PRODUCTION EFFICIENCY OF PEASANT FARMING:

A CASE STUDY OF YATIMADURA VILLAGE IN
NUWARAELIYA DISTRICT OF SRI LANKA

BY

HEMASIRI UPALI WARNAKULASOORIYA

Thesis

Submitted in partial fulfilment of the requirements
for the degree of

MASTER OF PHILOSOPHY

in the

POSTGRADUATE INSTITUTE OF AGRICULTURE
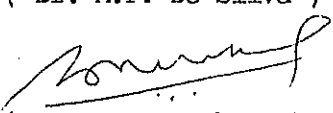

of the

UNIVERSITY OF PERADENIYA
SRI LANKA

Approved

    Supervisor

                            (Dr. M.P. De Silva)

    Examiner

                            (Dr. W.A.T. Abeysekera)

    Examiner

                            (Dr. R. Abeysekera)

May 1992.

ABSTRACT

This is a study on productive efficiency of peasant farming in Yatimadura village of Sri lanka. Based on average and frontier production function analyses, the study is aimed at evaluating efficiency and the costs of inefficiencies of peasant farming.

Under current technology, it is found that provision of irrigation water results in increasing rice yields by 36%. A change in the tenurial arrangement from tenancy to owner-operation results in increasing paddy yields by 28%. The production elasticities of land, labour, and capital in paddy farming are 0.49, 0.39, and 0.21 respectively. Therefore, one percentage point increases of land, labour and capital contribute to yield increments of 0.49%, 0.39%, and 0.21% respectively in the rainfed paddy farms.

When compared with the best farmers of the sample and the potential output is taken as the standard of measurement, the owner operators of paddy farms are found to operate with 63% average technical efficiency whilst the tenant farmers are observed to be only 48% technically efficient. Therefore, by raising technical efficiency, it is feasible to raise paddy output of owner operators by about 60% and that of tenant farmers by about 100%. When the potential input savings is taken as the standard of measurement, the owner operators of paddy farms and the tenant farmers are found to be 0.65 and 0.52 technically efficient. In other words, raising technical efficiency results in saving of 35% of resources allocated in owner operated farms and saving of 48% of the resources used by tenant farmers. Estimated allocative efficiencies are considerably higher than technical efficiencies and the results indicate a very high absolute effciency of land allocation in paddy farming. In general, allocative inefficiencies cost less than 9% of the resources used by paddy farmers. Financial costs of allocative and/or technical inefficiencies of paddy farming

are higher than the relevant economic costs, and the linear correlation between allocative and technical efficiencies also is significant.

The costs of technical inefficiency are directly estimated at average financial and economic costs of Rs. 6,220 per ha and Rs 4,260 per ha respectively in tenant-operated farms and Rs 4,780 per ha and Rs 3,250 per ha respectively in owner-operated farms. Based on the concept of output losses due to technical inefficiency, these costs are equivalent to output losses of Rs. 10,260 per ha for tenant farmers and Rs 5,900 per ha for owner-operators.

Chena farmers produce twice the yield produced by homestead cultivators using the same level of inputs. In general, doubling the current use of land and labour in mixed-cropping results in yield increments of 78% and 36% respectively. By eliminating technical inefficiencies, it is feasible to obtain a yield increment of 92% (or a resource saving of 44%) in the case of chena farming, and a yield increment of 82% (or a resource saving of 41%) in the case of homesteads.

Based on the above findings, development of infrastructure and support services, dissemination of best existing technology and new information, proper implementation of the paddy lands act, and provision of lands to the landless are recommended by this study.