

IMPROVEMENT OF WOMEN'S LIVELIHOODS, INCOME AND NUTRITION THROUGH CARP-SIS-PRAWN POLY CULTURE IN TERAI, NEPAL

Sunila Rai¹, Saroj K. Yadav¹, *, Shakuntala Thilsted², Madhav K. Shrestha¹, Md. Abdul Wahab¹
¹Institute of Agriculture and Animal Science, Rampur, Chitwan, Nepal, ²University of Copenhagen, Denmark, ³Bangladesh Agricultural University, Mymensingh, Bangladesh.
sunilarai@yahoo.com

In Nepal, malnutrition caused by vitamin and mineral deficiencies among poor women and children is well recognized as a serious health problem. In 2006, the Ministry of Health and Population reported that essential micronutrients such as iron, zinc, vitamin A and calcium are lacking in the Nepalese diet and, consequently, large population groups are suffering from diseases and disorders associated with micronutrient deficiencies. Realizing the role of Small Indigenous Fish Species (SIS) to combat malnutrition problems, a project entitled "Improvement of women's livelihoods, income and nutrition through carp-SIS-prawn polyculture in Terai, Nepal" was launched in Chitwan and Kailali Districts. The objective of the project is to improve the health and nutrition of women and children through increased intake of nutrient-dense SIS, and to empower women. The project is funded by Danish International Development Assistance (Danida). Altogether 126 household ponds (100 in Chitwan and 26 in Kailali) of 100 m² have been constructed. Ponds are stocked with carps such as Rohu (*Labeo rohita*), Silver carp (*Hypophthalmichthys molitrix*), Bighead carp (*Aristichthys nobilis*) and mrigal (*Cirrihinus mrigala*), and SIS such as Dedhuwa (*Esomus danricus*), Mara (*Amblypharyngodon mola*), Pothi (*Puntius sophore*) and Prawn (*Macrobrachium rosenbergii*). The stocking density of carps, SIS, and prawn are 0.75/m² (Rohu 0.3, Mrigal 0.1, Silver carp 0.25, Bighead carp 0.1), 2.5/m² and 1/m² respectively. The culture period was 250 days.

In 2009, the average total production was 2.6 t/h/y. Fish production was affected by mortality caused by poisoning when water was drawn from a canal in which fishers used poisons to catch fish. Carps were the major contributor (88%) to the total production whereas SIS and prawn contributed 8% and 4%, respectively. A trial comparing carp and prawn production with and without SIS showed that SIS increased total production of carps and prawn by 30% during the culture period. On average, farmers consumed 54.4% of the total production. Consumption varied from 0.8 kg to 22.4 kg per household. Farmers consumed all SIS whereas surplus carps and prawn were sold and earned some money which the farmers used to cover household expenses. The amount of fish sold ranged from 0.7 kg to 24.2 kg per household. Carp-SIS-prawn polyculture increased fish consumption among small scale farmers and also improved household income.