

AN EMPIRICAL STUDY OF THE EFFICIENCY OF
RESOURCE ALLOCATION IN MAHAWELI SYSTEM H

By

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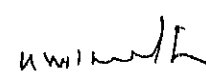
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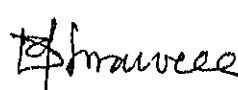
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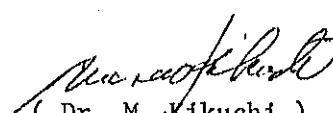
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ABSTRACT

This study investigated the resource use characteristics, profitability and economic and technical efficiencies of farming in a sample of farmers selected from the Mahaweli system H. The empirical application of this study was based on a sample of 92 farmers which comprises three locations representing head, middle and tail areas of the main channel. The number of farmers selected from each of these areas was 38, 30 and 24 respectively. Data collected relate to two cultivation seasons, maha 1985/86 and yala 1986. Paddy was the single most important crop cultivated during maha, while chilli was the most popular subsidiary crop grown during yala.

Three analytical approaches were made use of to examine resource use in this study area. From the simple tabular analysis, there was a higher average cultivated farm area for maha than the yala. The area cultivated with paddy was 0.82 and 0.51 ha during maha and yala respectively while it was only 0.45 ha for chilli. The average area cultivated had a decreasing trend along the main channel towards the tail end. A similar trend was observed for paddy productivity during the maha. With regard to use of labour inputs the head end farmers were found to be more labour intensive in all cases, while this was even more prominent in chilli cultivation. The study also revealed a male labour dominant production process, with family labour covering a great proportion of the total labour input.

The labour productivity during maha was higher than during yala, with head area having low productivity than other areas. Labour was found to be the most important cost component accounting for over 50% of the total cost. With regard to profitability, maha paddy crop was more profitable than the yala paddy crop. The analysis using the Cobb-Douglas function indicated mis-allocation of resources in most of the locations in the sample area. Land with high elasticity of production was found to be seriously under-utilised by almost all farmers especially during the maha. The elasticity coefficient for land variable was 0.87, 0.51 and 0.29 for maha paddy, yala paddy and chilli respectively. During the yala, labour was not intensively used indicating a possible increase in paddy productivity by the use of

additional labour while the coefficient of the agro-chemical variable was high for chilli production. However, over-utilisation of labour was reported during the maha. Fertiliser was over-utilised in almost all cases both during maha and yala. The calculation of returns to scale parameters showed constant and increasing returns to scale for maha and yala respectively.

Frontier production function analysis showed that the farmers were more efficient during the yala than during maha. The average Timmer efficiency index for yala and maha paddy farmers was 55% and 43% respectively while it was only 27% for the chilli growers. The average Timmer efficiency index for tail end farmers was higher than that for head end farmers during the maha. Almost all the farmers in the tail end area were at least 40% efficient while in the head area only 40% were above 50% efficient. However, the paddy growers were found to be more technically efficient than chilli cultivators during the yala.