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TRADITIONAL FISHERIES DEVELOPMENT IN THE PHILIPPINES[1]

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The following article is based upon published research and secondary data. Particularly with regard to stock assessment, considerably more research on an area specific basis is necessary.

Photograph courtesy of Francis T. Christy, Jr.

Introduction

THE APPROACH of the Philippine government to fisheries resources is evolving from one of 'development' to one of 'management'. The purpose of this paper is to report on a recently completed Philippine municipal fisheries research review (Smith et al. in press) that supports this shift in emphasis. The review was conducted jointly by the International Center for Living Aquatic Resources Management (ICLARM) and the Fishery Industry Development Council (FIDC), Ministry of Natural Resources, Manila. The term municipal fishermen most closely approximates the common worldwide terms of small-scale, artisanal or traditional fishermen. Using vessels of 3 t or less, or gear not requiring boats, they fish in both marine and inland waters.

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The interdependence between fishermen and fisheries resources is obvious. Short-term perspectives, however, often overlook how fragile this interdependent relationship is. For example, at a recent symposium on marine conservation, evidence was presented of widespread coral-reef destruction in the Philippines (Marine Sciences Center 1979). Much of the deterioration of this marine coastal resource has been caused by siltation and pollution, but a larger amount was found to be caused by the actions of fishermen themselves. Dynamite fishing, use of sodium cyanide, inshore trawlers, and traditional drive-in nets with their stone-weighted scare lines all contribute to destruction of the coral reef environment which is estimated to be the source of up to 20% of Philippine municipal catch (Carpenter in press).

While reef resources are receiving increased attention, they are only part of the resource problem as it affects traditional municipal fishermen in the Philippines. Contrary to earlier points of view that almost unlimited resources were available to municipal and commercial fishermen, there is increasing evidence of overfishing in many traditional fishing grounds and, at best, of a levelling off of nationwide marine and inland municipal fisheries catch (DAP 1977).

Simultaneously real incomes of the traditional fishermen are deteriorating. Recent socioeconomic survey results show average cash income levels for municipal fishermen to be roughly half the poverty thresholds established by the Development Academy of the Philippines (DAP) (Abrera 1976. Rapid inflation since 1972 has been a major cause of declining real incomes (IBRD 1976), exacerbated primarily by increased fuel costs.

Two findings of the FIDC-ICLARM review stand out above all others: first, the municipal fisheries resource is in most likelihood fully exploited; and second, municipal fishermen express a high degree of willingness to shift from fishing to alternative activities.

Technology

The one-half million Philippine municipal fishermen rely on approximately 250,000 vessels ('bancas') of which slightly less than half are motorized. As in other parts of the world, programs aimed at raising municipal fishermen's income levels have emphasized application of standardized, production-oriented technology to upgrade vessels and gear. To facilitate upgrading, credit in excess of ₱340 million (US$46 million) has been extended to individuals and groups of fishermen over the past several years. Repayment rates have been extremely low, ranging from 10% to 34%. In response a program designed to account for locale-specific resource and socioeconomic variations (Fig. 1) will place the burden upon the Bureau of Fisheries and Aquatic Resources (BFAR) for loan supervision, and upon

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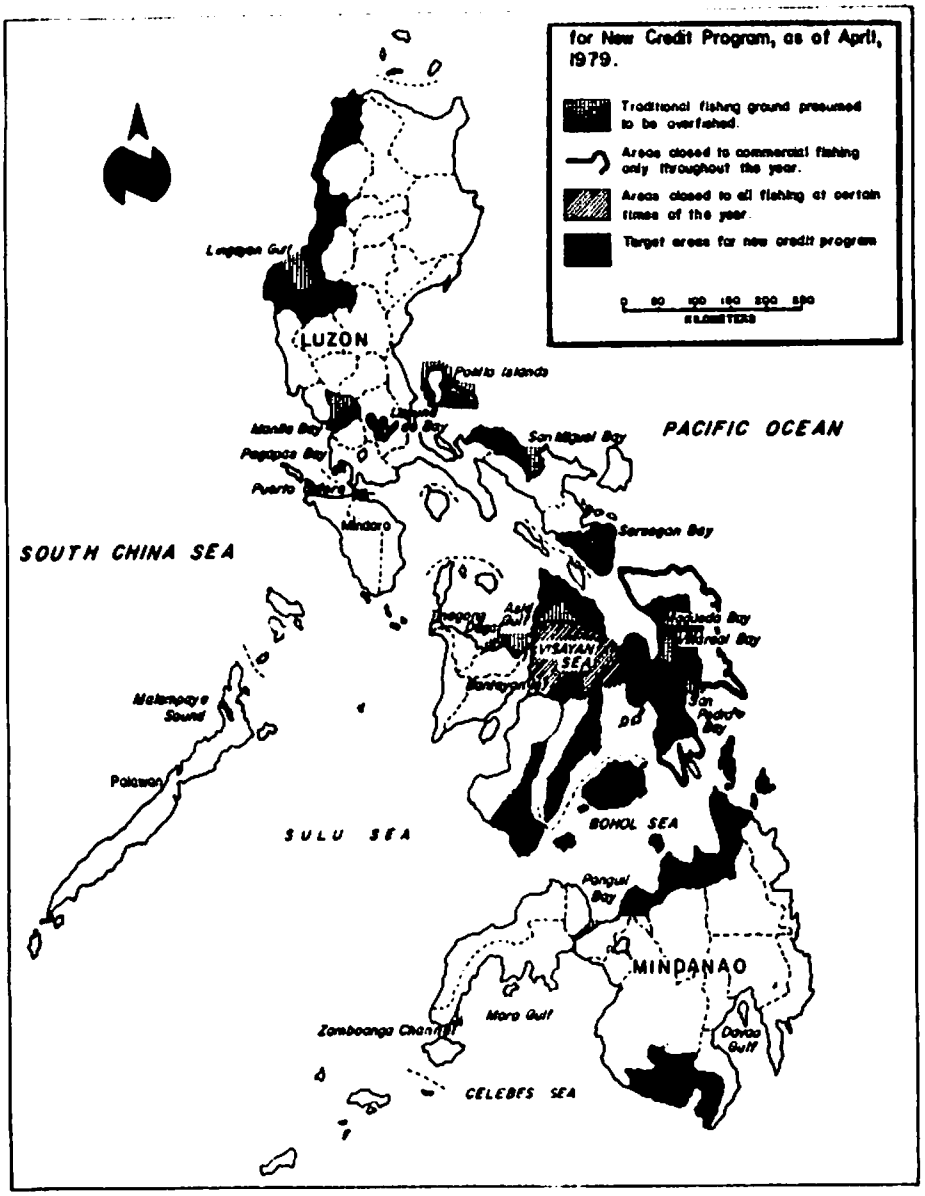

Fig. 1. Overexploited traditional fishing grounds in the Philippines, fishing effort restrictions and target areas for new credit program, as of April 1979.

cooperatives for loan guarantee and marketing. A measure of the extreme difficulties this program potentially faces is that despite a decade of organizational effort, there are presently only eight fishing cooperatives in the country. An alternative approach being implemented by the DAP relies on formation of fishermen's associations and group purchase of larger vessels, thus essentially transforming municipal fishermen into commercial fishermen. However, with resource limitations, only limited numbers of fishermen can be accommodated by more capital-intensive technological transformation. These production-oriented approaches are characteristic of fisheries 'development', as distinct from fisheries 'management.'

Fisheries Resources

Based on continental shelf area and estimates of average productivity per km^2, Kvaran (1971) estimated municipal fisheries maximum sustainable yield (MSY) to be 650,000 mt. Through sampling at municipal fish landings, the BFAR (1979) reported 1977 marine and inland municipal fisheries catch of 712,514 mt and 162,420 mt, respectively, totalling 875,000 mt, or 58% of Philippine fisheries and aquaculture production in that year. Other estimates of municipal fisheries production, based on consumption surveys for the 1970-1975 period have resulted in a higher estimate, averaging 950,000 mt, and more importantly, indicating a levelling off of municipal catch (DAP 1977). Given these recent production data, either Kvaran underestimated the potential or the sustainable yield has already been surpassed. The designation by BFAR of an increasing number of traditional fishing grounds as overfished based on declining yields lends support to the latter conclusion. (Fig. 1).

Socioeconomics

The production and distribution sectors of municipal fisheries are linked through an elaborate web of interpersonal relationships, generally called "suki." "Suki" has mutually beneficial aspects, but municipal fishermen are often indebted to middlemen and boat owners, particularly at non-peak fishing periods. The belief that fishermen would prefer and benefit from an alternative marketing arrangement has led to an increased emphasis on developing marketing infrastructure and institutions. The FIDC-ICLARM review found evidence in several community studies to support the point of view that fishermen themselves are receptive to change, both in production and marketing.

In fact, almost 50% of municipal fishermen in 16 fishing villages surveyed since 1976 indicated their willingness to change their occupation from fishing; 30% were willing to change their location. Potential occupational mobility thus appears to be higher than potential geographic mobility. Regarding underlying attitudes, it was found that 65% of municipal fishermen are generally dissatisfied with their family condition and only 1 in 5 believed that his personal living standard was better than 5 yr earlier.

A matrix of correlation coefficients

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The smiles tell it all – the night's catch was good.

among relevant socioeconomic indicators found that desire for occupational change is highest in those fishing villages characterized by lower income levels (r = .70*), by lower percentage of boat ownership (r = .70*), by lower levels of fishing effort (r = .74*), and by younger fishermen (r = .82*). Importantly, desire for occupational change was highest in those communities with the highest percentage of households dependent upon fishing (r = .75*).

There is both an opportunity and a potential stumbling block here. On the one hand, the high degree of latent occupational mobility should encourage those promoting alternatives; on the other hand, it is the marginal, not the more successful fishermen, who are most willing to change, located moreover, in the more geographically and/or economically isolated communities where fewer alternatives presently exist. Those seeking a change are the younger, poorer, less well educated ones, in actuality probably less able to assume the risk that a new activity implies. The key to capitalizing on these positive attitudes is therefore supplementing rather than replacing the fishing activity; that is, encouraging full-time fishermen to become part-time fishermen.

Implications for Management

Because of overfishing of these open access common-property resources, steps are being initiated by the Philippine government to restrict fishing effort. In other words, a 'management' dimension is beginning to supplement the 'development' dimension in planning efforts. This shift in emphasis is crucial because it means that a long-term rather than short-term perspective is developing.

A short-term perspective of municipal fishermen problems places an emphasis on 'development' rather than 'management' of the resource. It seeks solutions to reef destruction, for example, by legislating against symptoms (e.g., dynamite fishing) rather than dealing with underlying causes. The poverty of municipal fishermen who resort to blasting caps, sodium cyanide, and small-mesh nets to satisfy daily food requirements, demands a long-term 'management' approach that paradoxically places emphasis on reduced fishing effort.

Reductions in fishing effort can be achieved either through dis-incentives or incentives. Examples of dis-incentives already in effect include restrictions on certain types of vessels or gear and closed seasons. In response to conflicts between municipal fishermen and trawlers, vessels in excess of 3 gt are excluded from waters within 7 km of the coasts of Samar, Leyte, and Sorsogon provinces. The Visayan Sea is closed to fishing for sardines, herrings, and mackerels from November 5 to March 15 (Fig. 1).

Incentives, on the other hand, include alternative income sources sufficiently attractive to reduce full-time fishing. Seaweeds, oysters, and mussels in marine waters and cage culture in inland waters are seen as the most promising fisheries related activities. Rural development schemes that might stimulate opportunities outside fish capture and culture are still in their infancy.

Failure to emphasize and experiment with incentives aimed at reducing fishing effort will lead either to continued depletion of coastal and inland fisheries resources, or to necessary adoption of more drastic dis-incentives and consequently more rapid displacement of large numbers of marginal fishermen. Both results further impoverish municipal fishermen. Municipal fishermen appear to welcome the potential benefits from incentives that a 'management' rather than a 'development' approach would bring, and encouragingly, the first steps have been taken in this direction.

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*significant at 5% level.