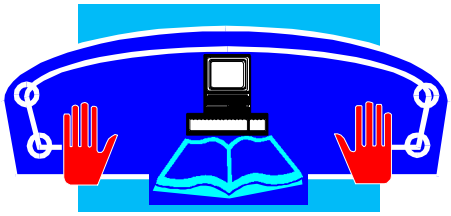

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TRADITIONAL FISHERIES DEVELOPMENT IN THE PHILIPPINES

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ABSTRACT

As in other parts of the world, development programmed aimed at raising income levels of the half-million Philippine traditional municipal fishermen have emphasized production-oriented projects designed to up-grade vessels and gear. However, a revievof recent biological, technical, and socio-economic research provides evidence that technology-based efforts have generally not been successful, and that the coastal resources fished by municipal fishermen are not as extensive as previously supposed. This paper argues the case for municipal fisheries development and management programmed that encourage reductions rather than increases in fishing intensity.

Reductions in fishing effort can be achieved through either disincentives or incentives. Examples of disincentives include restrictions on certain types of vessels or gear, closed seasons, or other forms of limited entry. Incentives, on the other hand, include development of alternative income sources sufficiently attractive to induce fishermen away from fishing. It is argued that failure to emphasize and experiment with incentives will lead in the future either to adoption of more drastic disincentives and consequent displacement of large numbers of marginal fishermen, or to continued depletion of the coastal fisheries resource, and thus to further improverishment of the municipal fishermen who depend upon such resources for their livelihood.

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 nest closely approximates the common worldwide terms of small-scale, artisanal or traditional fishermen. Using vessels of 3 tons or less, or gear not requiring boats, they fish in both marine and inland waters.

The interdependence between fishermen and fisheries resources is obvious. Short-tern perspectives, however, often overlock 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 (MSC, 1979). Much of the deterioration of this marine coastal resource has been caused by siltation and pollution, and also by the actions of fishermen themselves. Dynamite fishing, use of sodium cyanide, in-shore 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 that affects traditional municipal fishermen in the Philippines. Contrary to earlier view that almost unlinited resources are available to municipal and commercial fishermen, there is increasing evidence of overfishing in many traditional fishery grounds and, of a levelling off of nationwide marine and inland municipal fisheries catch (DAP, 1977). Simultaneously, real incomes of the traditional fishermen are decreasing. Recent socio-economic survey shows that the average cash income levels for municipal fishermen to be roughly half the-povertv thresholds established by the Development Academy of the Philippines (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 fully exploited; 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 the 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 socio-economic variations (Fig. 1) will place the burden upon the Bureau of Fisheries and Aquatic Resources (BFAR) for loan supervision, and upon cooperatives for loan guarantee and marketing. Despite a decade of organizational effort, there are presently only 8 fishing cooperatives in the country. An alternative approach implemented by the Development Academy of the Philippines relies on formation of fishermen 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

Kvaran (1971) estimates municipal fisheries maximum sustainable yield (?fSY) to be 650,000 metric tons, based on continental shelf area and estimates of average productivity per km^2. By sampling at municipal fish landings, the Bureau of Fisheries and Aquatic Resources (BFAR, 1979) reported the 1977 marine and inland municipal fisheries catch as 712,514 metric tons and 162,420 metric tons respectively, totalling 875,01)0 metric tons, or 58% of Philippine fisheries and aquiculture production in that year. Based on consumption surveys for the 1970-1975 period, a higher estimate is obtained averaging 950,000 metric tons, indicating a levelling off of municipai catch (DAP, 1977). This recent production data, shows that either Kvaran has underestimated the potential cr 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 supports the latter conclusion (Fig. l.).

SOCIO-ECONOMY

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 middle-en and boat owners, particularly at non-peak fishing periods. The belief that fishermen would prefer and benefit from an alternativ e market in g ... rr .angement has led to an increased emphasis on developing marketing infrastructure and institution.. The FIDC-ICLARM review supports the view that fishermen themselves are receptive to changes, both in production and marketing.

In face, almost 50% of municipal fishermen in sixteen fishing villages surveved since 1976 nave indicated their will ingness to chance their occupation from fishing while 30% are willing to change their location. Potential occupational mobility thus appears to be higher than potential geographic mobility. Regarding under lying attitudes, it is found that 65X of municipal fishermen are generally dissatisfied with their family condition and only 1 to 5 believethat his pe rsonal living standard is better than five years earlier.

A matrix of correlation coefficients among relevant socio-economic indicators shows that desire for occupational change is highest in those

fishing villages characterized by lower income levels (r=. 70, P < 0.05) lower percentage of boat ownership (r=.70, p < 0.05), lower levels of fishing effort (r=.74, P < 0.05), and younger fishermen (r=.82, P< 0.05). The desire for occupational change is highest in those communities with the highest percentage of households dependent upon fishing (r=.75, P < 0.OS).

There is both an opportunity and a potential stumbling block here. The high degree of latent occupational mobility should encourage those promoting alternatives; however, it is the marginal, not the more successful fishermen, who are most willing to change, located, 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

Overfishing of these cpen access common-property resources, has initiated 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 three gross tons are excluded from waters within 7 km. of the coasts of Samar, Leyte, and Sorsogon provinces. The Visayan Sea is closed tc fishing for sardines, herrings, and mackerels from November 5 to March 15 (Fig. 1), while, incentives, include alternative income sources sufficiently attractive to reduce full-time fishing. Seaweeds, oysters, and mussles in marine waters and cage culture in inland waters are the most promising fisheries related activities. Rural development schemes that might stimulate opportunities outside fish capture and culture are still in their infancy.

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Failure to emphasize and experiment with incentives aim at reducing fishing effort will lead either to continued depletion of coastal and inland fisheries resourcea, or to necessary adoption of more drastic dis-incentives and consequently nwre rapid displacement of large numbera 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 the first steps have been taken in this direction.

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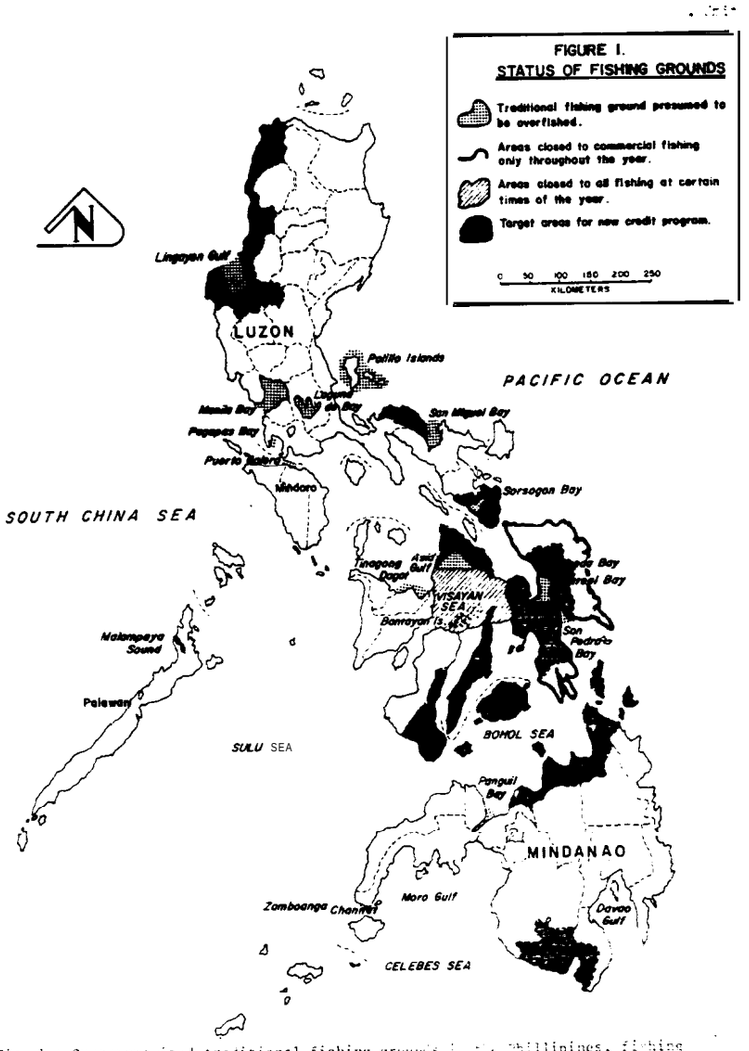

Fig. 1 : Over-exploited traditional fishing grounds in the Philippines, fishing efforts restrictions and target areas for new credit programme, as of April, 197

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