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AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM



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Sustainable Aquaculture for a Secure future

Title: Economic Considerations

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Abstract: An important benefit of the PD / A CRSP is the positive economic and social impact that results from farmers adopting new technologies. CRSP researchers in collaboration with host-country institutions have generated knowledge that increases the understanding of the dynamics of fish ponds. This knowledge is then used to develop new technologies that can be applied by producers (Rogers, 1962). The technology or knowledge diffusion process varies across different countries and regions but often involves an extension component that serves to link research functions and output with the production sector.

The principal focus of CRSP research since its inception has been the study of the biological and chemical dynamics of pond aquaculture systems. One end purpose of this effort is to contribute to economic development through aquaculture production. However, for this to happen, the recommendations must be consistent with the economic and social environment within which these technologies are to be adopted.

In the early years of the PD / A CRSP, primarily pond dynamics studies were conducted. As the overall research effort developed, additional emphasis began to be placed on conducting some sociological and economic studies related to the technologies being developed. As has been the case in many other aquaculture development projects, social scientists in the PD / A CRSP had originally been called upon on a short-term basis to support the aquaculture research program. This type of approach led to a limited scope of economics and social science involvement in the PD / A CRSP prior to 1992.

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Involvement of social scientists in the PD / A CRSP has increased gradually over time. However, the limited nature of the economic and social science research that has been conducted to date precludes definitive answers to the following questions: (1) Should aquaculture be promoted to generate income or serve as a nutritional subsidy? (2) What are the key factors that determine economic feasibility of aquaculture that are common to all regions across the world? Yet the key findings from these studies still shed some light on these questions and provide some evidence that contributes to the attempt to provide answers. This chapter summarizes and compares what has been up to date.

Assessment of the economic viability of aquaculture projects requires an interdisciplinary understanding of physical, social, and economic relationships. Quantitative or qualitative estimates of many relevant variables are not readily available because aquaculture is in early stages of development in most areas of the world.

Incorporating economic analysis into aquacultural experiments ensures that unprofitable technologies are not pursued. While a given technology may maximize yields, other technologies may yield higher profits. Market and social constraints vary from region to region and determine product acceptability. Production research that targets those products with greatest market and social acceptance will result in more rapid growth and development of aquaculture. This will increase the overall economic and social impact of the PD / A CRSP.

Technology adoption occurs at many levels, from the researchers' technical decisions on what to investigate down to the micro- or farm-level. However, once a technology is developed, a farmer's decision to adopt a new technology will depend upon many factors that range from simple costs and returns to market factors to complex interactions between the new technology and the farming system practiced by the farmer.

The focus of this chapter is to review the economic and sociological research that has been completed by the PD / A CRSP in Honduras, Rwandan, and Thailand sites. It is not the intent to review the entire literature on the economic and social considerations of aquaculture but rather to focus on the contributions of the social sciences to the PD / A CRSP effort.

This abstract is excerpted from the original paper, which was in: H.S. Egna and C.E. Boyd (Editors), *Dynamics of Pond Aquaculture*. CRC Press, Boca Raton, pp. 377–396. (1997)