

ANALYSIS OF TECHNICAL EFFICIENCY OF VEGETABLE PRODUCTION IN CONTROLLED ENVIRONMENTS

B.A.P.Kumari¹, R.M. Herath² and Y.M. Wickramasinghe¹

¹*Department of Agricultural System, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka*

²*Socio economic & Planning Center, Department of Agriculture, Peradeniya, Sri Lanka*

The purpose of this study was to estimate the technical efficiency of vegetable production in farms that are under controlled environment condition and to identify the factors that enhance technical inefficiency of farms. The data used in this study were obtained from a survey conducted in Kandy district.

The analytical framework used in this study was the maximum likelihood estimates of the stochastic frontier model estimated with the “frontier 4.1” computer software package. Total value of vegetables produced in a farm was the dependent variable while extent of protected area, cost of growth media, labour, amount of fertilizer, agro chemicals, and planting materials were dependent variables of the function. The technical inefficiency effects were expressed in terms of various explanatory variables which include the education level, experience in protected culture, employment and age of the farmers.

The results suggest that total protected area, cost of growth media, and cost of planting material had significant effects on total value of vegetables production. The mean technical efficiency of the farmers was found to be 35%, indicating that the production would increase by 65%, if all the farmers achieved the technical efficiency level of the best farmers. The results of the estimation showed that there were significant positive relationships between age, education, and experience with technical efficiency.

Key words: Protected agriculture, Technical efficiency