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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Improving the Livelihood for Marginalized Women's Households in Southwest Bangladesh through Aquaculture

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Abstract: Mud crab (*Scylla serrata* (Forsskål 1775)) fattening and culture is an emerging industry in Bangladesh that directly benefits households in the coastal region of Bangladesh. Currently, 37.8 % of crab fattening and culturing facilities are owned and operated by women whose households are generally poor. The study was conducted to promote the integration of tilapia (*Oreochromis niloticus* (Linnaeus 1758)) into mud crab culture, thus diversifying the crops and potentially improving household income and nutrition. First, a baseline survey of 150 mud crab farmers in the Satkhira, Khulna, and Bagerhat regions was conducted, focusing on household food consumption, dietary nutrition and earned incomes, plus household demographic and socio-economic information. The survey revealed that the majority of mud crab farmers are poorly educated (5 years average schooling) and consumed low dietary nutrients, particularly from animal protein sources. Second, tilapias were integrated into mud crab culture by 45 farmers, 15 from each surveyed region. 5 farmers from each region continued with the traditional mud crab fattening procedures and 10 were instructed in

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methods of mud crab and tilapia stocking and culture, using mixed sex tilapia for continuous breeding. 5 of the 10 farmers sold their tilapia to market while the other 5 kept the tilapia for direct household consumption. In both groups small tilapia were fed to mud crabs to reduce reliance on wild-caught trash fish as feed. Including tilapia in mud crab fattening and culture increased growth and production of mud crabs, albeit not to a level that differed significantly from the group where mud crab alone were produced. Adding tilapia into mud crab culture increased the nutrient-rich foods available for the farmer's households. A follow up survey found that the women and their household members improved their incomes and consumption of high quality protein. Overall, the integration of tilapia provides a more sustainable method for growing mud crab while also enhancing the livelihoods of farmers.

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