

INFORMATION SYSTEMS, COST TRANSFER AND
SOCIO-ECONOMIC FACTORS ASSOCIATED WITH THE USE OF
THE SIX-ROW RICE TRANSPLANTER MACHINE

By

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ABSTRACT

Labour intensive techniques in rice transplanting are becoming un-
popular due to increasing cost of labour, difficulties in finding labour during
the peak transplanting period and also due to other labour management
problems. Since transplanting is a time-bound operation and it is greatly
controlled by the supply of irrigation water, farmers are compelled to
complete it within a certain period of time. Because of the above reasons a
capital intensive technique has been preferred by the farmers. Initially, use
of a machine for rice transplanting has been popular among farmers. But a
few years later, most of the farmers who practiced machine transplanting,
reverted back to the traditional labour intensive techniques. This study
attempts to find out reasons for this change, drawing extensively from
adoption diffusion theory, information exchange theory and analyzing the
information system.

Two different interview schedules were developed to gather information
for this study. The first schedule was used to collect data from 90
transplanter machine owners and 55 machine non-owners in four Agricultural
Instructor's ranges in Polonnaruwa district. The second schedule was used to
collect data from engineers and private machine manufacturers (technology
producer subsystem) and from all the agricultural extension officers at all
levels (extension subsystem) in Polonnaruwa district. Categorical data analysis
was conducted, first to examine the relationships of different socio-economic
factors to the transplanter machine ownership, and then to examine other
possible interactions using multivariate models. The prevailing information

dissemination system was traced by using frequency counts. Other relevant data were summarized in percentages for interpretations.

Among the socio economic factors, social participation, contact with extension officers, cultivated low-land extent, seasonal income and wealth were found to be significantly related to ownership of the machine. The seasonal cost that is transferred to the farmer in the process of refining the technology by the manufacturers consists of repairing, including parts and labour, cost of in-filling missing hills, planting of field corners, nursery destruction and cost due to loss of transplanting time. The average cost transferred per season was Rs. 967.75. It ranges from zero to a maximum of Rs. 9,839.60.

The prevailing information dissemination system for the transplanter machine was traced. In this system, strong linkages and weak linkages were identified. Some linkages which were important but did not exist in the system were also traced. Among the types of information disseminated, information on nursery management was highest. Providing feed back to the machine owners' problems was low.

Some steps involved in the nursery management were difficult to perform within a specific time period. Applying stone-free mud on to the polythene sheet was found to be difficult. Low seedling height and the nursery destructions were the other problems. Frequent breakages, lack of trained operators, non-uniform planting, inability to plant the entire field, lack of spare-parts and after sales services, difficulty of operating the machine in ill-drained soils and difficulties of hiring the machine were the main problems related to the use of the six row rice transplanting machine.

After sale services and availability of spare-parts must be strengthened. Selling of Mark I and Mark II models should be temporary discontinued. Machine performance must be guaranteed by a reliable team of competent independent engineers. A new implement to which nursery material could be directly fed from the traditional wet-bed nursery would be more appropriate. If such a new implement could be coupled to the two wheeled tractor, farmers will find it even more attractive to adopt.