Technical Efficiency and Inefficiency Determinants of Chili Cultivation in Vavuniya District of Sri Lanka

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Increasing the productivity of green chili is important to meet the market demand as well as to reduce the food import bill. However, farmers face productivity issues due to the lack of knowledge on how to maximize the level of output at a given level of inputs. This study focuses to evaluate the technical efficiency of green chili farmers and subsequently identifying the determinants of technical inefficiency in the Vavuniya district of Northern Province in Sri Lanka. The data used in this study were based on a direct interview survey of 297 randomly selected green chili farm households conducted in 2019. The stochastic frontier analysis was used to evaluate technical efficiency. The estimated stochastic production frontier model indicates that parameters used in production such as fertilizer, chemicals, land, labour, seed variety, and irrigation had significant effects on yield. The coefficients for land, labour, and fertilizer had positive values of 1.07, 1.93, and 1.99 respectively. The results show that the mean technical efficiency of farmers is 93% ranges from 74% to 97%. This implies that there is room to improve the efficiency level of farmers on average by 7% using current technology and available inputs. The variables of age, education level, access to extension, and household size negatively affected technical inefficiency. Therefore, this study proposes providing better farmer training programs and enhance the education level of farmers and providing farmers with the opportunity of accessing better extension services to improve technical efficiency.

Keywords: Chili Cultivation, Cobb-Douglas stochastic Production Frontier, Technical Inefficiency, Production Efficiency, Determinants