



RESEARCH PAPER

Farm mechanization and agricultural growth in Eastern India

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Abstract : The agriculture sector plays a vital role in the Indian economy. It contributes about 17 per cent of the country's total GDP. According to Indian Economic Survey 2018, it is estimated that percentage of agricultural workers of total workforce would drop to 25.7 per cent by 2050 from 58.2 per cent in 2001. Mechanization in the form of tractors, seed drills or tube wells (pump sets) enable a farmer to grow more crop and earn more by increasing the input use efficiencies. Further, adoption of mechanization ensures double benefit of reduction of cost and increase the productivity and production. Though there has been a substantial progress of mechanization in agriculture through various programmes, the level of mechanization in the Eastern region was lesser (8.18 hrs/ha) than the country's average (11.56 hrs/ha) resulting lesser crop productivity and net returns. This study intends to assess the effect of increased use of mechanization on farm income and profitability in Eastern region with the comparison of India as whole. The study used the plot level cost of cultivation data (DES-Directorate of Economics and Statistics) to compare the level of inputs (labour, animal and machine) use for two period viz., 2000-01 and 2013-14 and estimated translog cost functions to calculate labour demand elasticities and Allen Elasticities of Substitution between labour and other factors like animal and machine power under two different period at constant price (1993-94). This study found that in Eastern region the use of man labour and animal labour in cultivation practices has declined over the years. However, it was noticed that the employment of animal labour in this region was significantly higher while it was lower in case machine labour for almost all the crops cultivated in comparison with the country. Further, the study found that the share of payment on machine labour has increased over years across crops for Eastern region as well as India as whole, however, the increment was comparatively higher in India. The lesser level of cross price elasticities clearly states that machine labour is a weak substitute to man and animal labour. This implies that mechanization had not been strong alternate to animal and man labour for crop production activities in Eastern region.

Key Words : Farm mechanization, Labour demand, Input substitution, Input demand elasticity, Agricultural growth

View Point Article : Karunakaran, K.R., Arivelarasan, T. and Udhaya Kumar, M. (2019). Farm mechanization and agricultural growth in Eastern India. *Internat. J. agric. Sci.*, **15** (2) : 239-249, DOI:10.15740/HAS/IJAS/15.2/239-249. Copyright@2019: Hind Agri-Horticultural Society.

Article History : Received : 18.03.2019; Revised : 03.05.2019; Accepted : 10.05.2019