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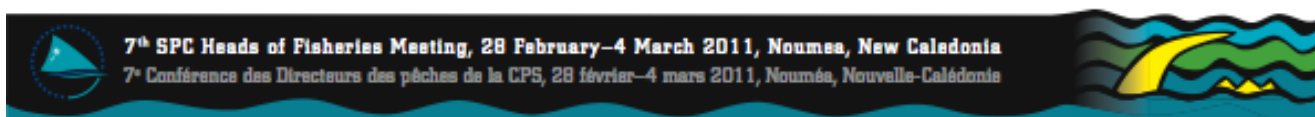
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**Regional Technical Cooperation Programme (TCP)
Project for selected Pacific Island Countries and Territories (PICTs)**

Food and Agriculture Organization of the United Nations (FAO) and
Secretariat of the Pacific Community (SPC)
Aquaculture Section

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Regional Technical Cooperation Programme (TCP) Project for selected Pacific Island Countries and Territories (PICTs)

Potential Project Title

Improving food security and rural income through aquaculture development in selected Pacific Island Countries and Territories (PICTs)

Participating Countries

Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, Solomon Islands, Tonga, Vanuatu

Time Frame and Duration: July 2011 to December 2012 (18 months)

Introduction

Role of aquaculture

Fisheries and aquaculture are widely considered to make important contributions to meeting the UN Millennium Development Goals (MDGs) of poverty reduction and food security¹ and can be a source of wealth creation, supporting national economic development. While the fish supply from marine capture fisheries appears to have reached a plateau, the demand for fish and fish products is rising. This increasing demand is being met by aquaculture (fish farming), with an average annual growth rate of 8% over the past two decades. Aquaculture is the fastest growing food producing sector in the world and currently accounts for almost 50 percent of the world's fish food supply.

Fisheries and aquaculture in the Pacific Island Countries and Territories (PICTs)

The PICTs have relatively few opportunities to generate income. The economies of most PICTs are limited due to small landmasses, few terrestrial resources and low numbers of inhabitants. To ensure further development, island nations must make the most of the one important resource they all have - the sea. Currently, the PICTs are deriving major inputs to their economies by fishing for tuna, or by selling access rights to tuna, within the large maritime zones under their control. However, valuable, sustainable harvests are also possible from inshore waters and coral reefs. While aquaculture is practiced in the PICTs, it is still very limited and there is room for expansion.

Aquaculture development in the PICTs

Aquaculture is a relatively new development in the region. Its history goes back less than 30 years. There is no traditional knowledge for culturing fish and shellfish, just catching them, except in very

¹ Fisheries and aquaculture contribute to several of the MDGs, in particular MDG 1 (Eradicate poverty and hunger); MDG 4 (reducing child mortality) and MDG 7 (Ensure environmental sustainability).

specialized instances and areas. There is limited resource of aquacultural skills or infrastructure available at present.

Despite the comparatively minor penetration of aquaculture into PIC economies, and despite the loss of interest by most of the international development community after many short-term project failures, several Pacific Island governments have accepted the challenge. They recognize that expansion in capture fisheries is limited, and have made substantial investments in freshwater aquaculture and mariculture, often in concert with external sources of development assistance.

Although aquaculture is currently of little commercial significance in the region, there is some development in some islands, although commercial sustainability is yet to be achieved except in a few cases the culture of giant clams (*Tridacna* sp. and *Hippopus* sp.) for the aquarium trade and the farming of pearl oysters (*Pinctada margaritifera* and *Pteria penguin*). Shrimp (*Penaeus* spp.) farming has been a focus of commercial development in several islands over the past 30 years, with varying degrees of success; tilapia (*Oreochromis niloticus*) aquaculture has entered the subsistence economy in some areas; milkfish culture is well established in a few island nations and is enjoying renewed interest in others as an acceptable substitute for higher priced marine fish (that at any rate are getting scarcer), carp culture in small holdings is well established in Fiji and Papua New Guinea but, along with tilapia, could be developed for an integrated crop-livestock-fish system to produce more food, and seaweed (*Kappaphycus* spp.) is considered a future commercial export prospect by the region. The culture of other marine (grouper, siganid, mullet) and freshwater species (*Macrobrachium lar*) is generally, however, still at the experimental or “backyard” stage.

Several new species with significant commercial interest, particularly for international markets are being identified and experimented in several PICs. They include sea cucumber (*Holothuria scabra*), sea bass (*Lates calcarifer*), grouper (*Epinephelus coioides*, *E. fuscoguttatus*), rabbitfish (*Siganus lineatus*, *S. argenteus*) and also some ornamental species including corals. Similarly, several PICs have begun to venture aquaculture, both freshwater and marine, for food security, particularly for the locals as well as to cater to the tourism industry. However, these ventures are still at its infancy and continue to experience constraints and face challenges.

As PICTs are becoming increasingly interested in aquaculture development, most of the countries have enacted national policy on aquaculture development and the formulation of national strategies and plans to implement the policy. Some countries have a more specific commodity development plan. Apart from their intrinsic value as a guide for managing the development of the sector, these give an encouraging signal for private sector investment: that their investment would be secure and protected: the rules are clear, predictable and can be relied on for long-term planning. However, there is so far no significant investment made into aquaculture development in the region. Nevertheless, there are very few commercial aquaculture activities. Operations have been either government or private invested targeting the export market. These new developments, initiated without proper planning, although might generate income, do not appear to have a long term vision and sustainability and may even result in negative impacts on the environment.

Constraints for aquaculture development in the PICTs

In the PICs, most of the culture species proved to be technically feasible but failed to fulfil commercial expectations and over the years, development strategies for the sector were intensely focused, as well as at times repetitive, on the research and development phase so that resources soon became

insufficient for scaling up research and development results into commercial application or attention was diverted from the other essential requirements of economic viability particularly market access, market development, and competitiveness.

There are several issues which impede aquaculture development in the PICTs. Although considered as a “least aquaculturally developed” region, PICTs has a vast aquatic resource potential and fish for food security will be urgently needed to fill a growing “fish gap” driven by population growth and climate change.

One of the constraints is the contradiction between the goal of food security, which the region’s governments have unanimously embraced and are working towards meeting it, and the concern for biosecurity. All PICTs are surrounded with pristine marine environment, thus reducing impacts on the ocean and marine fishery, maintaining biosecurity and conserving biodiversity are important national aspirations. Capacity in biosecurity to safeguard aquaculture potentials is lacking in the region. Developing aquaculture, with minimum environmental perturbation is a challenge and the PICTs seek strong technical assistance from FAO for this.

Although most PICTs have national aquaculture development plans, strategies and legal and institutional capacity in place, the technical competence and capacity for conducting aquaculture is considerably low. Currently, there is little technical capacity in producing necessary seed for aquaculture production available in the region.

PICTs are now entering into international trade of certain aquatic products, of which some are live, such as giant clam, corals and marine ornamental fish species. While trading of these species bring significant income to the countries, the lack of a good biosecurity programme, including measures to prevent the introduction or spread of potential Trans-boundary Aquatic Animal Diseases (TAADs), will hinder the ability of PICTs to trade healthy and safe products to access profitable international markets.

As the PICTs are now embarked on aquaculture development regionally there is a clear need for establishing a network to assist in information sharing and collective decision-making towards better management of the sector. Such a management information network would facilitate effective dialogue and exchange of information among PICTs as well as collating and disseminating vital data and information both from the region and outside.

Regional capacity for information generation and exchange, in addition to technology exchange and adaptation are underpinned by national capacities for information and statistics. National and regional capacities are currently weak (or even non-existent) for aquaculture in a number of PICTs, thus a focus on aquaculture statistics is also important.

Proposed assistance to PICTs under the RTCP

The following areas are considered priority:

- Building technical and human capacity on broodstock development, hatchery seed production of selected species.
- Strengthening of national capacities for information and statistics in aquaculture.
- Developing national biosecurity frameworks including policy, legal and institutional arrangements

Activities

- Regional project inception workshop
 - Discuss project implementation and
 - Establishment and implementation of regional aquaculture network for information and data sharing and communication
- National reviews on relevant subject areas in selected countries
- National training workshop on seed production and breeding of sea cucumber species
- Regional training workshops on (back-to-back)
 - Aquaculture information and statistics
 - Development of national and regional aquatic biosecurity frameworks
- Project terminal workshop