

# ESTIMATING TOTAL FACTOR PRODUCTIVE EFFICIENCY AND ITS DETERMINANTS: EVIDENCE FROM PADDY FARMING IN SRI LANKA

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## ABSTRACT

This study investigates the components of farm level total factor productivity and its major influencing factors across farmers in Mullaitivu district, Sri Lanka. The primary data was collected from five villages with the total sample of 120 paddy farmers during the period 2018 and 2019. Hicks - Moorsteen total factor productivity index is estimated and decomposed into various efficiency components and the result suggests that the farmers attained the total factor productive efficiency at 38% in 2019 which is less than in 2018. However, input – oriented technical efficiency was found to be higher than input – oriented scale efficiency and residual mix efficiency in 2019 which reveals that paddy farmers are relatively able to obtain gains in productivity from altering their inputs than scale and mix efficiency. Across farmers, the average total factor productive efficiency is 95% which is less than other efficiencies and among them, input oriented scale efficiency is higher over the study period. Tobit model is applied to examine the impact of demographic and farming characters on total factor productive efficiency and its results implied that education, amount of saving, loan amount, land quality and income from farming were the major determinants which are positively impact on total factor productive efficiency. Among these variables, the farmers who received more loan and the farmers who are maintaining the quality on land have more probability to increase the efficiency of paddy farming in the study area. Strategies to improve productive efficiency in paddy farming should emphasize on the improvements in other components that induce the farmers to alter their inputs accordingly.

**Keywords:** Hicks - Moorsteen index, input oriented scale efficiency, input – oriented technical efficiency, total factor productivity, tobit model.