

# Cost Benefit Analysis of Mechanized and Labor-Intensive Production of Major Crops

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## Abstract

*The agriculture in Bangladesh is characterized by low productivity, subsistence farming, labor-intensive, small and fragmented land holdings, and less profitability. Shortage of labor and higher wage rate makes it difficult for the farmers to increase the crop productivity as well as make it economically profitable. This study was conducted in four Upazilas of Cumilla and Dinajpur District of Bangladesh with an aim to analyze the costs and benefits of mechanized and labor-intensive production of four major crops, e.g. rice, wheat, maize, and potato. The study mostly used quantitative approaches in data collection and analysis. However, some qualitative data were also gathered for analysis purpose. Total sample for this study was 240 (60 x 4 Crops) covering 60 sample farmers selected for each crop. Data relating to cost and return were calculated on per hectare basis. The study found that there is no difference in the crop yield under both the methods, but in mechanized crop cultivation method, cost of production is low that ultimately brings higher profitability and higher Benefit-Cost-Ratio (BCR) for all selected crops. Under the mechanized cultivation method the total cost of production of rice, wheat, maize and potato was 27.8%, 20%, 18% and 16.6% respectively, less than the labor-intensive cultivation method. The result also showed that mechanized crop cultivation reduces the cost of various intercultural operations from 10% to 78.8% of selected crops. The net return from labor-intensive and mechanized cultivation of rice was BDT 17,636 & BDT 41,224 per hectare and the BCR was 1.19 and 1.62, respectively. In case of wheat cultivation, the net return from labor-intensive wheat production was BDT 13,315 per hectare and that from mechanized wheat production was BDT 24,678 per hectare whereas BCR was 1.28 and 1.64, respectively. The study also found that the net return from labor-intensive maize cultivation was BDT 64,973 per hectare and that of the mechanized maize cultivation was BDT 87,705 per hectare. The BCR was 1.80 and 2.32 for labor intensive and mechanized maize cultivation, respectively. In case of potato cultivation, the net return from labor-intensive production was BDT 89,585 per hectare and that of the mechanized production was BDT. 1,26,405 per hectare. Whereas, the BCR was 1.80 and 1.98 for labor-intensive and mechanized method of production, respectively. Based on the findings of this study, it was concluded that mechanized method of crop cultivation is less costly and more profitable than that of the labor-intensive method of crop cultivation.*