

Production of Small Indigenous Freshwater Fishes in Homestead Ponds: A SWOT Analysis

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Abstract—Aquaculture can provide food and nutrition security to the entire household, as well as the much needed micronutrients for women and children. Homestead aquaculture is mostly limited to composite carp culture wherein the contribution to household nutrition is usually overlooked. In order to improve the productivity and hence the production and household fish consumption, species diversification in homestead aquaculture with indigenous small fishes is needed. India is blessed to have around 450 species of small indigenous freshwater fishes (SIFFS) of which around 62 have been proved to be important for food security. It is estimated that 38% of India's future fish demand has to be met by the small indigenous fishes. Studies have proved that consumption of 1kg of small indigenous fishes provide nutrition equal to that of 40 kg of large fishes. They are rich source of high quality protein and micronutrients. For example, the species *Amblypharyngodon mola* has a Vitamin A content of more than 1500 Retinol equivalent/100g which is 15 times higher than that of *Labeo rohita*. There has always been a greater demand for small indigenous fishes because of its inherent health benefits especially for children and patients with chronic diseases such as diabetes. During the period from 2008-2016, the price inflation rate of SIFFS is reported to be 334.42% as demand is not able to meet the supply of these fishes. Recognising the importance of consumption of small indigenous fishes in combating the micronutrient deficiency among children, the State Government of Odisha has proposed a project for supplying the small indigenous fishes through the mid day meal scheme. A SWOT analysis of polyculture of Indian major carps with small indigenous fishes was done in the Satyabadi block of Puri district, Odisha. The availability of perennial homestead ponds, proximity to natural water bodies for seed collection, willingness of women to involve in aquaculture activities, proximity to government institutions for technical help, high market demand for the small indigenous fish species (market price Rs 240-250) and high frequency of consumption of fish by both men and women were the strengths identified for undertaking the polyculture. The existing weaknesses witnessed were the unscientific aquaculture management practices, lack of technical training and lack of awareness on the compatibility of small indigenous fishes with Indian major carps which could be overcome by capacity building and participatory action research. The utilisation of homestead ponds for production of small indigenous fishes will not only ensure the continuous availability of fish to a rural family but also help in conservation of these species which is otherwise fast declining from natural waters.

Keywords: Homestead ponds, Nutrition, Polyculture, Small indigenous freshwater fishes.