EDITORIAL

Training: A Central Element of the AFSSRN

Training, through short courses, workshops and seminars, has always been a central element of the AFSSRN's activities. Past Network coordinators have all taken an active role in the building of research capacity and in the introduction of new scientific information and methodologies to the region through training. In recent years, many Network members, after completing their advanced degree studies, have returned to the region to disseminate their new knowledge to other members through training. The training component of the Network has been one of its true success stories.

Under Phase IV of the Network, training is still given a high priority. Continued training will ensure that our members are up to date with the latest concepts, theories and methodologies in order to improve their research and teaching activities. Unlike in the past, however, the training component under Phase IV will be linked directly with the four research priorities: community-based resource management/co-management, integrated agriculture-aquaculture systems, policy analysis, and sociology/anthropology. The training will serve to provide the concepts, methodologies and framework for conducting the research. The training will correspond with the development of a research agenda for each research priority.

Two types of training will be conducted - regional and national. Regional training is meant to introduce new concepts, methodologies and frameworks to members in a collective gathering. Representative members are invited to attend the training and are expected to return to their respective institution to educate others. A well-received training activity introduced in Phase III, that of national training programs specifically organized and planned by the country-member-institutions to serve their needs, will be continued and supported.

While training is important to our current members, it is crucial for our new members in Viet Nam, and potentially Cambodia and Laos. Social scientists in these countries, due to political and economic issues, have been isolated from many of the new concepts and methodologies which have been developed in the last 15 years. With changes from a centrally-planned economy to a free-market economy, there is a real need to provide training, so that scientists can keep pace with the information and educational needs of their country.

Much of the basic information on fisheries, such as socioeconomic characteristics of fisher and fish farmer households and economics of production and viability, is unavailable, due in part, to a lack of skilled and trained scientists. The training of university staff can quickly transfer concepts and methodologies to a new generation of scientists, teachers amd policymakers through improved curriculum.

Training is an ongoing part of any scientist's career and is still needed within the region. Training will continue to be a major focus of Network activities. *R.S. Pomeroy*

Economic Assessment of Shrimp (*Penaeus monodon*) Hatchery Industry in Panay Island, Philippines

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The shrimp hatchery industry in Panay Island underwent a high growth rate during the most part of the 1980s stirred primarily by a growing export market, high economic returns, and improved technology. There were 38 hatcheries of different scales in 1985 and increased to 224 in 1992. Of these hatcheries, 56% were medium-scale, 27% small-scale, and 17% large-scale classified by the seawater tank capacity. The types of ownership of hatcheries were single proprietorship (48%), partnership (40%), and corporation (12%).

In 1991, 48 hatcheries surveyed in Panay had a total stocking of 1.5 billion nauplii or an average stocking density of 6 million nauplii per run per hatchery. There were 5.6 operational cycles (runs) per hatchery dur-

ing that year, 1.5 of which were discarded runs. Total fry shrimp production of the 48 hatcheries was 216 million with an average survival rate of 14%. The survival rate included discarded runs caused primarily by poor quality spawners and diseases.

Investments on capital structures and operating capital averaged about P244,000* (small-scale), P561,000 (medium-scale), and P826,000 (large-scale). Capital outlay ranged from P200,000 to P728,000 depending on the scale of operation. Annual sales among the different scales of operations were P144,000 for small-scale, P620,00 for medium-scale, and P673,000 for large-scale.

Operating cost per run averaged P32,000 for small-scale, P70,000 for medium-scale, and P81,000 for large-scale hatcheries. Total costs per run was P45,000-104,000 depending on the scale of operation. Of the total costs, costs of spawners and feeds (Artemia and other supplemental feeds) comprised 20-26% and 10-12%, respectively. Personnel benefits (salaries, allowances, and technicians' profit share) comprised about 15% of total cost. Sales commissions to "runners" of middlemen was 8.8% of total cost averaging P31,700 for one year.

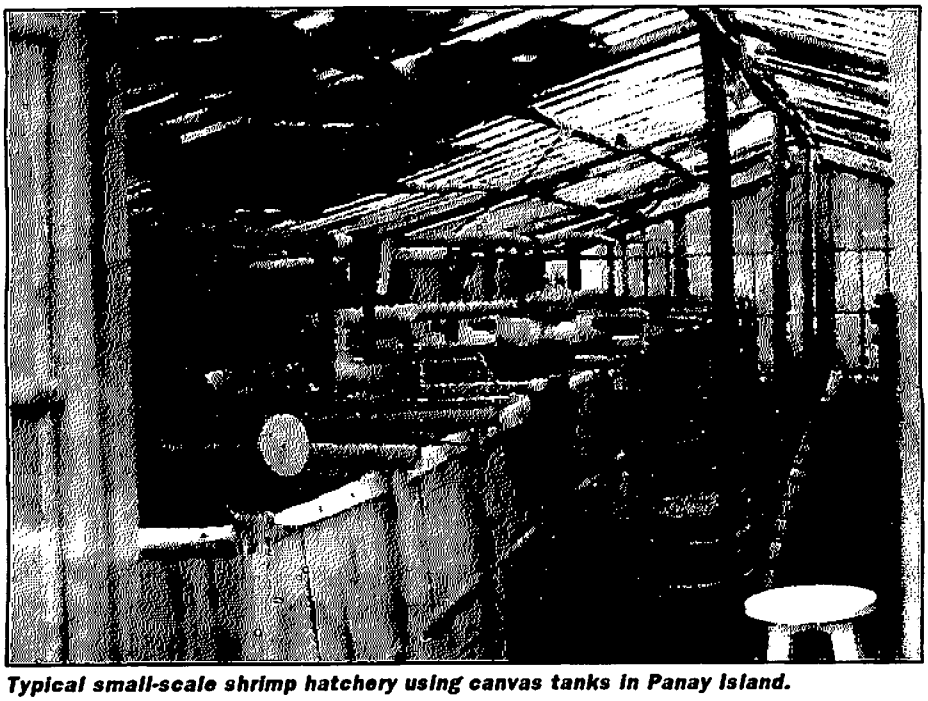
In terms of profitability, only medium-scale hatcheries registered a positive 21.81% return on investment (ROI). Small- and large-scale hatcheries posted negative figures (-4%, and -3%). What *matters*, however, among hatchery operators was the return on operating capital where all scales of operations showed acceptable figures (30-35% for small- and large-scale and 279% for medium-scale).

Long-term profitability projections using benefit/cost analysis showed encouraging discounted economic indicators. Net present values (NPV) were P105,000, P461,000, and P292,000 for small-, medium-, and large-scale hatcheries, respectively. Similarly, benefit/cost ratios were 1.19, 1.27, 1.12 in the same order. Internal rate of returns were 52% for small-, 99.74 for medium-, and 63% for large-scale hatcheries.

Analysis of risk caused by market fluctuations and production shortfalls due to technology, environment and other climate-related factors revealed that medium-scale hatcheries were the most stable posting acceptable economic returns.

Financing of capital outlay and operations of Panay-based hatcheries were sourced from owner's equity, banks, and private financiers. Owner's equity was the main source of financing capital outlay (45-62%) and operating capital (65%). Except for a few large operators, most hatchery operators had difficulties in accessing financial assistance from commercial banks due to high interest rates and stiff collateral requirements. Hatcheries with limited working capital tapped private financiers with the latter sharing about 40% of net income. Friends and relatives were also sources of financing.

Fry marketing was predominantly controlled by traders. About 62% of fry were sold through traders. In 1991, average ex-hatchery price was P0.10/fry and the actual buying price of shrimp growers (delivered to the pond site) was about P0.25/fry. The difference of P0.15/fry represented the spread of traders in the marketing process. The mark-up of traders covered the marketing costs (packing and transport) and the profit of the traders. Traders, in view of their closer contact with shrimp growers, can cover the fry market more effectively and widely. Quantity requirements and buying price of buyers can be easily monitored by the traders.



Typical small-scale shrimp hatchery using canvas tanks in Panay Island. (SEAFDEC FILE PHOTO)

The uncertainty of a stable demand for shrimp fry has discouraged most hatchery operators to expand and improve their facilities. Diversification into other species, i.e., milkfish and grouper were considered as an alternative business strategy to ensure continuity of operations.

In order to ensure continuous viability of hatcheries, the critical areas of concern are: financing of operating capital and improvement of facilities; collective marketing efforts through cooperatives; updating of technology especially in disease prevention and control; and diversification strategies.

*US$1 = P27.00, 1991.

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