refrigerant gases, glass, old cycles and other equipment are all recycled.

A brief tour was also made of the marine park to show how coral reefs can be viewed by glass bottom boats—a potential source of income for fishers involved in tourism activities. The participants also experienced swimming with dolphins and visited small-scale souvenir making of salt and hand-painted paper coral reef fish.



Feeding amberjacks at the Sea Farming Association grow out cages in Ogasawara

- Protection of coral reef from red-soil flow
- Administrative constraints on fisheries development in Okinawa
- Administration of tourism department – coexistence of fisheries and tourism

- Concept of ecotourism and development
- Case study of fisheries resource management

Dr Ian Woesik prepared a lecture describing the importance of coral reef ecosystems and the relationship between “source and sink” regions of the reef system. “These lectures were appreciated because they show the relationship between activities such as fisheries, tourism, sand mining and the need to monitor all activities” said Katri Walenska from Tonga.

Okinawa coral reef resources

After returning from Ogasawara, participants traveled to Okinawa for seminars and lectures related to coral reef ecosystems. Despite the passage of a typhoon through Ishigaki and Miyako Islands, the group visited various places including, fisheries cooperatives, aquaculture centres, ecotourism sites, marine parks, processing cooperatives, processing companies and a fish market. Lectures and seminars included:

- Marine Parks in Japan
- Characteristics of Okinawa Islands
- Development potentials of subtropical islands
- Use of deep water resources
- Policy and strategy for coastal fisheries management
- The FAD fishery
- Marine Festival
- Policy and strategy for conservation of coral reefs
- Inshore resource management for conservation of mangrove forests
- Fisheries in coral reefs – Local economy and marketing

The role of community in becoming more aware of the importance of seed release programs was well illustrated in the “release of juvenile fish” ceremony by village members, old and young. “It is a great way for children and other non-fishing members of the community to become aware of what the fishery cooperatives are trying to achieve by releasing young fish”, said Fritz Niffon from Chuuk FSM. “Also, the replanting of mangroves by the community fishers and the importance of reforestation that we observed is very important”, he said.



Electric hand reels for hauling drop lines

Preparation of participants action plan – using PCM Method

Although the course was very intensive, JICA requested each participant to prepare an action plan for development for the sector each participant was working in. JICA requested this work start in the home country with each participant bringing to Japan a

list of problems and constraints to developing a particular coastal sector.

This basic data was analysed using Project Cycle Management (PCM) tools such as problem tree and objec-

tives analysis to determine cause-and-effect relationships between problems and to focus on solving a particular core problem each participant was facing.

Participants develop their ideas for development

Mr Tanaka worked with each participant through group workshops in Tokyo, on the boat trip to and from Ogasawara and in the hotels in Okinawa. Individual support was also provided as each participant had a different focus for their action plan. Participants presented their plan during a one-day workshop attended by JICA HQ staff and expert commentators invited from the private sector and government institutions. "These workshops are to share development approaches and to discuss how problems are perceived by different resource sectors. Cross-fertilisation of ideas from different sectors and different countries in the region make for very interesting discussions," said Mr Sasaki of KIFTC. "The participants' presentations demonstrate their increased awareness of the problems that can result from inappropriate development and how important it is for projects to develop through a participatory process," he said.

Pacific Islands need an integrated approach

Mr Tanaka, who arranged the program curriculum noted that, "Coastal resource management is the most vital issue of the Pacific Islands. Because of many similarities, the Pacific Islands could learn many good and bad lessons from Okinawa and Ogasawara Islands. Without efforts towards an integrated approach, such ocean islands will turn to ocean deserts in the near future.

Aquaculture or stock enhancement practices are just two of many alternatives. I appreciate JICA offering such a catalytic course, and wish JICA's future collaboration

in implementation of field projects that help in this respect.

Lessons learned from 1999 and 2000 and future planning

Based on evaluations of the two courses, JICA is in the process of re-designing its program for fiscal year 2001. "We have tried to develop a course that shows the importance of integration of fisheries, tourism and environment and to some extent have achieved the objectives of increasing awareness of the need for this approach" said Mr Sasaki. "However, our target of attracting participants from tourism and the environment sectors and creating a balanced training group has not been

realised. In retrospect, we probably placed too much emphasis on fisheries and not on the process of integration. So next year we will amend the curriculum to illustrate more clearly the integrated approach." This point was echoed by Mr Mikuni who noted that "Ogasawara and Okinawa have practical examples of integrated and sustainable use of natural resources. For example, the presence of turtles and their relationship to island food culture, ecotourism, coastal habitat and sustainability is a case in point." Mr Mikuni illustrated this point by referring to the information shown in Figure 15.

The presence of turtles around the islands has created multiple opportunities

for various industry sectors to benefit from their existence. Island fishers need a regular supply of turtles if food traditions are to be maintained; tourists come to Ogasawara to have a chance to see nesting turtles or the chance to photograph them on a scuba diving tour; and turtles contribute to the biodiversity of the island and maintaining biodiversity is an important element of all the island communities. To achieve a balance, the island recognises the need for an integrated approach to conservation. This has included establishing marine parks, developing rules for harvesting,



Manami Yamaguchi describes the breeding program and age of tagged turtles



Jesse from Chuuk helps to measure turtles in the conservation centre

turtle conservation education programs in schools, release programs for islanders and tourists, protection of beaches, recycling of plastics, and research and early life protection for hatched turtles. Sustainability and multiple use can only be achieved when everyone understands the issues," said Mr Mikuni.

How to apply for next years course

"Each year JICA conducts surveys among the different countries asking the types of training they would like to see in the coming fiscal year. These surveys are sent to the national organizations of each country that act as contacts for assistance by the Japanese embassies and/or JICA offices. The results of these surveys are reflected in the upcoming fiscal year allocation of training seats," explained Mr Mikuni. Details of the group training courses, such as this one, are summarised in the General Information booklet. These booklets are sent to aid coordinating organisations prior to the course commencement date, and describe the conditions and qualifications for participating in a course, course objectives, curriculum and other important information. Applications are available from Japa-

nese embassies, JICA offices and national aid coordinating organisations in each country. Each applicant must have their application authorised by the organisation they are affiliated with and the coordinating organisation. This authorized form is then sent to the JICA office.



Field visit to Minami-jima to investigate turtle nesting sites and egg mortality

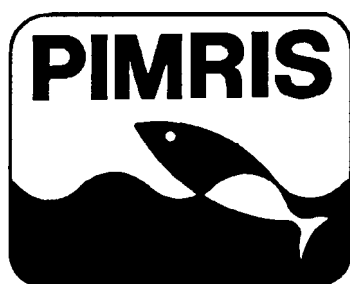
Come and join the 2001 Course!

JICA invites persons to apply for the next training course starting in October 2001. Participants should:

- be a university graduate;
- be engaged in fisheries, tourism or environment protection of coastal areas; and
- complete the A2/A3 form and associated information included in the General Information Booklet.

There are only a limited number of places available for this training program and we are looking for persons who are involved in design, implementation or evaluation of policy, or development projects in fisheries, tourism and environment sectors.

PIMRIS is a joint project of 4 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



Pacific Islands Marine Resources Information System

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.