

A STUDY ON THE SOCIO-ECONOMIC IMPACT
OF THE NEW SIX ROW RICE TRANSPLANTER

By

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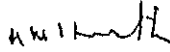
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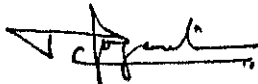
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ABSTRACT

The impact of the new six-row rice transplanter on output, employment, income and distribution in two districts of Sri Lanka was studied by examining a sample of farmers from both districts. There were three evaluations, namely the financial returns to the transplanter, the gross and net social returns to research expenditure on the transplanter and the distribution of economic gains between consumers and producers using the concepts of producer and consumer surplus.

Mechanical transplanting of paddy has reduced producers' labour requirements and has increased yields. The financial Benefit Cost Ratio for the transplanter was 1.97 and 1.75 on average, when compared with manual transplanting and broadcasting respectively. Gross Social Returns to aggregate research and development expenditures are in the vicinity of 275%. Even if displaced labour had been compensated for wage loss, Net Social Returns are still favourable.

The impact of a technologically-induced rightward shift in the supply function of a commodity grown and partly consumed by semi-subsistence farmers is examined using the Hayami and Herdt model. The average supply shift was 0.002, being 0.0032 for Group 1 farmers who have changed to machine transplanting from broadcasting and 0.0004 for Group 2 who have changed to machine transplanting from manual transplanting.

Assuming a closed-economy, but under free market conditions, the distribution of economic gains between consumers and producers depends on the proportional shift of the supply function, proportion of the commodity marketed and elasticities of demand and supply for the commodity. The difference in supply shift between Group 1 farmers (who have changed to machine transplanting from broadcasting) and Group 2 farmers (who have changed to machine transplanting from manual transplanting) has resulted in different benefits. Over a range of parameter values the income position of Group 1 farmers improved, but the income of Group 2 farmers deteriorated. Under the assumed free market situation the consumers benefitted more than the producers.