

# ETHNIC WOMEN IN AQUACULTURE IN NEPAL: A MODEL FOR PARTICIPATORY RESEARCH AND DEVELOPMENT

Ram C. Bhujel<sup>1\*</sup>, Madhav K. Shrestha<sup>2</sup> and Jharendu Pant<sup>2</sup>

<sup>1</sup>AARM, SERD, Asian Institute of Technology (AIT), Thailand

<sup>2</sup>Institute of Agriculture and Animal Science (IAAS), Chitwan, Nepal

[bhujel@ait.ac.th](mailto:bhujel@ait.ac.th)

In Nepal, over 80 percent of the population lives in rural areas relying on subsistence agriculture and more than half (60 percent) of them suffer from food shortages for 4-6 months each year. Almost 90 percent of children suffer from one or more forms of malnutrition. Among the nutrients, animal protein is scarce and not affordable for most Nepalese in their regular diet. Realising the need, in 2000 a pilot project in Chitwan district, central Terai of Nepal was launched jointly by the Asian Institute of Technology (Thailand) and the Institute of Agriculture and Animal Sciences (Nepal). The project has so far supported about 150 families belonging to ethnic groups in Chitwan and Nawalparasi districts.

The size of the fish pond recommended was 200 m<sup>2</sup> but participants were allowed to dig ponds of any size, depending on the availability of land near their houses. Approximately half of the construction cost was covered by the project and most of the farmers used their family labour. Most farmers have less than 0.5 ha of land and family sizes range from 2-17. The project provided basic technical support to the women's group, including procuring fish seed and training in fish farming. The women used farm by-products and kitchen wastes as supplementary feeds in green water systems. Farmers harvest fish whenever they want (partial harvest) but keep records of all inputs (seed, feed, fertilizers and labour) and outputs (consumed and sold) so that data could be collected and analysed for further recommendations. In this way, the project itself has been a participatory research programme and ethnic women are farming fish not only for their own benefit but are also part of the team contributing to the scientific research.

Results of the first phase showed that fish production, consumption and sales peaked at about 350m<sup>2</sup> pond size then declines for larger ponds. As the pond gets bigger, inputs/resources available on-farm are not sufficient to support the same intensity of production as in smaller ponds. Based on this result, a pond of 175-300m<sup>2</sup> would currently be recommended and this would produce about 50-90kg of fish per season; 60 percent for home consumption and 40 percent for sale. Direct intervention through small-scale aquaculture managed by women is possible; however, it requires a careful selection of the target group and suitable sites.

The project has been considered one of the most successful/model projects in Nepal. The project sites have been visited by farmers, government officials and NGOs. More importantly, the Government of Nepal and some NGOs have accepted the model and started to promote the idea throughout the country. A development organisation has already supported about 650 families by using the idea in the western Terai of Nepal and has a plan to expand further. The project team has made continuous efforts to improve the model. In the second phase fish farming integrated with vegetable gardening was tested, in an effort to supply more nutritious food, generate higher income and make better use of the land. Similarly, in the third phase, fresh water prawn (*Macrobrachium rosenbergii*) was introduced from Thailand for co-culture with fish in the pond as an option for higher income. Preliminary results are very promising. Furthermore, the five women's groups have now been registered as cooperatives to continue their group activities for the long-term. Some of the members have already expanded their scale to a commercial level, benefiting more from the knowledge/skills gained from the project. These models should be expanded throughout the country for the benefit of larger population.