

Introduction

Communities of small-scale fishermen in the Philippines have benefited only marginally from rural development programs since the main thrust of government policies and programs historically has been in the agricultural sector. Yet small-scale fisheries contribute over 50% of fishery production and employ 600,000 to 700,000 persons, or about 90% of those engaged in Philippine fisheries.

Since 1977, when the Integrated Fisheries Development Plan was formulated by the FIDC, municipal fisheries have been receiving increased attention and concern from government planners. Recent attempts to improve the income levels of municipal fishermen have included a variety of financing schemes, the formation of associations and cooperatives, and extension work by the Bureau of Fisheries and Aquatic Resources (BFAR).

Unfortunately, results of these efforts have not been encouraging. Repayment rates under the various credit programs have averaged less than 10% and very few of the cooperatives (Samahang Nayons) formed since the early 1970s remain viable.

San Miguel Bay Area

The coastal barrios, or villages, surrounding San Miguel Bay are a source of supply for dried fish, primarily anchovies, croaker and various small flatfishes. Many fishing households engage in fish drying and the processing of fish paste, or "bagoong."

The bay, and places mentioned in the text, appear in the map, p. 16.

San Miguel Bay is an area designated by BFAR as overfished. Conflicts are increasing among the various gill net and trawl users in the bay. Municipal gill-netters particularly criticize commercial trawlers for illegally fishing within the 7-fathom mark, and have filed complaints with the national government.

Under existing legislation, most of San Miguel Bay, which nowhere exceeds 10 fathoms in depth, falls

The ICLARM-IFDR Multidisciplinary Study of Small-Scale Fisheries of San Miguel Bay, Philippines



within the fishing grounds of municipal, not commercial, fishermen. At the present time, the status of the resources is still being debated, and the extent of illegal commercial trawling within the bay is not documented. No intensive stock assessment work has been done in the area since the 1950s.

The typhoon season (August to November) has a major influence over capture fishing activity in the bay. There is some evidence of out-migration of fishermen at this time, and most coastal barrios have areas known for their transient residents. This mobility has important implications for alternative income programs.

A 1974 survey found that slightly

over half of the fishermen interviewed in the Calabanga area would like household leases on a fishpond estate proposed near the mouth of the Bicol River. This willingness to shift out of current activities was much higher among fishermen than among agriculturalists who were also interviewed.

If indeed the "open-access" fisheries resources of San Miguel Bay are overexploited, programs that seek to motorize bancas and improve fishing gear will be counterproductive. Improvements in the marketing system and stimulation of alternative activities for the municipal fishermen would be more promising avenues for programs

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Far left. Selling a mixed catch from San Miguel Bay—crabs, squid and fish. Center top. The research station and staff at Cabusao. Center lower. Much of the fish catch is sun-dried. Above. Small fishing craft, or bancas, are still carved from tree trunks.

to increase household incomes in the fishing communities of San Miguel Bay.

Presently underway are two major government programs of potential benefit to San Miguel Bay fishermen. The first is the Mercedes Area Marketing Cooperative, with 13 member-Samahang Nayons. It is making experimental shipments of iced and dried fish to Manila and encouraging the use of ice and fish storage boxes. The recent fuel price increases (to US\$0.59/l) and the overfishing problem have hampered attempts to expand fishery production.

The second program is an integrated

area development plan coordinated by the Bicol River Basin Development Program (BRBDP).

The BRBDP actually covers several provinces but its primary focus is to expand the area of irrigated rice production, including the municipalities of Calabanga and Libmanan along the basin of the Bicol River, which empties into San Miguel Bay. Thus the program's activities are almost to the backdoor of the coastal communities on San Miguel Bay.

A secondary emphasis of the program is on infrastructure, especially on roadworks. However, some areas remain reachable only by boat or narrow trails.

The coastal fishing communities are not specifically included in the integrated development plan for the Bicol region.

Project Rationale

Since the fishery resources, on which the coastal barrios of San Miguel Bay depend, may be overfished, and 1950's stock assessment data are available for comparison, ICLARM and IFDR decided to mount a 2-yr research project to examine the fishery resources and socioeconomic conditions around the bay and to help the fishing communities become part of the integrated BRBDP area development plan.

Research Objectives

There are four distinct yet complementary aspects to this ICLARM-IFDR research program: 1) stock assessment, 2) economics of production and marketing, 3) social and demographic characteristics of the fishing communities (sociology) and 4) an assessment of occupational and geographic mobility among fishing households.

The four research activities are coordinated by an IFDR-ICLARM research committee, headed by Prof. Antonio Mines, IFDR director.

Specific research objectives are as follows:

- Stock assessment: To assess the status of the fishery resources of San Miguel Bay.
- Sociology: To assess the socioeconomic development of the six San Miguel Bay municipalities, and to analyze in selected communities, social and external linkages, attitudes and preferences toward fish production, processing, and marketing.
- Economics: To determine catch, effort and incomes of municipal fishermen, costs and returns for the major municipal fishing gears and the economic efficiency of the marketing and distribution system.
- Mobility: To examine the nature of the flow of human resources between municipal fisheries and other rural sectors, and to assess the potential of programs that seek to reduce the dependence of fishing households on capture fishing.

Project Progress

The project began in November 1979 when the local parish priest blessed the house-research station built for the research teams near the municipal center of Cabusao.

Six research assistants—Luz Yater, Amerlia Esporlas, Anita Villegas, Neri Supanga, Estrella Tulay and Francia Yater—are based here.

The Cabusao house also serves as a base during visits of the project's senior staff. They include Domingo Pamulak-lakin, who is field officer for the project and heads the sociology team with advice from Dr. Gabriel Alvarez of the University of the Philippines College of Business Administration; Gregorio Bañacia, a researcher who heads the economics team with Dr. Ian R. Smith of ICLARM, and Prof. Tony Mines, who heads the biology team (besides being overall project coordinator) with Dr. Daniel Pauly of ICLARM.

The first phase of the project is now complete. The sociology team

has completed collection of macro-level data from the six municipalities and is ready to initiate a household survey in approximately 20 selected barrios.

Data collection during the second phase will be based on interviews using carefully designed and pretested questionnaires, supplemented with "qualitative" data from personal observations and interactions with members of the host communities.

The economics team which, in the first phase, was collecting daily price data from landings in Castillo and Barcelonita and from the nearby market towns of Libmanan and Sipocot, is expanding its activities to include daily catch, effort and costs and returns data from a sample group of gill-netters and "baby" trawlers. In addition, secondary price data will be collected from the Philippine Fish Marketing Authority in Mercedes and Naga City.

The biology work during phase one has been undertaken by Jan Michael Vakily, a graduate student from Kiel

University in West Germany. To supplement this data, the IFDR plans to do experimental trawling work with its research vessel, *R/V Albacore*, in the San Miguel Bay area. Biology data collection will continue in phase two under the direction of Elviro Cinco of IFDR.

The second phase of the project also marks the initiation of the mobility study, under the direction of Dr. Conner Bailey.* Among other objectives, this study will assess how other sectors (e.g., agriculture, petty-trading and manufacturing) can absorb labor from the fishing sector, and the willingness of fishing householders to consider such other livelihoods.

The mobility study will be undertaken in close cooperation with the sociology group, using a single research team.

The second phase of this project continues until early 1981. The sociology, economics and mobility aspects are closely related and certain key questions (e.g., access to and ownership of boats and gear) are being asked in a systematic manner by all three research teams in the various communities in which they are operating.

This wide geographical spread of the research project will enable each team to recognize patterns and regularities which might otherwise be missed and provide a comparative context for their work. The economics team will provide data on the seasonal nature of fishing within San Miguel Bay, which is likely to have a direct bearing on short-term migration patterns of fishermen.

The findings of the stock assessment and the mobility studies are of central importance in deciding what degree of emphasis, if any, should be placed on programs which encourage the movement of small-scale fishermen into other economic sectors.

The project will produce several interim reports and will culminate in a consolidated joint publication by ICLARM and IFDR in late 1981.

*See staff profile, p. 2.

