

論文の内容の要旨

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論文題目 PRICE AND TRADE POLICY DISTORTIONS IN FOOD CROP SECTOR IN SRI LANKA:
IMPLICATIONS ON INCOME AND POVERTY

(スリランカの食用作物部門における価格および貿易政策の歪み：所得と貧困への意味)

Food crop sector is the principal driving force of the rural economy in Sri Lanka and is a multifunctional sector for the development. Like many other governments in the world, the government of Sri Lanka also influences the economy through many channels such as expenditures, taxes, price and monetary policies. All successive governments in the country since independence have taken major efforts to strengthen the agriculture sector specially the paddy and other food crops to achieve food security through massive transfer of public funds. However, government interventions in food crop sector price setting mechanism lead to distort the sector incentives. Also, direct and indirect interventions on food crop sector have strong consequences on welfare of both the producers and consumers in the country. If the farmers' welfare is accomplished through a high cost to the consumer, it may cause many problems and deteriorate resource allocations of the country.

This study therefore, focuses on incentive framework for Sri Lanka's food crop sector with emphasis on the price and trade policies in rice. The study further examines the effects of fertilizer subsidy policy changes, the level of protection in food crop sector, and the implications of removal of price and trade policy distortion on household income and poverty with special focus on rice.

Following the introduction, the second chapter of this study reviews the food crop sector policies with special attention to rice since after the independence in 1948. In addition, political economy of the food crop sector incentives is also examined. The food crop sector in the country has been protected for decades through provision of various input and output subsidies, marketing policies, trade policies, investment in infrastructure and other development projects. Among them fertilizer subsidy and import trade policy have been playing important role on

rice. Examining the political economy of the food crop sector suggests that, country's food crop sector is more protected under the left-wing SLFP coalition than the right-wing UNP government. However, highlights of the policies indicate that the absence of a long term policy agenda and weaknesses in implementation of programmes and policies are the major hindrance to the development of the food crop sector. In addition, low predictability and lack of transparency in public fund usage, weaknesses in monitoring, corruptions, misallocations of funds and resources and several other problems in the government sector would further deteriorate the sector performances. Despite huge incentives given to the food crop sector, its productivity decreases continuously.

The third chapter of the study examines long term trends in paddy production sector in order to evaluate the cost structure and profitability of paddy farming. The study shows that greater efforts on increasing the paddy production by successive governments have resulted in significant increase in rice yield from 1.6 mt/ha in 1960 to 4.4 mt/ha in 2015. The increase in rice production and yield contributes to reduce the import dependency of rice in great extent although it has been fluctuated over the years. Fertilizer consumption tripled from 1961 to 2015 which contributed mainly to increase the paddy yield. Meanwhile, input costs in rice cultivation particularly the labour, machinery and agro chemical cost have markedly increased in the past few decades. In contrast, farmers' cost share on fertilizer has declined significantly as a result of huge fertilizer subsidy granted. However, continuous increase in cost of production (mainly due to other input costs such as machinery and labour) and the low productivity in the paddy sector resulted in profitability decline over the years. Therefore, the majority of farmers consider rice farming is unprofitable in the sense that income derived from rice cultivation alone is insufficient to fulfill the basic needs of the farming households. Therefore, this chapter highlights the importance of reducing cost of production and increasing net income through new technology and income diversification to enhance their living conditions.

The fourth chapter studies the impacts of fertilizer subsidy reforms in the rice sector on paddy production, input supply and demand, farm profit and the government budget. In addition, cost effectiveness of the subsidy is also evaluated in terms of transfer inefficiency. Meanwhile, this chapter also examines the impacts of direct cash transfer policy which has been proposed by the newly elected government with the aim of reducing chemical fertilizer while encouraging farmers to use more organic fertilizer. The analysis is based on demand supply equilibrium model with input markets, using two stage CES technology and base year 2010 is used. The results indicate, complete fertilizer subsidy reduction would reduce rice production by around 4%, while 36% decline in the fertilizer demand for paddy cultivation. Moreover, fertilizer subsidy would cause the government to spend SLRs.

1.38-1.91 to increase farmers' profit by one rupee which means that economic efficiency of the subsidy is low compared to the annual budget spend on fertilizer. In addition, complete cut of subsidy would reduce the labour and machinery demand by 2.8% and 3.2% respectively. If the fertilizer subsidy is withdrawn completely, farm profit will be decreased by 40%. Further, it is estimated that the proposed direct cash transfer would contribute to reduce public expenditure by 85% with 3% production drop. Moreover, this would increase the rice price by 14.5%. However, proposed direct transfer system is hardly cost effective since there is no obligation for the rice farmers to obtain direct cash payment.

The analysis of output supply and input demand elasticities of rice production using the restricted normalized translog profit function approach in Chapter 5, suggests that the changes in market prices of inputs and output significantly affect the farmers' profits, rice supply and the use of resources in paddy cultivation. The supply elasticity of rice with respect to its own price is 0.5 and the supply elasticity of output with respect to fertilizer price is -0.05 on an average. Therefore, paddy production in the country is greatly response on the paddy price; hence assurance of attractive output price is important when subsidy remove. In addition, results suggest that fertilizer demand in the country is inelastic but significant to its own price. Therefore, fertilizer subsidy is one of the main factors to increase fertilizer demand. In addition, the low elasticity of substitution between labour and fertilizer and other inputs indicates that there is a complementary relationship among these inputs hence their combined application increases paddy production synergistically.

The Chapter 6 of the study examines the import trade structure and evaluates trade protection in food sector in the recent years in terms of TPR, NRP and ERP. Results show that the average total protection (TPR) of agriculture tariff lines exceed the TPR for industrial tariff lines which means agriculture sector is highly protected over the years in the country. The investigation further shows that structure of import tariffs in the food sector is highly complex and continually changing. This would result in uncertainty in the market and cause adverse impacts on both consumers and producers. Further, results reveal that the ad-hoc tariff changes are more prominent in major food crops of rice, potato, chilli and big onion. The effective protection rate (ERP) for major import competing products of rice, potato, chilli and onions are positive and considerably high, means that producers of such commodities receive artificially high income due to contemporary policies. Moreover, fertilizer subsidy is the major driver of the effective rates of protection in rice and is a significant fiscal cost in the food sector budget. It is also believed that, the high positive protection on producers results in negative impact on consumers especially who

belong to the lower income categories of the society.

Chapter 7 analyzes the income and poverty implications of price and trade policy distortions in rice using policy simulations. The results suggest that the welfare of paddy farmers is declined if both fertilizer subsidy and border protection is removed. However, the negative impacts get soften in the long run when supply and demand elasticities are incorporated. Especially the current fertilizer subsidy has greater impact on paddy farmers' welfare. In contrast, the larger populations of consumers are favorably affected when interventions are removed, hence removal of such intervention in terms of tariffs and other taxes as well as fertilizer subsidy would be benefited on larger portion of consumers. Among the paddy producers, poor households with smaller farm size gain the larger proportion of benefits when both interventions are removed. Therefore, current protectionist policies in rice give fewer benefits to the small farmers. In the meantime, removal of border protection only, would increase the welfare of the majority of rice producers in the long run except the households who cultivate more than 10 acres of lands. In addition, simulations with transfer payments given to all households below the poverty line or paddy households only will reduce the negative implications on income and poverty of the households. The largest poverty reduction in the long run is observed for the estate sector consumers with poverty reduction from 23% to 19.5% when both interventions are removed accompanying transfer given to paddy households only. In addition, the overall poverty gap reduces from 5.38 to 4.12 with this simulation.

Finally, this study suggests to promote the private public partnership, develop long term agriculture policy agenda for the country, crop diversification, use new technology to reduce total production cost and improve the quality of rice, produce new rice varieties which have high demand, make adjustments to the fertilizer subsidy policy, implement attractive output price policy, targeted transfer payments to the households, regular mechanism to absorb the additional labour in rice farming to other industries, simplify the current tariff schedule to reduce the complexity in the process and move toward uniform and low tariffs to improve the incentive framework of the food crop sector in the country. It would be more important to consider toward invest in agriculture research and other infrastructure in order to gain from the agricultural sector in the country. Since, the government faces difficulties in satisfying the interests of both producers and the consumers, making adjustments to the current price and a trade policy are highly politically sensitive in the country.