Information paper

C-SPODP II project USP04 Aquaculture Training

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The C-SPODP-II USP04 Aquaculture Training project funded by Government of Canada has three main components:

- development of regionally- and gender-appropriate aquaculture training materials;
- development and conduct of regionally- and gender-appropriate in-country aquaculture training courses, and;
- training of regional personnel through training attachments.

The project began in 2001 with introduction of an undergraduate aquaculture course and has continued with in-service short-courses, community training, curriculum development of aquaculture training materials, and up-grading of USP facilities to offer training. It ends this year, with all activity to be completed by December 2004. The training activities have been held in Fiji owing to the presence there of a diversified aquaculture industry with a wide range of hands-on training opportunities, and the necessary regional dimension has been added by either bringing in participants from other countries or by training the USP students and recent graduates of other countries based in Fiji before they return to their home countries.

The USP04 project represents USP's main contribution so far to the regional aquaculture project being coordinated by SPC and implemented by SPC, USP and Worldfish Centre.

This information paper is an update of a previous paper which was prepared for Heads of Fisheries III (Information Paper 19 in 2003), and constitutes the project's final report to HoF IV in September 2004. Earlier activities that were described more fully in Information Paper 19 of HoF III are briefly summarised here.

Undergraduate course in aquaculture

The first major task of the project was to introduce a new course on aquaculture, MS324 Aquaculture in Pacific Island Countries, as an elective course for the degrees of BSc in Biology and BSc in Marine Science at the University of the South Pacific. The fourth offering of this course is now underway, and the 2004 class includes one fisheries officer from Kingdom of Tonga.

Short-course community and in-service training

The second phase of the project focussed on short-course "train-the-trainers" and community training in aquaculture of marine shrimp, freshwater prawn, tilapia, seaweed, and on economic models for aquaculture as planning tools. The training programme projected for 2004 in Information Paper 19 of 2003 had to be drastically reduced, however.

In February 2004 the Project Leader was informed by C-SPODP II project management that, owing to exchange rate losses of FJD against CAD during 2003, the remaining FJD budget for 2004 of FJD127,000 was in fact now FJD55,000. Training activity for 2004 thus centred on training attachments at USP, and on a single freshwater aquaculture training course in Fiji of three weeks duration run jointly with SPC and Fiji Fisheries.

Regional Training Workshop in Tilapia and Prawn Aquaculture, USP-SPC/Naduruloulou Aquaculture Station/ Montfort Fish Farm, Fiji, 10 – 28 May 2004
22 participants from Fiji, Vanuatu, Solomon Islands, Papua New Guinea, American Samoa, Samoa, Palau

Up-grading of USP aquaculture facilities

A saltwater shrimp *Penaeus monodon* hatchery has been established in the Seawater Laboratory at USP's Laucala campus and, when broodstock are in season, regional trainees can be attached to acquire micro-algae, brine-shrimp and *monodon*-larvae culture skills. The Seawater Laboratory facility is presently functioning as a freshwater prawn *Macrobrachium rosenbergii* hatchery, with post-larvae being sold to the Fiji private sector and being used to stock ponds at Montfort Boys Town near Suva.

USP is grateful to Fiji Fisheries Department for their on-going collaboration in freshwater aquaculture training and research, and for their provision of *rosenbergii* broodstock. Larger-scale production of larvae is now under-way to expand this training opportunity and to assist Fiji Fisheries in meeting the demand in Fiji for freshwater prawn post-larvae. The *rosenbergii* hatchery can operate year-round and can be used as a model facility for regional training attachments in *rosenbergii* hatchery training.

MSP, jointly with Institute of Marine Resources (IMR) is now looking beyond expiration of C-SPODP II funding support to continue operating this facility as a "model farm" that provides on-going education, training and research opportunities for the region. It is anticipated that prawn sales, successor-donor funding for aquaculture training workshops, and fee-paying international training attachees, can provide an income stream to continue operating USP's aquaculture facilities at their present level. Current development of a Fiji Fisheries Training School concept by Government of Fiji may provide an opportunity to link USP and Fiji Fisheries aquaculture infrastructure into a network of research and educational facilities of truly regional significance.

Training products

A **training video on *Kappaphycus* seaweed farming** was released in 2003, with soundtracks available in three languages available: English, Fijian and Solomon Islands Pidgin. This video has a technical "hands-on" focus, intended as a companion to the SPC seaweed video production filmed in Kiribati which promotes the benefits of seaweed farming. Copies were distributed to Fisheries Heads at HoF III, and additional copies are available upon request. The **FMC cottonii and spinosum seaweed handbook** by Erick Ask has been reprinted by kind permission of the author and copies are available upon request. A Solomon Islands Pidgin translation of this popular manual is also under preparation.

Jointly with SPC and DPI Queensland, the project held an Experts Consultation Workshop and from this has developed a CD-ROM of **Economic Decision Tools for Pacific Island Rural Commodities**. These are spreadsheet-based interactive economic models in which user data inputs generate values for economic indicators as predictors for success or failure of particular project case studies. Models have been developed for pearl, tilapia, freshwater prawn, marine shrimp, seaweed, artisanal fishing, copra, taro farming, rice and sugarcane. The CD can either enable improved project management for each of these commodities separately, or enable comparison of commodities to find out which might

provide the best livelihood in a particular locality. Copies are available from SPC upon request.

Courses run to date in this project have been treated as “pilots”, to work draft course materials into sets of training products that can then be used for future offerings beyond the present project. The remaining project activity for 2004 is development of these pilots into sets of training materials. This is being done jointly with the SPC Aquaculture Project staff.

The following training-course materials are now in preparation:

Tilapia Fry Production
Tilapia Site selection and Pond Construction
Tilapia Pond Preparation For Stocking
Tilapia Growout
Tilapia Marketing

Freshwater Prawn Hatchery Operation
Freshwater Prawn Pond Preparation
Freshwater Prawn Growout

Kappaphycus Seaweed Manual (FMC manual, already reprinted in English, being translated into Solomon Islands Pidgin)

Shrimp (*monodon*) hatchery production
Shrimp growout and pond management