

TECHNICAL EFFICIENCY OF MIRAHAWATTE ORGANIC TEA SMALL HOLDERS: A STOCHASTIC FRONTIER APPROACH

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By
**KADURUWANA RATHNAYAKAGE SUJITHA
CHATHURANGI**

**Export Agriculture Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka**

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ABSTRACT

Recently, demand for the safe-agro products have remarkably increased in the world. Sri Lankan agriculture industry is developing its potential to address it. The country is trying to be a quality organic supplier to the world market. Tea is the most prominent crop in this context. Currently, identify the ability to produce maximum output with available technology and inputs are essential for the development of the agricultural industry in Sri Lanka. This study focuses on estimating the technical efficiency of Mirahawatte organic tea smallholders using stochastic frontier model. Primary and secondary panel data was collected during the period of 2011/2012-2013/2014 from 71 organic tea small holders in Mirahawatte. Technical efficiency was estimated by a stochastic frontier function using a Cobb-Douglas model, incorporating technical inefficiency effect model. According to the results, the average technical efficiency of the farmers given by stochastic production frontier is 71.39%. Still, there is a remaining potential to develop the output levels without increasing input levels and using advanced technology in 28.61%. In Cobb-Douglas specification, land extent, family labour and hired labour had a significant effect on output of green leaves. Resulted maximum likelihood estimates were 1.168, 0.069 and 0.04 respectively. Age, gender, occupation, experience in tea cultivation, experience in organic cultivation education and crop type were significant in technical inefficiency model. Respectively maximum likelihood estimates were 0.07, (-1.652), (-1.328), (-1.705), (-0.042), (-0.39), 1.202 and 1.746. As those determinants affecting to the technical efficiency of the smallholders, appropriate recommendations were given to empower relevant policies and to increase investments.

Key words: Organic agriculture, Tea small holders, Technical efficiency, Stochastic frontier analysis