AN ECONOMIC ANALYSIS OF FACTORS AFFECTING THE ADOPTION OF COCONUT-BASED INTERCROPPING SYSTEMS IN SRI LANKA

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ABSTRACT

This study analyses the effect of socio-economic and communicative factors, farm-level resource constraints, and government policies on the adoption of coconut-based intercropping (CBI) in Sri Lanka. This practice was introduced 20 years ago to overcome the two main limitations of traditional coconut monocropping, inefficient land use and low incomes to farmers, but it has not been widely adopted.

Benefit-cost, multiple regression, and categorical data analyses, and an assessment of constraints on CBI adoption using a multiperiod linear programming (MLP) model for three farmer groups, categorised using cluster analysis, were carried out using data collected from a farmer survey, on-farm CBI trials and from secondary sources.

The economic analysis reveals that CBI gives higher returns per hectare than coconut monocrops, but the benefit-cost ratio, and returns to both labour and working capital of some CBI systems, are lower than those of monocrops. The multiple regression and categorical data analyses indicate that the adoption of CBI is positively influenced by the availability of labour and cash, and by extension contacts, while it is negatively affected by rice cultivation. The MLP model results reveal that an expansion of CBI is mainly constrained by seasonal labour shortages for all farmer groups, particularly the high-income group, and by the scarcity of cash in the case of resource-poor farmers. CBI policies aimed at subsidising inputs or intercrop prices are not likely to be efficient in raising adoption, but alternative policies aimed at alleviating resource constraints would be more effective. The high risks and management demands associated with CBI also affect its adoption because of the diverse activities of coconut farmers. The less risky and reduced management demands of monocropping appear to meet the needs of the many coconut farmers with outside interests.

The study concluded that the low adoption of CBI is mainly attributable to the scarcity of different farm-level resources (other than land), at varying degrees among different farmer groups. Hence a targeted approach to alleviate them is suggested. The need for the consideration of socio-economic aspects, often neglected in the development and dissemination of CBI technology, is also emphasised.