

# Small-Scale Aquaculture Development Project in South Thailand : Results and Impact



SMALL-SCALE AQUACULTURE DEVELOPMENT PROJECT  
IN SOUTH THAILAND: RESULTS AND IMPACT

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This report discusses the results and the impact of a (i-year BOBP-assisted project (March 1979-July 1985) for small-scale aquaculture development on the south-west coast of Thailand. An earlier report (BOBP/REP/14) discussed the outcome of the project's first phase, from March 1979 to September 1981.

The project work encompassed several components in three main areas-aquaculture, community development and activities for women. The project began 1979 in a single province: Phang Nga. At the time of termination, it covered six provinces in south Thailand.

This report critically assesses the project's performance and the impact generated by each component. It is based on a review of project documents such as progress reports, project preparation and assessment reports, as well as on interviews with fisheries officers, small-scale fisherfolk and large-scale fish farmers in eight selected villages in Satun, Trang and Phang Nga provinces, carried out over a period of two weeks in October 1985.

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The Thailand project, and this paper which reports on it, are activities of the small-scale fisheries project of the Bay of Bengal Programme. This project began in 1979 and covers five countries bordering the Bay of Bengal — Bangladesh, India, Malaysia, Sri Lanka and Thailand. Funded by SIDA (Swedish International Development Authority) and executed by the FAO (Food and Agriculture Organization of the United Nations), the project seeks to develop, demonstrate and promote appropriate technologies and methodologies to improve the conditions of small-scale fisherfolk in member countries.

This document is a technical report and has not been officially cleared by the Government concerned or by the FAO.

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## 1. SUMMARY

The BOBP-assisted small-scale aquaculture development project of South Thailand began 1979 in Phang Nga province. It was later extended to some other provinces, and terminated in 1985.

The project aimed at developing coastal aquaculture as a viable occupation for small-scale fisher-folk in the region, who had been affected over the years by decreased catches and at improving the living standard of small-scale fisherfolk through improved fish processing, handicrafts, family care, education and village infrastructure building with voluntary labour.

The project's performance and the impact it generated are summarized below:

- *Finfish cage culture*, the project's main component, generated good impact. Beginning with only 28 fish cage demonstration farms in 1979, the project gained wide acceptance, and expanded to cover 3600 cages operated by more than 1000 fishermen in 1985. Apart from generating higher incomes, new income-earning opportunities were created in subsidiary activities such as capture of fish fry and fish supply. One negative result of cage culture, however, was the fact that it attracted absentee owners who hired small-scale fisher-folk as labourers for feed preparation, night-watch, cage maintenance and seed supply. There was no system built into the project to prevent this.
- Of the project's shellfish culture components (cockle, mussel and oyster), *cockle culture* produced limited impact. Though cockle culture was demonstrated in only one farm (of 0.3 ha area) for a year, a number of private farms were rapidly established in the project area. By November 1985, a total water area of 280.3 ha was under culture. However, cockle farming has almost wholly attracted only businessmen and large entrepreneurs, mainly because it depends on illegally imported seed in the project area. Only businessmen with sufficient capital and connections can incur the risk of procurement. Small-scale fisher-folk benefited only marginally as labourers on these large-scale cockle farms.
- The results from oyster demonstration farms were not encouraging enough to attract people to invest in *oyster culture*. Yields were low, as were prices, and marketing channels could not be developed because of insufficient production.
- *Mussel culture* met the same fate as oyster culture, because of the high cost of spats and low production.
- Of the project components directed at fisherwomen (*fish processing, handicrafts training and education*), the first two had little or no impact. Women trained in techniques to produce higher quality shrimp paste did not apply them, as consumers in the area preferred cheaper ordinary paste. As for the education component (on health, family planning, nutrition and hygiene), it is too early to judge, since it was introduced only during the project's second phase in 1984.
- The community development approach to infrastructure building -with the project providing the funds and the community some voluntary labour-enjoyed only limited success. It seemed easier to get the fisher-folk to contribute money than voluntary labour. Jetties, a shallow well, a windmill-driven water pump, a small water tank, a large rainwater tank, repair of a walkway-these were the facilities provided. Voluntary labour was forthcoming only for a few of these facilities.

Generally, the project's aquaculture components achieved better results than the other components. Apart from the reasons already cited, this could be because of the detailed preparation and planning that went into the aquaculture components.

## 2. INTRODUCTION

The rapid development of demersal trawling in Thailand from the mid-1960s resulted in the over-exploitation of demersal resources in the Gulf of Thailand. Within a short time, the inshore resources off the Andaman Sea coast were also over-exploited. The proportion of high value species in the catch declined drastically and there was drop in both the total catch and the catch per unit effort. This development significantly reduced the earnings of small-scale fishermen. The small-scale fisherfolk communities in remote villages, where opportunities for alternative employment were limited, were the most seriously affected.

To help the small-scale fisherfolk, the Government of Thailand, through its Department of Fisheries, decided to promote coastal (brackishwater) aquaculture as a viable alternative or supplementary source of income.

In 1978, the Thai Department of Fisheries, in collaboration with the FAO/SI DA project "Development of Small-Scale Fisheries of the Bay of Bengal" and the FAO/UNDP South China Sea Fisheries Development and Coordinating Programme identified a suitable area in the Phang Nga province for a pilot project to test and demonstrate appropriate technologies for brackish-water aquaculture. The area selected is characterized by dense mangrove vegetation with many stream systems flowing into the bay; it seemed a suitable environment for coastal aquaculture. It contains a number of remote villages in which the majority of the population are small-scale fisher-folk hit by reduced earnings from fishing.

Apart from coastal aquaculture demonstration, the pilot project incorporated components on fish processing, handicrafts training and infrastructure development and — during the last phase- education of fisherwomen in health care and family planning.

Preparatory activities were undertaken before and immediately after the commencement of the project in March 1979. They were:

- three site surveys undertaken in November 1978, May 1979 and April 1980 by the professional staff of the Brackishwater Fisheries Division of the Department of Fisheries. These surveys related to the finfish and shellfish species suitable for culture, the hydrological parameters and the suitability of aquaculture demonstration sites;
- a benchmark survey on the socio-economic conditions in six project villages, undertaken between April and July 1979 by a consultant;
- a survey of the suitability of two aquaculture demonstration sites, undertaken in August 1979 by a consultant.

Details of these surveys are contained in an earlier report (BDBP/REP/14) on the first phase of the project.

The ultimate objective of the project was to improve the living standard of small-scale fisherfolk in depressed coastal fishing communities.

***The immediate objectives were:***

- to provide a viable alternative source of income or a supplementary source of income for small-scale fisher-folk;
- to develop a model for an expanded development effort in the rural fishing sector.

To achieve these objectives, the following operational targets were identified. They were:

- “(a) the establishment of appropriate aquafarming, cage, raft or pilot units in the project area complete with all necessary facilities to rear finfish fry or fingerlings and/or other suitable commercial organisms to marketable sizes;
- (b) the practical demonstration of aquafarming techniques at the village level;

- (c) the provision of assistance to strengthen and expand the activities of village cooperatives as a means to manage and operate the aquafarms, initiate collective marketing and provide other essential common services to the villages;
- (d) the demonstration of improved village-level fish processing techniques;
- (e) the training of villagers in the technology involved in all the project components; and
- (f) assistance in the acquisition of loans and/or grants to expand operations and provide basic facilities for improving local living standards.<sup>1</sup>

The project was implemented in six selected villages in the Phang Nga province during the initial phase, from March 1979 to September 1981. On the basis of the experiences gained during the first phase (reported in BOBP/REP/14), project activities were continued for three more phases : the second from 1981 to 1982, the third from 1982 to 1983 and the fourth from 1983 to 1985. They were also extended to cover more villages in the Phang Nga province and villages in the Satun, Trang, Krabi, Phuket and Ranong provinces. Prior to expansion in the new provinces, surveys of potential aquaculture project sites were undertaken by the professional staff of the Brackishwater Fisheries Division.

Thus, at the termination of the project in September 1985, activities were spread over all six coastal provinces bordering the Andaman Sea (see map in Appendix 1 and Tables 1a-1d).

The project was executed throughout its lifetime by the Department of Fisheries, Thailand. BOBP provided financial support and assistance in planning and monitoring the project. More details about the organizational structure of the project are given in Appendix 2.

<sup>1</sup>Letter of Understanding between the Fisheries Department of Thailand and South China Fisheries Development and Coordinating Programme (SCSP), Manila, Bangkok, 1979 (unpublished).