SOCIO-ECONOMIC IMPACT OF COTTON IPM PROGRAM IN SELECTED AREAS OF BANGLADESH

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Abstract

The study was designed to examine the socio-economic impacts of cotton 1PM program on the overall production and yield of cotton, farmers' income, health, environment and human resources development in selected areas in the southwestern districts of Jessore, Jhenaidah, Chuadanga and Meherpur. Ninety-nine respondents were randomly selected by using two- stage stratified sampling technique. Sample farmers were classified into three groups, Farmers' Field School(FFS), Non-FFS (Non Farmers' Field School), Non-IPM(Non Integrated Pest Management) Data were collected personally by the researcher, compiled and interpreted as per the objectives of the study. The study revealed a significant improvement of production practices, profitability, employment generation, biodiversity, skills, decision making capacity, organizational capacities were observed after the involvement of cotton IPM program. On FFS plot fertilizer use was significantly lower by 62% than Non IPM plot by 56%.The total number of pesticides application was reduced significantly by 17% on FFS farms and by 10% on Non FFS farms whereas little bit change was observed by 5.4% in case of Non IPM farms after joining the IPM program. The FFS farmers reduced variable cost of production by 29.57% where as NFFS and Non IPM reduced by 25.11% and 21.33% respectively. Among the groups, the gross margin on total variable cost (TVC) of FFS farmers increased from US$ 385.26 to US$ 439.94. Net profit of the FFS, Non-FFS and Non-IPM were reduced by 25.94%, 42.64% and 178.58% respectively because the impact assessment year was abnormal year in terms of yield reduction due to late planting and the prevalence of drought during FFS training season, when rains as well as canal water supplies were very scarce. and the prevalence of drought during FFS training season, when rains as well as canal water supplies were very scarce. Higher level of employment opportunities were also created in different categories of farmers FFS (40 %), Non-FFS (28%) and Non-IPM (8%) after the participation in the cotton IPM program. Field Environmental Impact Quotient (EIQ) indexation shows 46% improvement on FFS farms as compared to only 2% improvements caused at Non JPM farms. Reduction in the use of highly toxic pesticides at FFS farms had significantly reduced the number of poising incidences at household level (50%), total workdays lost (83%) and expenditure for poisoning treatment (74%) after joining cotton IPM program. The cumulative score on soil

improvement, observed biodiversity and attitude towards environment had significantly improved on FFS farms (160%, 37% and 100% respectively). Use of knowledge sources had increased (29%) at FFS farms and declined at other categories. The major differences were found in the recognition of number of beneficial and pests at FFS farms 1678% and 138% respectively than the Non IPM farms. The observation and record keeping skills used for the experiments conducted by the farmers were found a plausible increase among FFS (56%) farmers and Non-FFS (43%) farmers whereas the use of such skills increased a little bit rather negative on Non-IPM (29%). Thus the FFS method has wide potentiality in addressing number of extension issues and thereby contributing for human, economic and social capital. The findings led to the conclusion that human & animal labor cost, seed cost, pesticides cost and irrigation cost significantly affected the cotton production. The summation of the elasticity coefficients was 1.45 revealed the increasing return to scale in the production process. However, many problems were associated with cotton IPM cultivation like technological constraint, lack of training on cotton IPM production practices, quality seed crisis, lack of marketing facilities, high price of inputs, more infestation of diseases and pest, natural calamity, economical, sociological, institutional constraint, and others. Quick dissemination of the IPM technologies, regular field days and demonstrations trails need to be arranged in the farmers' fields through the involvement of extension personnel of DAE and NGOs. In addition, concerned agencies should be particularly aware of those problems and take necessary measures to solve those as far as possible.