

There is Money in Milkfish Production in the Philippines

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One real constraint to expanding production from aquaculture is the lack of knowledge or information on the economic relationships between inputs and output—in other words between what goes into a pond and what comes out.

In the case of Philippine milkfish farming, the inputs include everything from seed (fry or fingerlings) to farm labor, feed, fertilizers, pond maintenance and repairs, rental and pesticides. Some other variables that can affect production relate to the experience of the farmer and the size, age and tenure of his ponds, as well as their geographic location.

Inputs cost money. The fish farmer will naturally like to know how to allocate his limited resources best, that is, to know the best combinations of inputs to maximize output. The situation is rendered more complicated by the periodic fluctuations in prices of both inputs and output.

The Philippine milkfish industry involves at least 150,000 people servicing farms totalling close to 180,000 ha which produce some 115,000 tonnes annually. Recognizing the importance of the contribution that knowledge of these relationships can make to this industry, the Fishery Industry Development Council (FIDC), the Bureau of Agricultural Economics (BAEcon) and the International Center for Living Aquatic Resources Management (ICLARM) jointly undertook in 1979/80 a study of milkfish input-output relationships in a broad sample of 324 farms over the whole archipelago.



Results of the study showed clearly that the present use of inputs is economically inefficient. In general, inputs are not used in sufficient quantities to substantially increase yields. The average stocking rate of fry, about 5,900 pieces per hectare per year, is too low; when fingerlings are used, they are stocked at the same rate, which, however, is far too high! The rates of application of both organic (manures) and inorganic fertilizers also need to be increased to be effective.

Other significant factors that explain current milkfish yields include the age of the pond—older ponds are more productive—and whether or not the operator also owns the pond. Government-leased ponds, because of operators' unwillingness to invest in capital improvements, are generally less productive. Surprisingly, perhaps, operators' experience in milkfish farming is not a significant factor.

The climate has a decided influence on production. The best yields were in provinces experiencing two pronounced seasons, dry from November to April and wet during the rest of the year.

Finally, there are economies of scale. Big farms (over 50 ha) are more efficient

than smaller ones. This suggests that group farming offers potential. The amalgamation of small farms into "tracts" of large farms need not involve changes in existing tenure status.

Readers in the Philippines who are interested in obtaining more details are referred to the full study, "Inputs as related to output in milkfish production in the Philippines, by K-C.

Chong, M.S. Lizarondo, V.F. Holazo and I.R. Smith, 1982, ICLARM Technical Reports 3, 82 p., available from the Fishery Industry Development Council, 6th Floor, Philippine Heart Center for Asia Building, Quezon City, and the Bureau of Agricultural Economics, 4th Floor, de los Santos Building, Quezon Avenue, Quezon City. For overseas readers, copies can be obtained from ICLARM at a cost of US\$10 including airmail delivery. Address checks or money orders in US\$ to Publications, ICLARM, MCC P.O. Box 1501, Makati, Metro Manila, Philippines.

A complementary study "The economics of the milkfish fry and fingerling industry of the Philippines" by I.R. Smith, 1981, ICLARM Technical Reports 1, 146 p. is also available from ICLARM at ₱60 (US\$8) or US\$21 including airmail delivery.

A follow-up study of constraints to high milkfish yields—socioeconomic, biological, institutional and physical—has just been completed. Results will be available by the end of the year.