

AN EMPIRICAL TEST OF MULTIPLE OBJECTIVE
VS. SINGLE OBJECTIVE DECISION MAKING IN FARMING SYSTEMS
AT HANGURANKETA AND WALAPANE AREAS : NUWARA ELIYA DISTRICT

By

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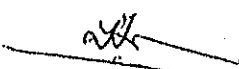
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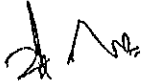
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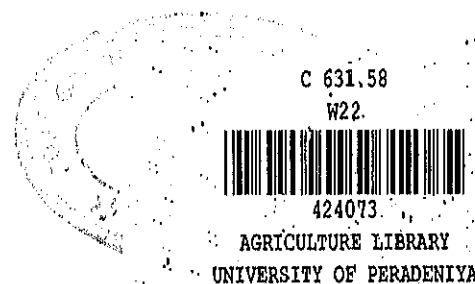

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ABSTRACT

Improving productivity of the food producing peasant sector is overwhelmingly important in Sri Lanka. In this regard, the technology improving techniques like new farming systems play a major role.

This study analyzes the behavior of farmers in making decisions in agricultural production. A sample of fifty small farmers in the Hanguranketha and Walapane area of the Nuwara Eliya district were randomly selected for the analysis.

A single criterion profit maximizing LP model, a risk minimizing MOTAD model and a goal Programming, a multiple criteria decision making model were used as analytical tools. The crop production activity levels were searched subject to a set of farming systems' constraints and to satisfy a set of farmers' objectives. Three objectives namely gross margin maximization, risk minimization and achieving minimum food requirement were considered. Models results were compared with the representative farm, in order to find out the model which best predicts the farmers' behavior.

Results revealed that these three objectives, (maximization of gross margin, minimization of risk and maintenance of minimum food requirement) are relevant for the sample farmers. There is a trade-off between these objectives.

According to the comparison, GP has the best prediction ability and LP has the least. When the subsistence nature was taken as a constraint in MOTAD, results are consistent with GP results.

Though it may appear that the farmer, as a decision maker, is irrational when looked from the conventional LP model point of view, this study concluded that farmers are rational when their multiple objectives are concerned. The recommendation or introduction of new technology such as new cropping patterns should tally with their objectives.