

Small-Scale Freshwater Rural Aquaculture Development for Poverty Reduction

- The outcomes of ADB-assisted aquaculture development projects that explicitly sought to address the needs of small-scale fish farmers have not always favored intended beneficiaries.
- What are the main factors that enable rural aquaculture to generate livelihoods and reduce poverty? What steps can be taken to overcome constraints and optimize these factors?

Background

Aquaculture is an important food production system in developing countries. Rural aquaculture may be defined as the farming of aquatic plants and animals, using technologies adapted to locally available and limited resources of households.

For aquaculture, the **Policy on Fisheries** of the Asian Development Bank (ADB) emphasizes increasing production from existing aquaculture farms and coastal areas, and integration of aquaculture with existing crop and livestock farms. By 31 December 2003, ADB had financed 25 projects with major aquaculture development components, with approved loans totaling \$665 million. Early aquaculture development initiatives date from the 1970s, but the majority of project approvals took place in the 1980s, coinciding with a surge in global interest in aquaculture.

In the past, determination of benefit distribution was not prominent in most ADB-assisted aquaculture development projects. Aquaculture was often narrowly viewed as intensive farming of shrimp and prawn species, adopted mainly by relatively wealthy farmers to provide high-value products for exports. Such views still frequently dominate despite concerns that the expansion and growth in shrimp farming without safeguards has often led to environmental degradation. This narrow view of aquaculture development hides the potential of fish farming, particularly in the context of rural development.

Finding aquaculture development approaches to open up livelihood opportunities for the rural poor remains a challenge. The poor face many constraints to entry into aquaculture, particularly impediments to the uptake of technologies and management practices because of such factors as lack of access to capital and resources, vulnerability, and aversion to risks. Aquaculture operators require access to appropriate skills, land and water, financial capital, organizational arrangements, physical facilities, and infrastructure in order to adopt, operate, and sustain relevant farming practices.

In 2004, the Operations Evaluation Department undertook a **Special Evaluation Study on Small-Scale Freshwater Rural Aquaculture Development for Poverty Reduction**.¹ The study aimed to identify and assess the major channels of effects for livelihoods and poverty reduction of small-scale freshwater rural aquaculture, and to recommend steps to make operations in aquaculture development more relevant for poverty reduction. The study applied a conceptual framework based on a modified **sustainable livelihoods approach**. To probe aspects of freshwater aquaculture in different and diverse settings, country **case studies** were selected and undertaken, covering Bangladesh (three case studies), Philippines (three), and Thailand (two). Study material was compiled in book form as **An Evaluation of Small-Scale Freshwater Rural Aquaculture Development for Poverty Reduction** to disseminate lessons to a wide audience.

Summary of Findings

Five types of **capital assets** (human, social, natural, physical, and financial) are required for people to engage in small-scale aquaculture in different locations. The presence or absence of various components of capital assets can facilitate or hinder the likelihood of success. **Transforming processes** (including markets and marketing, labor market, roles of public and private institutions, support services, facilities and infrastructure, legal framework and policies, aquatic resources management and environment, and safeguards for biosafety and aquatic health) can also facilitate or hinder the generation of desirable outcomes from the employment of capital assets in aquaculture. Through the conceptual framework of capital assets and transforming processes, the study was able to distinguish key findings and lessons offering considerations for making small-scale freshwater aquaculture development beneficial to the poor. These findings and lessons are generalized from the case studies but the contextual issues are significant and may be applicable elsewhere. They relate to:

- Improving human nutrition.
- Recognizing vulnerabilities.
- Understanding binding constraints and demand for capital assets.
- Benefiting from group formation and collective action.
- Considering costs of labor.
- Understanding market dimensions.
- Enabling access to credit.
- Recognizing technology implications.
- Accounting for rising feed costs.
- Securing fish seed supply.
- Making extension more effective.
- Benefiting from private extension services.

Recommendations

- Analyze conditions for livelihood generation and poverty reduction.
- Recognize barriers, requirements, and risks.
- Assess specific demands on users' capacity to operate aquaculture systems.

- Analyze available options for providing access to land and water.
- Consider options for financing aquaculture investments and operations.
- Analyze markets and marketing of aquaculture products and factors of production.
- Analyze the labor market.
- Understand the roles of services, facilities, and support infrastructure.
- Assess the roles of public and private institutions.
- Assess the policy environment and legal framework and their conditions.
- Protect aquatic resources, environment, and aquatic health.
- Recognize multiple uses of water and minimize conflicts.

Feedback

ADB Management's Response noted that the conceptual framework provided in the report is a very useful tool for the design of future projects. The **Chair's Summary of the Development Effectiveness Committee Discussions** commended the innovative nature, purpose, and format of the study. The study had taken the learning process to its next step, namely, how could ADB's aquaculture interventions become more relevant for poverty reduction through the application of a conceptual framework that recognized farmers' and operators' vulnerability and the importance of their access to various capital assets. The Committee agreed that the private sector, including nongovernment organizations and suppliers, had started to play a key complementary role in the development of the sector. It felt that the study could indeed become a valuable handbook for ADB staff, practitioners, and researchers alike and should be disseminated widely. It appreciated the use of photographs and encouraged such practice as another step towards greater transparency in evaluation studies.

¹ ADB. 2004. *Special Evaluation Study on Small-Scale Freshwater Rural Aquaculture Development for Poverty Reduction*. Manila. Available: <http://www.adb.org/Documents/Reports/Evaluation/sst-reg-2004-07/default.asp>