SPC/Fisheries 20/Information Paper 20
3 August 1988

ORIGINAL : ENGLISH

SOUTH PACIFIC COMMISSION

TWENTIETH REGIONAL TECHNICAL MEETING ON FISHERIES
(Noumea, New Caledonia, 1 - 5 August 1988)

ICLARM ACTIVITIES IN THE SOUTH PACIFIC REGION: 1987-88

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The prime focus of ICLARM's work in the South Pacific Region over the past year has been the development of a new purpose-built giant clam hatchery at the Coastal Aquaculture Centre (CAC), Guadalcanal, Solomon Islands.

The hatchery became operational in Novewmber 1987 when the first spawnings of Tridacna gigas broodstock occurred. The CAC was officially opened on April 12, 1988, by the Hon. E. Alebua, Prime Minister of Solomon Islands. The first stage of the planned hatchery/nursery complex was completed in June, with the installation of the last eight raceways.

Aquaculture

Equipment installed and facilities constructed to date include an outdoor hatchery/nursery complex consisting of three fibreglasss broodstock tanks, four plastic-lined larval rearing tanks, five ferrocement settlement tanks and sixteen canvacon-lined raceways. The system is supplied with running sea water from a 4-inch pump powered by a Yanmar diesel engine, with a 2-inch pump in reserve. The intake line extends 40 m offshore and can be prefiltered at tyhe intake end.

The CAC has a small, but comprehensively equipped, laboratory, a power house with a 12 kva diesel generator, one staff house (and a second nearing completion), three single-bedroomed chalets (and a fourth part-completed), plus two cottages for resident caretakers.

Spawnings of giant clams occurred in November, January, February, March, June and July, with egg production far in excess of our holding capacity. At the end of July 1988 the CAC had about 10,000 eight-month old Tridacna gigas plus 45,000 4-6 month old juveniles. All five settlement tanks were fully stocked with one-month old juveniles with an additional cohort of one-wweek old juveniles in the larval tanks. The five settlement tanks are expected to produce at least 100,000 3-month old clams every three months. A portion of the oldest juveniles have already been moved to ocean nurseries.

Detailed analyses of the economics of hatchery and nursery operations are currently underway.

ICLARM's past work on giant clams has been done within the framework of a loosely organized network, the International Giant Clam Mariculture Project (IGCMP). However, ICLARM has recently

instituted three major aquaculture research networks, one of which is a Coastal Aquaculture Network (CAN). A major component of this will be a Giant Clam Research Group which will replace the existing IGCMP. The CAN has modest funding to support Visiting Scientists who wish to undertake collaborative work at the CAC and/or to visit other giant clam projects in the Region. ICLARM staff are also available on an expenses-only basis for consultative work with collaborating giant clam projects elsewhere in the Region. ICLARM has also started a Network of Tropical Aquaculture Scientists to complement its highly successful Network of Tropical Fishery Scientists. Participants in the existing giant clam network will be invited to join the NTAS.

Future plans for the CAC include the development of a series of ocean nurseries and growout systems in the Solomon Islands, operated in a variety of habitats, by groups ranging from individual entrepreneurs to village-based cooperatives. We also expect to be in a position to supply disease-free juvenile Tridacna gigas and Hippopus hippopus to countries in the Region where these species have become extinct. These clams will be raised under "clean" conditions in accordance with accepted international quarantine protocols,

A small product development facility will be created at the CAC to investigate a wide variety of methods of preparation and preservation of giant clam meat and muscle and the utilisation of the shells. Studies of current and potential markets for giant clam products will also be initiated.

Subject to funding the potential output of the hatchery is expected to be trebled within the next three years, with a target output of 750,000 one-year old clams per year. Work on giant clam genetics, selective breeding, physiology and pathology will be expanded.

Other priority plans cover the rearing of selected species of coral reef fish for reef ranching systems and other species of bivalve molluscs for coastal aquaculture. The reef fish ranching concept is based on two premises; that reef fishes are basically non-migratory and will not leave isolated reef systems which would thus constitute unfenced fish farms and that there exists a large surplus of unutilised food on a coral reef. Target groups include lutjanids, lethrinids, serranids and mullids. Research areas cover an enormous variety of topics, including species selection, maturation and spawning, rearing systems, stocking systems, predator control and behavioural studies. Studies of reef fish movements are also being implemeneted within the CAC's 4 ha protected reef leasehold. Preparatory work on reef fish ranching has been initiated.

Resource assessment and management

ICLARM's work on stock assessment in the Region has continued and many scientists within the Region are active members of the Network of Tropical Fishery Scientists and recipients of the network newsletter, Fishbyte.

Major activities have included assistance to Tonga in developing an assessment and monitoring programme for the multispecies, multigear fishery on the Tongatapu shelf and an assessment of the spiny lobster fisheries of Tonga. A Tonga Fisheries Division scientist will make an extended visit ICLARM's South Pacific Office for preliminary evaluation of the data collected to date.

When residential facilities are completed at the CAC ICLARM will be able to accomodate visiting scientists from within the Region for collaborative work or assistance in stock assessment.

Information

The Solomon Islands Fisheries Bibliography compiled by Mr. R. Gillett of the UNDP/FAO South Pacific Regional Fisheries Support Project has been converted to a Paperbase file for enhanced retrieval, searching, editing and expansion. Bibliographies prepared by Mr Gillett for other countries of the Region will be similarly converted. Bibliographies for selected groups of tropical resources, fishing gears and other topics will also being prepared in this format. At ICLARM headquarters in Manila a utility is being developed which will enable the inter-conversion of bibliographic files between Paperbase, Scimate and Micro-ISIS, three of the most widely used bibliographic/ referencing programs. This should be of much interest within the Region.

Fisheries Education and Training

Arrangements have been made whereby research staff, visiting scientists or other collaborators at the CAC might use a part of their work for higher degree theses of the University of the South Pacific. Recent developments at the Institute of Marine Resources at USP have been noted with interest and it is hoped that this will lead to a close and beneficial working relationship with USP staff and students.

Acknowledgements

Financial support for the development of the CAC in the past two years has come from the United Kingdom OVedrseas Development Administration, the Australia and Pacific Science Foundation, the Skaggs Foundation, the New Zealand External Aid Division and the Voluntary Service Oveseas organization, with substantial; additions from ICLARM's core budget (for which major contributors include USAID, AIDAB, UNDP, World Bank and the Governments of France, Denmark and Norway). Additionallly, we have had the wholehearted administrative, technical and material support of our principal collaborators in giant clam research, the Fisheries Division of the Solomon Islands Ministry of Natural Resources.