



ings. Reports of workshops, conferences, seminars and some training courses are also included.

Report of the Twenty-first Regional Technical Meeting on Fisheries, Noumea, New Caledonia, 7—11 August 1989. (French edition, 57 pp.; English edition already published.). This meeting provides the only opportunity for representatives of the Fisheries Departments of the region to meet and discuss SPC fisheries activities as well as fisheries problems of regional interest. The 1989 meeting also included a one-day workshop on coastal tuna longlining.

Oceania Benchmark Sites Network for Agrotechnology Transfer (OBSNAT) Workshop, Noumea, New Caledonia, 5—16 June 1989. (French edition, 67 pp.; English edition already published.). This meeting of the OBSNAT expert working group was convened to develop the technical, administrative and budgetary requirements of a regional project. Funding for this workshop, which was attended by current and potential technical collaborators of OBSNAT, was generously provided by the Government of France.

■ SPREP PUBLICATIONS

The South Pacific Regional Environment Programme (SPREP) is now an autonomous entity hosted by SPC. A large number of publications are produced under the overall umbrella of SPREP. Most of these publications fall under the following series: Topic Reviews, Meeting Reports, Mission Reports, Training Reports, Environment Case Studies, Fact Sheets, Environment Newsletter, or under miscellaneous publications.

Report of the Third Meeting of the SPREP Steering Committee, Noumea, New Caledonia, 30—31 March 1990. (SPREP Meeting Reports series. French edition. 22pp.)

Coastal environments in the South Pacific. (English edition. 40pp.)

Implications of expected climatic changes in the South Pacific region: an overview. SPREP Topic Review no. 41. (English edition.) ■

The Fish Handling and Processing Project

No, this is not the first page of a new cookbook, it is only one of the many innovative ways of promoting and marketing fish in the Pacific used by the SPC Fish Handling and Processing Project.

Tuna Jerky

Take a large, fresh tuna or kingfish (+5 kg or 11 lbs). Fillet the fish, remove the skin, and cut out the dark red muscle of the fillet that runs along where the backbone was. Cut long thin slices of fish flesh along the length of the fillet to a thickness of approximately 5 mm (1/4 inch). Wash the fillets in lightly salted water, then place them in a marinade previously prepared, either in plastic containers with a good sealed lid or in double thickness plastic bag that can be closed with a knot.

Marinade

To make approximately a litre of base marinade, use the following ingredients, ensuring that all the sugar and salt are dissolved:

1 litre (2 pints) soy sauce
Juice from 5—6 lemons
100 g (4 oz) of sugar
50 g (2 oz) of salt

Other ingredients that can be finely ground and added to taste, are:

garlic,
pepper,
chillis,
ginger,
mixed spices.

Place the marinade mix in the refrigerator or on a bed of ice. The fish strips must be completely covered by the marinade, and left to soak for about 12 hours, with occasional mixing.

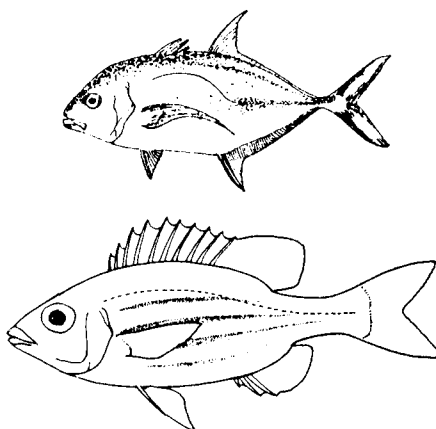
Remove the marinated strips of fish after the time has elapsed and wash quickly in fresh water to remove the brown colour of the soy sauce from the surface. Place to sun-dry on a mesh tray for two to three days (depending in the weather) or dry in a warm oven, which has a fan working for good air circulation, at a temperature no greater than 40°C (100°F). Turn the fish strips over regularly. The jerky is ready when the flesh is completely dry and has a reasonably tough and chewy texture.

Store in sealed plastic containers, bags or glass jars, in a cool place. Eat as a snack or serve with drinks.



In the past, development efforts in the field of fisheries have concentrated mostly on fishing techniques. It has become obvious, however, that the handling and processing aspects of fish are essential components of fish and fishery products marketing and therefore of fisheries development. In other words, the emphasis is not so much on catching fish (the harvesting part) as on what to do with it after it has been caught (the so-called post-harvest area).

The SPC Fish Handling and Processing Project was initiated in 1986 to respond to this pressing need to develop effort in the post-harvest area, thereby increasing the availability of food fish for domestic consumption and providing quality produce for export. The project aims to increase the utilisation of fish and fishery products, and therefore their value to Island countries, by improving the handling, processing and marketing of marine resources. The activities of the project in the post-harvest area complement effectively those of the SPC Deep Sea Fisheries Development Project (DSFDP) and national-level programmes to develop local fish harvesting facilities.



■ **Post-harvest fisheries activities**

In short, the project provides advice in the field of post-harvest fisheries to help countries utilise the catch to its maximum potential by upgrading fish handling practices at all levels in national fishing industries. It develops and promotes the use of suitable processing and packaging techniques. It assists with the identification and development of marketing opportunities, both local and export, to increase availability of food fish for local consumption, and generate foreign currency through the export of quality seafood produce.

The activities of the project, funded for the next three years by the Government of the United Kingdom, include:

- Training (both regional and in-country) in fish handling, processing and storage;
- Advisory services on technical aspects of post-harvest fisheries, including processing, packaging, marketing, equipment and materials;
- Market and product trials for fresh and frozen marine products;
- Pilot processing projects and trouble shooting, including pilot production trials of novel seafood products such as tuna jerky, etc.; and
- Provision and exchange of information.

The project is managed by the SPC Post-Harvest Fisheries Adviser, Steve Roberts.

PROCESSING AND MARKETING TUNA

Tuna offers a big commercial potential to the region. To develop this potential, one needs to look at the processing and marketing aspects and also to develop new markets by developing novel tuna products, which is what the project has been doing.

■ **Trial tuna processing and marketing**

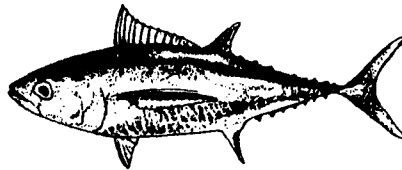
A trial project for cured fish processing and marketing in Tokelau has been given significant support by the SPC.

Assistance in 1990 first focused on drawing up specifications for equipment and materials, arranging quotes, drawing up layout plans for the processing facility, follow-up visits, etc. SPC provided technical assistance, while the bulk of funding for equipment and buildings came from Tokelau's component of the Economic Development Fund of the United States Tuna Treaty.

Skills training was provided to 15 people in the atoll of Atafu, to produce high-quality, hygienic products. The trainees included the manager of the processing facility, processing supervisor, ice-making supervisor and 12 processing staff. The Post-Harvest Fisheries Adviser provided essential technical advice on construction design to ensure that the buildings met hygienic standards for a fish processing operation. The marinated dried tuna is now being successfully manufactured to very high standards with an initial monthly production target of 500 kg of product packed in 200 g packs. This is the first commercial venture of its kind in Tokelau.

The Fish Handling and Processing Project also organised a marketing trial for the tuna product in New Zealand through the South Pacific Trade Office in Auckland. The marketing trial got off to an encouraging start. An order for 200 kg of the tuna product was received and another importer bought a small consignment of 15 kg to continue his market trials. The Pacific Island and Asian communities in Auckland have shown the most interest. A training attachment to this project in Tokelau for a staff member of the Tuvalu Fisheries Division was also funded by SPC.

The trial project needs continued support to ensure that it develops successfully as a commercial venture. It is considered of particular importance by both Tokelau and SPC because, at present, it is the only income-generating activity in Tokelau, outside traditional activities such as copra production and handicrafts. In addition, the project has significant potential application to many other isolated island communities in the region. It is hoped that the future success of this product will encourage other countries in the region to follow suit.



■ *Novel tuna products*

From the positive indications arising from the Tokelau project, it is obvious that there is a need to develop a broader range of products that the commercial operation in Tokelau can quickly adopt to extend its export market potential. The tuna jerky recipe mentioned at the beginning of this article is one example of an alternative and highly acceptable form of marinated dried tuna which can be eaten as a small snack. Discussions have begun with ACIAR (Australian Centre for International Agricultural Research) on a collaborative project to develop novel tuna products through the Department of Food Science and Technology, University of New South Wales, Australia. These value-added non-canned tuna products represent marketable products that the more isolated island communities can manufacture and export profitably.

WOMEN IN FISHERIES

The project is playing an increasingly active role in evaluating and supporting the needs of women from coastal communities in the region. Generally speaking, the role played by women in coastal fishing communities has been largely overlooked. Very few of the many development activities in fisheries have taken the needs of women from these communities into account.

■ *Women benefit from fishing*

There are many arguments in favour of women taking on new processing and marketing duties in fishing.

Smoking fish, for instance, is a simple process to implement where cold storage appears impractical. The same holds true for salting and drying fish. Widening the use of smoked, salted and dried fish has both nutritional and economic advantages. These techniques represent simple and relatively cheap means of processing fish, in keeping with low-cost, artisanal fishing techniques practised in Pacific Island fishing communities. They also provide local people with an opportunity to market their produce more easily.

In places where small-scale smoking, drying and salting of fish is carried out, women can be responsible for processing and marketing the produce, thereby earning income of their own. This would also encourage many women who occasionally go fishing for self-consumption purposes to increase their efforts and direct them to a commercial end.

Assistance to women's groups

The Women's Division of the Department of Home Affairs and Youth in Papua New Guinea recognised the important contribution made by village women in processing, distribution, marketing and sometimes harvesting of fish, and the problems faced by women engaged in these activities. It therefore requested the South Pacific Commission to organise a workshop on fish processing and marketing to cater for their needs.

The Papua Region Women's Workshop on Fish Processing and Marketing, which was held from 4 to 15 September 1989 in Port Moresby, with financial assistance from the International Centre for Ocean Development (ICOD), was the first activity of its kind in Papua New Guinea and indeed in the region. Technical assistance was provided by the FHPP, the Papua New Guinea Department of Fisheries and Marine Resources and the Fisheries Department at the University of Papua New Guinea, which also hosted the event.

Projects and demonstrations dominated the workshop timetable, in an attempt to show products that could be made for income-generating activities back at the village. Products manufactured by the women participants included improved smoked fish products; crab and shrimp products; minced fish products; salted fish; marinated dried fish; and simple insulated baskets made out of natural local materials to help store ice and chilled fish longer.



Following this successful workshop in fish processing and marketing, the Department of Fisheries and Marine Resources and the Women's Division indicated their desire to develop an ambitious programme to assist women from fishing communities on a national scale. The SPC Post-Harvest Fisheries Adviser went to Port Moresby in April to help draw up a project proposal to implement these plans. A number of broad activity areas were identified as a result of this visit. Solomon Islands and Vanuatu have also indicated their interest in being involved in similar schemes.

A post of Women's Fisheries Project Officer

Due to the large number of projects identified to support women from fishing communities, amounting to many months of technical assistance in Papua New Guinea alone, a proposal to establish the post of Women's Fisheries Project Officer within SPC's Fisheries Programme was endorsed by the SPC Twenty-second Re-

gional Technical Meeting on Fisheries and subsequently ratified by the South Pacific Conference. This officer will oversee the development and implementation of these projects within the Fish Handling and Processing Project, but also work in close collaboration with the Pacific Women's Resource Bureau. The officer will be responsible for satisfying requests for development projects for women-in-fisheries for the region, beginning with a sub-regional initiative for Melanesia. The position is presently under recruitment, with funding provided by ICOD for a period of two years.

TRAINING

During 1990 the Fish Handling and Processing Project planned training workshops in the Cook Islands, New Caledonia and Papua New Guinea.

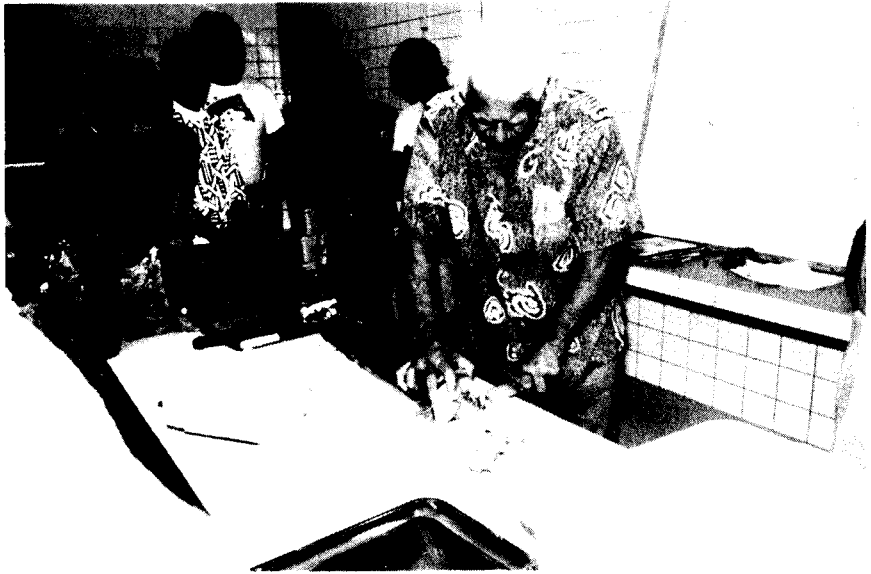
A training workshop was organised in the Cook Islands in June to instruct Rarotongan fishermen in the use of ice for chilling fish. Advice was also given to a fish retailer on

improving quality, fish displays and the production of value-added chilled products.

The Southern Province Fisheries Department of New Caledonia requested the assistance of the Project in organising a workshop in March 1991 for fish retailers intending to operate stalls at a new fish market presently being built in Noumea. A workshop outline was drawn up and advice provided on organisational matters.

The Project has been requested by the Surveillance and Inspection Section of the Papua New Guinea Department of Fisheries and Marine Resources to organise a workshop for fish inspectors responsible for examining all seafood products exported from Papua New Guinea, including frozen prawns, lobster, barramundi, dried beche-de-mer, etc. The FAO (Food and Agriculture Organization) in Rome has agreed to assist with the workshop through the INFOFISH office in Kuala Lumpur, under its Fish Inspection and Quality Control programme.

Regional training for the chilled fish sector is also being planned. This is a joint activity of the Fish Handling and Processing Project and the Regional Fisheries Training Project, to be conducted as a two-phased activity. Phase 1 will be a five-week workshop with technical and extension training and Phase 2 will include in-country follow-up, assisting the trainees with organising and running their own workshops.



VIDEOS

Training videos on chilling fish have been produced by the project and distributed around the region. English and French versions of the two training videos. (*An Icy Tale* and *A Chilling Story*) are available. The videos have been favourably received by member countries and were commended by international organisations. A funding proposal for the production of further training videos in this fish handling

and processing series is presently under consideration. The first video series was funded by ICOD.

The project also produces other information and training materials. The revised edition of *Beche-de-mer of the tropical Pacific* has now been finalised and is ready for printing. Work is proceeding on a *Field manual for seafood poisoning outbreaks*.

