Rice self-sufficiency and sustainability in rice farming: a false dichotomy?

RESEARCHES & INNOVATIONS

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Self-sufficiency in Rice had been a very familiar slogan among the Sri Lanka over the decades. It has however remained an un-realized ideal notwithstanding the numerous projects and strategies introduced by the successive Governments since independence. Even at the moment we are importing rice and not earning by exporting rice. Presently, the national agricultural policy and policy actions have been more forwarded to sustainable agriculture rather than self-sufficiency of rice. Recently produced national agricultural policy document propose ten thematic areas for agricultural development and five thematic areas out of ten directly focused the sustainability concept. At the same time, there has also been widespread critique of policies designed to support food self-sufficiency, on the grounds that they are inefficient and disrupt sustainability of

agriculture. This debate has typically been cast as one in which political consideration clash with economic reasoning resulting in costly outcomes. The purpose of this article is to analytically study the trade-off between newly proposed sustainable agricultural policies and strategies with self- sufficiency of rice and food security objectives.

Historical Background

The Sri Lankan economy was on a sound footing at the time of gaining political independence. In early 1950s, with the end of Korean war Sri Lanka faced a dearth of foreign exchange. By 1960s the situation further aggravated manifesting itself in a grave economic crisis. Being a welfare state Sri Lanka could hardly change it economics policies that could cause hardships to the masses. All sectors received subsidies from the Government, that was particularly evident in the rural agricultural sector. Seventy percent of the population eked out a living from rural agriculture and every successive Government was compelled to keep them contented if the ruling party were to return to power. By this time the country faced a grave economic crisis, in that a considerable share of the foreign exchange earning of island had to be spent on rice imports as the local production fell short of the total requirement for consumption with the higher increasing population.

The other adverse feature of this entire exercise is the very high expenditure on the rice subsidy. The total rice subsidy amounted to Rs. 85.1 million in 1949. This rose to Rs. 165 million in 1956, to Rs. 420 million 1965 and to 1086 in 1975. This eloquently speaks for the welfare concept pursued by every successive Governments since independence. The magnitude of this problem is clear from the upward trend in the percentage spent on the rice subsidy out of a total capital expenditure which was 15% in 1949, 29% in 1956, 70% in 1964. With a view to increasing the paddy production, every government that came to power adopted a duel strategy, namely expansion of the area cultivable and introducing intensive cultivation methods thereby increasing the yield per acre. In 1975, of the total expenditure on imports, 20 percent was spent for the import of rice. By 1992 this percentage had come down to 1.9%. In 1975, of the total requirement of rice, 55% was locally produced. This percentage had increased to 90% by year 1992.

Current Situation

Paddy production in year 2020 is 5.1 million metric tons from a total 1,066 thousand hectares (Ha); milled production is estimated to be 3.57 million metric tons in year 2020.Typically, the Maha, or major crop benefits from annual monsoon rains, enabling larger plantings. The Yala or minor crop tends to have lower water availability, resulting in lower plantings and lower overall production. The Maha crop is typically harvested in March/April and provides about 60 to 65 percent of Sri Lanka’s annual rice production. The Yala crop is typically harvested in August/ September and provides 35 to 40 percent of Sri Lanka’s annual rice production. Paddy production is mostly the work of smallholder farmers in Sri Lanka. About 70 percent of the paddy holdings of the country are less than 2 acres (0.8 Ha) and 95 percent of the paddy holdings are less than 5 acres (2 Ha). Till 2020/21 Maha season paddy farmers with less than 2 Ha received a 90 percent fertiliser subsidy which gave a net price to farmers as low as Rs.500 per 50 kg (about 3 USD) bag of fertiliser. About 99 percent of the farmers are cultivating new or

improved varieties. Due to the prolonged dry weather conditions, farmers are advised to cultivate shorter duration varieties, which affects production figures. About 70 percent of rice cultivated is of the 14-week varieties. Only 4 percent of the paddy produced uses longer duration varieties.

The most popular variety, with some 60 percent share, is the long grain rice (Nadu); 22 percent of production is short grain rice (Samba). Although white pericarp varieties are still most popular, red pericarp varieties and traditional rice varieties are becoming more popular. With a total population of 21 million, Sri Lanka's per capita annual rice consumption is approximately 107 kg per person. However in year 2020, per capita availability of rice is (kg per year) is 164. Across the country, varietal preferences include both long grain and short grain rice, raw or boiled form, in white or red pericarp. Nadu or Long grain raw rice (non-parboiled) is the most-consumed type.

The Future Prospects

Since gaining independence in 1948, agricultural policies in Sri Lanka have generally been aimed at improving its self-sufficiency in all food crops. Particularly, the target for rice production (the staple food of the country) was established at 95 percent of domestic demand at present. Due to a combination of high yielding varieties, paddy expansion and increased use of irrigation and fertiliser, rice production has steadily risen to meet this target. As a result, Sri Lanka has been almost entirely reliant on its own rice production in year 2005. While the country is currently able to meet domestic demand for rice, it is unclear whether the country can continue to do so under projected population growth. Because, year 2020 Sri Lanka has imported 16,000 metric tons of rice and total cost was around Rs. 1,782 million. The population increase every year is around 0.12 million and accordingly the total rice requirement of the country too will increase by 12,412 mt per year. By year 2030, the country's required additional rice requirement is around 124 thousand metric tons compared to year 2020. By the year 2030, 6 percent more than the present local supply will be necessary to meet the demand. The only way to meet this challenge will be to increase the production locally.

There are two options before us whereby we can increase local production of rice. One is increasing the hectarage under cultivation and the other is to increase the yield per hectare of paddy. The latter option is more feasible in that the production of paddy could be increased through the adoption of modern technology and through research to increase the yield per hectare. The other option is to increase production by bringing under cultivation annually a hectarage of paddy. To achieve this target, new irrigation sluices will have to be undertaken while completing the proposed projects by the department of Irrigation and Mahaweli Development Authority. If we are not enabling to fill the additional demand by locally, by 2030 the annual additional expenditure for rice import would be Rs 13,814 million per year.

The New fertiliser & Chemical Policy- New Challenge?

The fertiliser subsidy program is one of the longt-lasting, most expensive and most politically sensitive policies implemented to promote rice cultivation in Sri Lanka. It was initiated in 1962 (that is, at the onset of the Green Revolution) with the main objective of encouraging farmers to switch from traditional rice varieties to high-yielding varieties (HYVs) that are highly responsive

to chemical fertilisers. Since then, however, the provision of the subsidy has become customary, and successive governments have been under tremendous pressure to continue the subsidy despite budgetary constraints. The subsidy policy has evolved over time. During the period 1962–89 the subsidy was provided for all three main types of fertilisers - nitrogen (N), phosphorus (P) and potassium (K) - targetted primarily at paddy. Subsidies were not provided during 1990-94 but were reintroduced in 1995 for all three types of fertilisers. The subsidy was limited to Urea during 1997–2004. Since 2005, the subsidy has again been expanded to cover all three types.

The price of a 50-kilogram bag of fertiliser has been set at US$ 3 regardless of the world market price. Paddy farmers are eligible to apply for the fertiliser subsidy provided that they have legal title to their paddy lands. The subsidy payment constitutes 2.24 percent of total government expenditures and has become a massive burden on the Treasury. Currently the Government's annual expenditure on chemical fertilizer import is US$ million 400. Based on massive burden on Government expenditure and negative social and environmental impact present government newly introduced regulation to restrict forthwith the import of chemical fertilisers and pesticides by the Gazette Extraordinary No 2226/48 of May 6, 2021, to achieve the broader development goal.

Agricultural Economists of Sri Lanka, has predicted massive economic losses due to potential yield losses in the absence of proper substitutes for chemical fertilisers and pesticides with the implementation on the import ban on fertilizers and pesticides. The immediate adverse impacts on food security, farm incomes, foreign exchange earnings and rural poverty can be detrimental to achieving the cherished long-term goals. Agronomic studies reveal that the average yield from paddy can drop by 25% if chemical fertiliser is fully replaced by organic fertilisers. This loss in productivity could reduce the profitability of paddy farming by 33%. The annual production losses due to yield reduction is around 896,000 metric tons and the financial value of this losses is US$ 500 million and it is exceeding the total cost of chemical and fertiliser import.

The usage of chemical fertilizers leads to a better harvest However, the negative consequences caused on human lives through pollution of lakes, canals and groundwater due to the chemical fertilisers outweigh the profit. The health sector has pointed out that the effects of chemical fertilisers have led to a number of non-communicable diseases, including kidney diseases. The expenses to treat these patients and the impact on human lives caused by these chemical fertilisers remain high. However, converting a country from conventional agriculture to a fully organic one overnight is a certain impossibility. It has to be a gradual process that can take 10-20 years or even more.

No country in the world has done such a miraculous transition and there will not be even in the future. Therefore, without clear road map, this new policy decision will generate food security issues and it is a newly created challenge to self-efficiency objective of rice in the country. Therefore, sustainable rice farming and self-sufficiency objectives will be a big challenge to Sri Lankan policy makers and trade - off between these two goals impact on political and economic stability of the country. Sri Lanka was ranked 66th among 113 countries in the Global Food Security Index (GFSI) - 2019, which considers the dimensions of food availability, affordability, quality, and safety of foods. It was ahead of its peers in South Asia, but behind peers such as

Indonesia and the Philippines in South East Asia. India was ranked 72nd, with Pakistan (78th) and Nepal (79th) even lower. Trade-off between food security, self-sufficiency and sustainable agriculture would be a new challenge in the agriculture sector in Sri Lanka.

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