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Factors Associated with the Technical Efficiency among Coconut Smallholders': A Case Study in Kurunegala District of Sri Lanka

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Abstract

Coconut industry plays an important role in the economy of Sri Lanka and as a source of rural livelihood. More than 497,000 ha of land is under coconut cultivation which is dominated by the smallholders' sector. Coconut smallholders' contributes 75% of the area (371,220 ha) and contributes 60% to the national production. Currently, The coconut productivity (yield/ha) by smallholders' shows a high variation, also the nut production depends heavily on environmental production conditions that are largely exogenously determined. In this study, the technical efficiency of coconut smallholders was estimated to identify the potential to increase the production without incurring additional cost for farm inputs. Study further investigated the factors associated with the technical inefficiency, productivity change and the technology gaps among smallholders. Data collection was done using a pretested questionnaire based survey covering 200 coconut smallholders' in 15 Coconut Development Officers divisions in Kurunegala district. According to the stochastic frontier production function with Cobb-Douglas model employed, land extent (p-0.03), labour (p-0.09) and organic fertiliser cost (p-0.09) showed significant positive effects on coconut smallholders' production efficiency. Cost of Dolomite (p-0.06) affected significantly and showed a negative effect to the production. The mean technical efficiency of the coconut smallholders' was 73%. According to the inefficiency model, the inefficiency could be decreased significantly as a result of farming experience (p-0.05), livelihood (p-0.03) and participation in farmer training (p-0.08). However, technical efficiency decreased with the existence of higher education qualification to the smallholder (p-0.007). Coconut smallholders' faced low productivity due to market constraints, lack of technology and government and non-government institutional related constraints. These findings are vital to formulate policies towards increasing productivity and technical efficiency among coconut smallholders' in Kurunegala district of Sri Lanka.

Keywords: Coconut smallholders', Resource use efficiency, Stochastic production frontier, Technical efficiency