PRODUCTIVITY OF MICRONUTRIENTS FROM INTEGRATED AQUACULTURE-AGRICULTURE SYSTEMS: EVIDENCE FROM BANGLADESH

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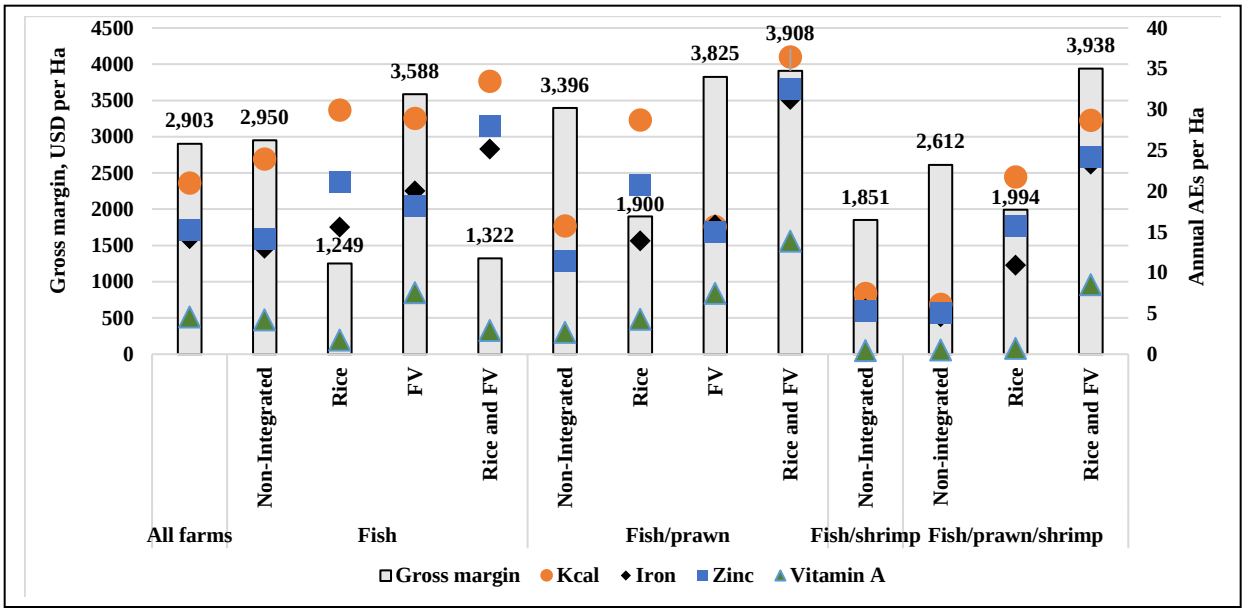
Integrated aquaculture-agriculture (IAA) has been widely promoted as a form of farm diversification that can promote more efficient resource use, improve productivity, and lead to higher household incomes and more diverse diets. Farm productivity is usually measured in terms of biomass or income produced per area of land. Here, we extend the concept of productivity to measure production of energy (kcals) and micronutrients, and explore the relationship between the economic and nutritional productivity for 12 distinct types of IAA system, identified from a survey of 721 farms in Southwest Bangladesh.

Figure 1: Economic and nutrient productivity by IAA system (USD/ha & AE/ha)



Nutrient productivity is expressed as the number of adults able to meet their total recommended annual intakes of selected nutrients from the food produced on one hectare of land (AEs/ha). We present productivity of energy (kcal), iron, zinc, and Vitamin A under different IAA systems. Farms integrated with fruits and vegetables, and farms producing fish with freshwater prawn tend to have higher economic productivity than non-integrated farms, and those producing fish only. (Fig.1). Farms integrated with rice have higher energy productivity. Farms integrated with fruit and vegetables produce slightly more vitamin A. OLS regressions confirm that, in general, integrated farms produce more nutrients per hectare than non-integrated farms. Vegetable production is a key driver of both economic and nutrient productivity. These findings have important implications for the design of Nutrition Sensitive Agriculture programs that can enhance the contributions aquaculture makes to nutrition security in Bangladesh and other countries.