

Executive Summary

The study provides the detailed investigation of cost of production of paddy farming in Kegalle and Kurunegala districts of Sri Lanka. The main focus of the investigation was analyzing the factors affecting the variation in cost of production of paddy in Sri Lanka with the special reference to different Agro-climatic zones and different water regimes.

The study sites were selected from the two districts in order to represent the dry, intermediate and wet zones climates and major, minor and rainfed production areas. The primary objective of the study was to diagnose the main socio economic factors affecting the cost of production of paddy cultivation in Sri Lanka. The specific objective are to (i) measure the technical and economic efficiency of paddy farming in accordance with different agro ecological and source of water conditions, (ii) to identify and analyze the factors which influence production of paddy and their costs, (iii) to determine the average amounts and cost of inputs involved in the production of one kg of rice and (iv) to study institutional aspects and transfer of technology.

The research methodology was based on review of literature, questionnaire survey and participatory research techniques. Questionnaire survey was conducted using multistage stratified random sampling techniques. Sample size was 120 farm families from Kurunegala district, which represents 40 farm families each from major irrigation (Ridibendi ela), minor irrigation (Udagama and Bandara Koswatta minor irrigation) and rainfed areas (Pannala area). Ninety farm families were selected from Kegalle district (Dedigama and Rambukkana area), which represented only rainfed areas. The study covered the period of Maha 2000/01 and Yala 2001. The data was analyzed through the descriptive analysis and statistical analysis such as frontier production function and multiple regression.

Secondary information obtained suggests that paddy yield has stagnated and the question of viability of paddy farming has arisen. The cost of paddy farming has increased, while paddy price has decreased in recent times, hence farmers are faced with a very serious cost-price squeeze. The study findings reveal that, the average paddy yield per hectare in major irrigation, minor irrigation and rainfed farming in Kurunegala district during Maha 2000/01 was 4.6t, 3.2t and 3.7t respectively. The major irrigation yield was 30% and 110% higher than minor irrigation and rainfed cultivation yield respectively.

According to frontier production analysis, value of the mean technical efficiency is not closer to 1 in any study location indicating that paddy cultivation is technically not fully efficient in all locations. Nevertheless paddy cultivation is relatively efficient in major irrigation areas (76%) compared to the minor irrigation (61%) and rainfed areas (68%) of Kurunegala district. However, technical efficiency in the rainfed areas of Kegalle district is only 54%.

The multiple regression analysis indicates that the land size has significant impact on increasing production in all areas. Though there is no clear relationship between labour use and the level of production, it has a positive effect in rainfed areas of both districts.

The study findings indicates that the cost of production in major irrigations, minor irrigations and rainfed areas of Kurunegala district varied indicating relatively high cost in rainfed areas and least cost in minor irrigation. Cost in Kegalle district also shows a similar situation. The cost for producing one kg of paddy varies from Rs. 9.58, 12.32 and 12.36 in the areas of major irrigation, minor irrigation and rainfed areas respectively in Kurunegala district. The average cost for producing one kg for paddy in Kegalle district is around Rs. 11.00.

The average yield per acre in major irrigation areas during Maha 2000/01 was above 90 bushels and it was around 60 bushels and 55 bushels in minor irrigation and rainfed areas respectively. Thus yields in major irrigated areas is significantly higher than minor and rainfed areas due to water availability, better management practices and commercial cultivation practices, but yields in rainfed areas have gone down mainly due to lack of water mostly during maturing phase of the plant, small land holdings tenant cultivation and inefficient cultivation practices. The yield gap between research yield and actual yield is high in all areas, especially a significant variation in rainfed conditions. The factors affecting for the existing yield gap are associated with high risk of crop failures in rainfed and minor irrigated areas, poor extension services and constraints in social and institutional factors.

Considering existing yield level between efficient farmers and low efficient farmers, the yield level of low efficient farmers could be increased by 24%, 39% and 32% respectively in major, minor and rainfed areas without any additional cost. This can be achieved by use of production factors in an efficient manner, especially giving attention in the use of seed, fertilizer and agro-chemicals. In rainfed areas labour use efficiency is also very low. Results obtained from stochastic frontier production function analysis shows that, farmers' age, farming experience and level of education are the significant factors causing inefficiency among farmers in minor irrigation systems. Therefore, it is necessary to provide policy guideline, training, demonstration and field level research programme to enhance the farmers' knowledge, skills and entrepreneurship in order to improve the productivity.