

## Factors affecting the adoption of aquaculture technologies by the farmers

**M.A. Kashem**

Department of Agricultural Extension Education  
Bangladesh Agricultural University, Mymensingh 2202, Bangladesh  
*E-mail address:* kashem@royalten.net (M.A. Kashem)

### Abstract

Purpose of the study was to ascertain the extent of adoption of aquaculture technologies by the farmers as well as constraints faced by them in adopting the aquaculture technologies. The study also explored its relationships with the selected characteristics of the farmers. In addition, an attempt was also made to determine some selected attributes of the technologies and their relationships with the adoption by the farmers. The study was conducted with the farmers of 10 upazilas of greater Mymensingh district who were the beneficiaries of three NGOs viz. SARA, ORD, and GRAMAUS. There were 351, 241 and 249 beneficiaries under SARA, ORD and GRAMAUS, respectively who adopted the aquaculture technologies under DSAP. About 25% farmers from each of the three NGOs were selected for the study. The total sample size was 212. Pre-designed and pre-tested interview schedules were used for collecting data from the farmers. Field data were collected from the farmers during August-September, 2004. Pearson product moment correlation co-efficient were computed in order to explore the relationships of the selected characteristics of the farmers as well as selected attributes of technology with the adoption of aquaculture technologies by the farmers. The same statistical test was used to determine the relationships between the selected characteristics of the farmers and their constraints in adopting the aquaculture technologies.

**Key words:** Fish farmers, Aquaculture technologies, Expression, Constraints of adoption

### Research findings

- Farmers had the highest adoption in respect of carp polyculture in the fish ponds (83%) followed by raising fingerlings in the nursery ponds (11.3%), rice fish farming (5.7%) and raising fingerlings in paddy fields (0.5%)
- Farmers had the highest constraints in respect of finance (47.2%) followed by availability of inputs (24.5%) and extension services (22.6%), socio-cultural and psychological constraints (22.6%) and situational and management constraints (19.3%).

- The adoption of aquaculture technologies by the farmers had significant positive relationships with their knowledge on aquaculture technologies, training received, attitude towards aquaculture technologies, and innovation proneness; none of the individual characteristics of the farmers had negative relationships with their adoption of aquaculture technologies.
- Age, education, family size, farm size, pond size, annual income, decision making ability and fatalism of the farmers exhibited no relationships with their adoption of aquaculture technologies.
- Adoption of aquaculture technologies by the farmers had also significant positive relationships with the relative advantage and compatibility of the technologies, whereas it had significant negative relationships with the complexity and task demand of the technology.
- Constraints faced by the farmers in adopting aquaculture technologies had significant positive relationships with their age, family size, fatalism and yield gap. Conversely, constraints in adopting aquaculture technologies by the farmers had significant negative relationships with their education, annual income, and knowledge on aquaculture technologies, training received, communication media exposure, and risk taking ability.

#### Policy implications

- Age of the farmers exhibited significant negative relationship with their constraints in adopting the aquaculture technologies. Hence, policy decision may be taken to give preference to the younger people while selecting the potential adopters of aquaculture technologies in the rural society.
- Concerned administrators should make arrangement for non-formal education for the farmers. However, in case of lower educational level among majority of the potential users of aquaculture technologies, emphasis should be given for providing need-based training in order to supplement the educational requirement.
- Need-based training programmes may be organized by the concerned policy makers so that farmers acquire necessary knowledge and skills related to the adoption of aquaculture technologies. In order to provide effective training to the farmers, training need assessment (TNA) for different categories of farmers may be done.
- Concerned authorities should take deliberate motivational campaign so that the farmers acquire courage to take risk at least to a minimum extent. If necessary, insurance scheme may be introduced for motivating farmers for adopting aquaculture technologies.
- Concerned administrators should take necessary arrangement so as to reduce the constraints faced by the farmers in adopting aquaculture technologies as far as possible through all possible means.

- Prior to diffuse any technology in the farming community, its relative advantages over other existing technologies as well as its compatibility need to be carefully evaluated by the policy makers for its wide scale adoption by the farmers.
- Concerned administrators should give due cognizance of the complexity and task demand factors of a technology while mass scale adoption of technologies by the farmers is planned and designed. Secondly, before taking the technologies to the farmers for adoption, its complexity and task demand aspects should be considered by the policy makers.

### Livelihood implications

Almost three-quarters of the farm operators in Bangladesh are small, marginal and subsistence framers. Any kind of adventurous activities are challenging for them. They want to be ensured and confirmed to get benefit from any technology. Hence, if adequate facilities are provided and opportunities are created for these framers, they would be interested to adopt more and more aquaculture technologies to improve their livelihoods. Polyculture of carp in ponds and nursery management practices in pond, which appeared to be the highly adopted technology by the farmers, can be the good options for the subsistence farmers to improve their livelihoods.