

AN ANALYSIS OF COMPETITIVENESS OF THE RICE SECTOR IN SRI LANKA

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ABSTRACT

Rice is cultivated under different agro-ecological regions in Sri Lanka during both *yala* and *maha* seasons. Productivity of rice varies from region to region due to many factors. As the country is promoting free trade, domestic farmers are forced to produce rice at a competitive price to compete in the international market. These circumstances render more opportunity for the regions that are efficient in rice production, while generating difficulties for the others. In this backdrop, a study was conducted during *yala* 1998 and *maha* 1998/1999 to examine the degree of the efficiency of rice production in different regions in order to identify the best suited regions for rice production and to channel the future investments in rice research. Domestic resource cost ratios for different regions were estimated. In some regions the competitive coefficient is less than-1 having a comparative advantage of domestic rice production. This finding set the direction to reorganize the rice sector in an efficient manner in the face of challenges posed by free world trade.

KEY WORDS: Competitive price, Comparative advantage, Domestic resource cost ratio, Free trade, Regional specialization.

INTRODUCTION

Rice, the main crop as well as the staple food of the nation is deeply rooted in the life of Sri Lankans. Its contribution to economy is 3.5% of gross domestic product in 1999. Increasing the domestic production of rice had been the central objective of Sri Lanka since 1950's. Output of rice increased to meet the local requirement due to the concerted efforts made in the rice sector by all governments. Consequently, peak production registered in 1999 and the level of output reached to 2.868 million Mt, which is within the reach of self-sufficiency. However, recent changes in the area of trade liberalization will push the country to shift the future policy direction towards free trade (Thenuwara, 1998) and that will force the country to remove trade barriers thereby allowing greater market access for rice. Under these circumstances, the export, import and production will be determined by the price competitiveness of rice if other factors are same. The price competitiveness of rice is measured by the concept of comparative advantage (Simatupang, 1991) and this relates to the use of resources in the domestic production of rice with the possibility of international trade. As long as the gap between domestic rice price and international price of rice exists, the rice farmers of Sri Lanka would face difficulty and the objective of self-sufficiency, food security, equity etc. will be deemed inefficient within the context of liberalization.

Therefore, Sri Lankan rice economy should consider economic efficiency and attempts should be made to improve the price competitiveness of rice. A country has a comparative advantage in producing a commodity, if the social opportunity costs of domestic resources in producing an incremental

unit of that commodity is less than its border price and this gives the comparative advantage (Master and Nelson, 1995). This production activity is worthwhile economically to the nation and it employs its resources in an efficient manner. The measure of comparative advantage estimates give the degree to which an activity is efficient or inefficient. When these measures are estimated they could provide ranking of the rice production areas by the degree of efficiency.

Rice production in Sri Lanka is widespread and it is grown under wide range of physical environment. The performance of crop vary as there are large regional variations in rice productivity within the country and the comparative advantage is likely to vary regionally. This itself is important information because it establishes the efficiency of resource use between regions.

Since the domestic rice production would be facing competition from imports, the emphasis should be on increasing productivity in a cost effective manner. This, in turn, would call for improvement in production efficiency. One way of achieving this high efficiency is the development of rice specialization areas. The best suited areas should be identified and these areas should be supported with physical and institutional infrastructures.

In this backdrop, this study attempts to estimate domestic resource cost ratio for various districts, identify the efficient and less efficient rice producing areas and provide guide lines to allocate scarce resources for the purpose of improving the competitiveness of rice sector in Sri Lanka in order to remain competitive with rest of the world.

METHODS

Resource use efficiency is becoming important particularly in the context of international free trade policy. The resource use efficiency is measured by the Domestic Resource Cost Ratio (DRCR) which is one of the most widely used and numerical indicator of resource use efficiency (Monke and Pearson, 1986). The World Bank, FAO, and other international organization use the DRC ratio for sectoral studies and policy analysis (Master and Nelson, 1995). The DRCR is defined as the real value of domestic (non-tradable) factor inputs used in activity per unit of tradable value addition (Isabelle, 1990). Thus,

$$DPCR = \frac{\sum_{j=k+1}^n A_{ij}V_j}{P - \sum_{j=1}^k A_{ij}P_j^b}$$

Where, A_{ij} , $k+1$ to n refer to domestic resources,
 A_{ij} 1 to k refer to traded inputs,
 V_j refer to shadow prices,
 P_i^b refer to border price of output,
 P_j^b refer to border price of traded input.

The numerator gives non - traded domestic resources valued at shadow prices. The value-added is the difference between the unit output price and cost of tradables to produce rice. This is evaluated at border prices which is included in the denominator. The DRCR is greater than 1 indicates that the production is not socially desirable because the economy commits more worth of domestic resources to produce one unit of output. The DRC ratio has to be less than one for an efficient production and that activity will have a comparative advantage.

THE DATA

Data required for this study were collected from the cost of cultivation surveys of socio economic and planning centre, during the period of *maha* 1998/1999 and *yala* 1999 seasons. The following districts were selected for this study.

<i>Agro Ecological.Zone</i>	<i>Districts</i>	<i>Irrigation regime</i>
Dry Zone	Anuradhapura, Kalawewa Hambantota, Pollannruwa and System C.	Major Irrigation
Intermediate Zone	Kurunegala	Major Irrigation
Wet Zone	Kalutara, Matara & Kandy	Rainfed

All inputs and outputs were classified as tradable and non-tradable. This distinction is made to estimate the DRC ratio accurately. The average conversion factor (0.785) is used to convert the market value of domestic resources into shadow prices, which reflect the economically efficient prices. This conversion factor is based on 1992 and is the result of semi-input-output (SIO) analysis developed by National Planning Department of Ministry of Policy Planning and Implementation of Sri Lanka.

RESULTS AND DISCUSSION

Domestic resource costs (DRC) was estimated for both *yala* 1998, *maha* 1998/1999 seasons are given on table 2 and 3 respectively. *yala* crops have low DRC ratios indicating higher comparative advantage compared to the *maha* season crop. At the district level, only four out of eleven districts

have DRC ratio less than 1. Anuradhapura, Kalawewa, Pollannaruwa and System C, where paddy production is efficient and these districts fall under major irrigation scheme. In Kurunegala, where cultivation is under major irrigation, the observed DRC ratio of 1.03 implies that rice production is only marginally inefficient. The DRC estimates of Kalutara, Matara, and Kandy indicate that these districts have high DRC ratio which refer that rice production in these districts is un economical from the point of view of social costs and benefits.

Table 1: Domestic resource cost ratio for rice, *yala* 1998.

<i>Districts</i>	<i>Non tradable Rs/Ac</i>	<i>TradableRs/Ac</i>	<i>DRCR</i>
Anuradhapura (IR)	10651.03	4203.15	0.95
Kalawewa (IR)	10718.47	4028.92	0.95
Hambantota (IR)	13438.12	4356.07	1.18
Kurunegala (IR)	11101.10	3796.08	1.03
Polonnaruwa (IR)	11667.02	4125.92	0.97
System C (IR)	10382.68	3652.76	0.86
Kalutara (RF)	9538.11	2781.58	1.60
Matara (RF)	8616.70	3140.09	1.20
Kandy (RF)	12621.45	1863.04	1.90

IR = Irrigated; RF = Rainfed

Table 2: domestic resource cost ratio for rice, *maha* 1998/1999.

<i>Districts</i>	<i>Non Tradable Rs/Ac</i>	<i>Tradable Rs/Ac</i>	<i>DRCR</i>
Anuradhapura (IR)	12303.75	3940.35	1.08
Kalawewa (IR)	12360.94	3731.73	1.01
Hambantota (IR)	13599.14	4337.51	1.15
Kurunegala (IR)	11822.60	4216.27	1.26
Polonnaruwa (IR)	11439.76	4291.46	1.02
System C (IR)	10605.40	3471.99	0.94
Kurunegala (RF)	10034.62	3357.67	1.33
Kalutara (RF)	10353.20	3735.94	1.89
Matara (RF)	10115.76	3532.80	1.31
Kandy (RF)	12492.71	1933.55	1.41

IR = Irrigated; RF = Rainfed

CONCLUSION

Coefficients of competitiveness of rice production indicate that dry zone region highly suitable for rice production as these regions possess comparative advantage of rice production. Since these regions have high production potential, these areas can be identified as best suitable regions which could be developed for specialization of rice. Future rice research investments could be channeled to these areas to exploit the potential to increase greater productivity in order to remain competitive under the global situation for next decades. Other areas like Kandy, Matara and Kalutara could

be released to cultivate suitable high value crop other than rice, which will bring more income for farmers.

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