

Study on
CURRENT SITUATION OF MACHINERY USAGE AND
TECHNICAL EFFICIENCY OF MACHINERIES IN TEA SMALL
HOLDINGS SECTOR IN BADULLA DISTRICT

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ABSTRACT

A study was undertaken to investigate the current situation of machinery use in tea small sector of the Badulla district after distribution of different types of machineries by the government among all tea small holders through Tea Small Holding Authority (TSHDA). Five different machineries have thus been distributed among tea small holders in order to carry out the field operations using machineries as a solution for current labour shortage. The major objectives of this study were to investigate the adoption level of five machineries such as the technical efficiency of these machineries.

173 small holders from ten Tea Inspector's (TI) regions of Badulla district were randomly selected for the study. Both production data and machinery usage data were collected using a structured questionnaire. 45% of the respondents are use above machineries while 54% small holders do not use machineries in their cultivation practices. 36% of small holders use pruning machine, 16% use only holing machine and only 5.7% use TRI shear harvester. No one is using battery operated or fuel operated plucking machines. Stochastic Frontier analysis was used to measure the technical efficiency. The result of Cobb Douglas frontier analysis showed that family labor, hired labor, dolomite cost and land extent are positively related to the tea yield. Occupation, machinery maintenance cost and holing type have caused to decrease the technical efficiency. Farming experience, education level, other monthly income, machinery usage percentage, training obtained on machinery use and pruning type have caused to increase the technical efficiency of machinery use. Average technical efficiency of a machinery usage by farmers was 67% and average technical efficiency of non-machinery usage famers was 65%. It could be concluded that there is an impact of machinery usage on technical efficiency of the tea cultivation in the Badulla district.

Keywords: Technical Efficiency, Machinery usage, Stochastic Frontier Analysis, Cobb-Douglas production function, Tea Small Holding Sector