

LABOUR AND WEATHER RELATED RISKS IN SMALLHOLDER RUBBER PRODUCTION: EVIDENCE FROM KALUTARA DISTRICT

T.D.Waduge¹, J.C. Edirisnghe², A.P.S. Fernando¹, H.M.L.K. Herath² and U.K. Jayasinghe-Mudalige²

¹Department of Agricultural Systems, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura.

²Department of Agribusiness Management, Faculty of Agriculture and Plantation Management Wayamba University of Sri Lanka, Makandura, Gonawila (NWP)

In Sri Lanka, the majority of rubber smallholders are still very poor, despite the fact that the world rubber prices are significantly high. The variability in income received due to variation in output they obtain could be one reason. Such variation in production occur due to changes in weather such as rainfall and also due to availability and use of inputs especially, labour. This study investigated the effect of labour and weather related production risks in the rubber smallholdings sector in Kalutara District. Data for the study was obtained from a survey of 500 representative smallholders selected from the district. A multistage cluster sampling was used in sample selection. The aim of this research was to evaluate the nature and level of risks associated with weather and the main input in rubber cultivation: labour. For this purpose, risk was defined as the unexplained variability in yield and thus, anything that increases this variability was deemed a risk increasing factor and vice-versa. A 'Just and Pope' (J&P) stochastic production function was used in estimation. A three step Feasible Generalized Least Square (FGLS) technique was employed in estimation to mitigate the inherent heteroskedastic nature of the estimated equation, which enabled the isolation of effects of variability in labour and weather on the error variance of the production function estimated. In order to study the risks associated with the weather and labour usage and price, coefficients of variation of these three variables were related to the error variability, in the second step in the FGLS. The estimated variance equation revealed that rainfall and labour usage are risk increasing while price is risk reducing. Weather (rainfall) is typically believed to be the primary source of loss in potential income. Although, results showed that this is true based on the sign of expected coefficients, they failed to show statistical significance. However, variability of labour and rubber price showed statistical significance. It is therefore envisaged that availability of farm labour is a key issue contributing to production risk, which is not given due consideration in policy.

Key words: Feasible generalized least squares, Risk, Just and Pope production function, Weather