

## **AN EXPLORATION OF KNOWLEDGE GAP AMONG SCIENTISTS, EXTENSIONISTS AND FARMERS ABOUT RICE PRODUCTION TECHNOLOGIES**

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### **Extended Summary**

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BIRRI so far developed 47 HYV of rice with production related technologies. But there is no diffusion and adoption picture before the scientists and extensionists. Scientists do not know the effectiveness of their discoveries, extensionists do not know effectiveness of their extension education policy and farmers do not know their future course of action. If the production technologies are suitable and farmers adopt those, the level of production must be higher than the present status. It was evident from various researches that there is knowledge gap in rice production technologies, their maintenance, and other relevant matters among the farmers and their advisors. Knowledge gap may be defined as the deficit of how-to-knowledge of farmers and concerned people in application of recommended production technologies at recommended rate. The scientists are working hard to minimize the gap of production between projected demand and actual production in the field by using different production dimensions such as expanding of rice area (no more possible), bridging the yield gap, reducing the yield losses, and over all bridging the knowledge gap between scientists and extensionists and between scientists and farmers. Therefore, it is necessary to reduce the knowledge gap between the concerned systems including finding out farmers' problems in using rice production technologies. Farmers usually adopt rice production technologies at varying degrees based on their infrastructural facilities and socioeconomic conditions that ultimately results variations in the yield. From the field experience it was noticed that farmers give emphasis on principal-technology of HYV of rice only. They do not bother for other production related technologies to be used as recommended by the scientists. Therefore, the researcher conducted a research study aiming at to explore knowledge gap between scientists, extensionists, and farmers about rice production technologies. The study was conducted in four villages of Ghior Upazilla of Manikganj District among randomly selected 100 Boro rice growers during April to May, 2007. A number of technologies were brought to measure overall knowledge gap of rice production. Although many technologies are concerned with rice production, in this study only three were taken into consideration based upon the respondents' responses. The three technologies were: (i) seed rate, (ii) age of seedlings, and (iii) chemical fertilizers. Knowledge gap on seed rate and age of seedling were measured keeping in view the recommendation forwarded by BIRRI Scientists Knowledge gap of extension personnel about rice cultivation practices:

knowledge gap of extension personnel were found in case of determining seed rate, age of seedlings, and also in determining fertilizer doses. An overwhelming majority (more than 80%) of the farmers had knowledge gap in determining seed rate and age of seedling. But all the farmers were found to be lack of knowledge in case of fertilizers application. In case of adoption all the respondents adopted RBBI dhan 28. According to adoption score they were classified as low adoption (25%), medium adoption (26-50%), high adoption (51-75%) and very high adoption (above 75%). Majority (60%) of the respondents had medium adoption and about one fourth of the respondents had high and very high adoption. Overwhelming majority (88%) of the respondents had yield gap in rice cultivation ranged from 5% to 21%. Only 8% of the respondents reaped expected yield. Farmers of the study area identified five problems such as lack of fertilizer, lack of quality seed, lack of technological knowledge, lack of training and lack of agricultural loan. To mitigate the problems they suggested the agricultural extension department to supply quality seeds, manage fertilizer crises efficiently, maintaining regular extension contact and arrangement of interest free agricultural loan. Significant relationships were found among the variables studied either at 0.01 per cent level or at 0.05 per cent level.

In Bangladesh about 18 million farm families cultivate rice of different varieties in different seasons – Aus, Amon, and Boro. During the last decade farmers were able to increase per unit production of rice. This was possible due to development of 47 varieties of rice by BRRI since independence, increase of irrigation facilities, increase of application of fertilizers, pesticides, and overall extension and management support. From the findings of the present study it was found that farmers of the study area have knowledge gap in determining seed rate and age of seedlings, time of seeding transplanting, application of fertilizers judiciously, supplementary irrigation etc. So, farmers of Bangladesh including the farmers of the study area should be imparted rice production training.

In continuation of the above conclusion it was observed from the study that farmers use more seed than the recommended seed rate. Saving seed is an important issue of Boro rice cultivation. Every year seed traders increase the price of seeds. Farmers have to count more money for purchasing seeds. So, in conclusion it could be said that farmers must be wise in determining seed rate in Boro rice cultivation.

According to the BRRI scientists, BRRI dhan 28 or 29 yield 5.0 MT/h. But it was observed that this target could be reached only under the best management condition. In fact, farmers can not ensure such management system. At best farmers can reach 4 MT/h. But Fischer and Cordova (1998) reported that on an average Bangladesh could achieve 2.6 MT/h only causing 51.9% gap between potential and national mean. However, in the study area farmers produced more than national average. Age of seedlings plays very important role in Boro rice

cultivation. It has relationship with production. The standard age of seedling was set 40-45 days to cultivate BRRI dhan 28 or 29. The period lower than the recommended seedling age or more than the recommended seedling age both hamper the production. In this study it was found that more than 80% of the farmers had knowledge gap on seedling age issue. So, conclusion can be drawn that farmers of Ghior upazila need training and field visit to the research stations where research were conducted on this topic.

Use of recommended doses, of fertilizers in Boro rice cultivation can ensure potential yield. But in the study area it was found that no farmers used recommended fertilizer doses. They mainly used urea, TSP and MP. A negligible number of farmers used Zn fertilizer. In fertilizer use there is wide knowledge gap ranged from 6% to 66%. Interestingly, by using lower doses, farmers of the study area harvested more than national average. It is expected that if farmers could reduce the knowledge gap there is a probability to achieve potential yield. It will very soon be rice exporting country. The research findings of the present study may be applied for the farmers of other regions of Bangladesh also. The knowledge gap is definitely correlated with yield. That is, more the knowledge gap will be more the yield gap will be. Inversely, less the knowledge gap less the yield gap.