Import Ban on Chemical Fertilizers and Other Agrochemicals:

Short-term Impacts on the Paddy Sector

HARTI

POLICY BRIEF

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The Government of Sri Lanka enacted the Import and Export Regulations No. 7 of 2021 which banned the import of chemical fertilizers and other agrochemicals. The objective was to promote organic agriculture to make agricultural system more financially and environmentally sustainable. The Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) conducted a survey from August to September 2022, comparing the 2020/21 and 2021/22 Maha seasons to identify the effects and consequences of the fertilizer policy changes on rice production, household economy and food security. Only 3 percent of paddy farmers were in support of a complete shift to organic farming, while 46 percent believed only chemical inputs are suitable, indicating a strong negative response to the ban. Yield reduction of paddy in the 2021/22 Maha season was more than half when compared to the previous season, a much higher yield loss than expected. Therefore, moving towards complete organic cultivation was not desirable or sustainable. The yield penalties and unmatched price premiums of farm inputs can be multiple threats to food security. There is a need for more environmentally and economically sustainable fertilizer policies but extreme solutions such as a complete ban or restrictive licensing might not be feasible in the short run.

5 percent
Reduction in paddy extent cultivated

53 percent
Average yield loss of paddy per acre

94 percent
Main reason for yield loss was unavailability of adequate fertilizer

72 percent
Of farmers started to incorporate organic fertilizer after the import ban

97 percent
Of farmers believed obtaining nutrients solely by organic fertilizer is impossible

Background

The sudden implementation of import restrictions on chemical fertilizers and other agrochemicals caused significant unease and uncertainty among farmers who were used to relying on these inputs for their agricultural practices. This change in policy led to a sharp decrease in crop yields and posed a serious threat to food security. However, the government later eased the import restrictions starting from November 30, 2021. This study compares the two main paddy cultivating seasons (2020/21 and 2021/22), before and after the import ban, among 625 paddy farmers from 11 districts representing Major, Mahaweli, Minor and Rainfed irrigation systems.

The study revealed the following major findings that are important for policy-level decision-making:

- An overall 5 percent reduction in the paddy extent cultivated was recorded. This was either by temporary suspension of cultivation or farmers deciding to cultivate smaller extents than usual. However, this reduction was reported from only 8 percent of farmers.
- A 53 percent average yield loss of paddy per acre.
- The majority of farmers (62 percent) recorded more than 50 percent of yield loss.
- The main reason for yield loss cited by farmers was a lack of chemical fertilizers in required quantities (54 percent) and the failure to apply chemical fertilizer on time (40 percent).
- The number of farmers using new organic fertilizers has gone up by two thirds.
- Emergence of 51 percent of new organic fertilizer producers within the farming community.
- A major issue in organic fertilizer production was unavailability of sufficient raw materials required for production.
- A significant number of paddy farmers believe that the government's policy of shifting to exclusive organic farming is unrealistic with respect to obtaining a sufficient supply of plant nutrients in a context where the majority prefers chemical inputs.
- The study also reveals how livelihood strategies have altered to cope with constraints caused by the policy changes. However, the majority of paddy farming families have not adjusted livelihood strategies other than spending their savings to mitigate food shortages.

The survey findings suggested that when a ban on agrochemicals was to be implemented, short-term impacts on the paddy sector could be significant, including a substantial decrease in paddy yield, increased demand for organic fertilizer and shortages, creation of informal markets and price hikes.

The policy has had a significant impact on rice production and productivity in all districts. Although more environmentally and economically sustainable fertilizer policies are needed, extreme solutions such as a complete ban or limited licensing have not been successful in the short term.

Changes in the paddy extent cultivated

Considering the total paddy extent cultivated by farmers in the sample, there was a 5 percent reduction in the 2021/22 Maha season compared to the previous season. This reduction was reported by 8 percent of farmers who either cultivated less land extent than usual or temporarily suspended cultivation. This indicates that there was no considerable change in paddy extent cultivated after the import ban. A majority of farmers from wet zones reduced the extent cultivated than those in dry zones. This contributed to the concerns of household food security in wet zones.

Changes in paddy yields

The overall average yield loss of paddy per acre is 53 percent, which is more than the figures predicted by many experts. Yield data before and after the import ban confirmed that 62 percent of farmers encountered more than a 50 percent yield loss. The main reason for substantial yield loss was stated as not having chemical fertilizers in required quantities (54 percent) and the failure to apply chemical fertilizers on time (40 percent).

Application of agrochemicals

Even though there was an import ban and shortage of stocks, 70 percent of farmers had access to chemical fertilizers, either in adequate quantities or less than what they had in the 2021/22 Maha season. This indicates that farmers had access to chemical fertilizers in the market or had excess stocks of their own. Among the chemical fertilizers, Urea, MOP and TSP were used by 82 percent, 51 percent and 32 percent of paddy farmers respectively, but were inadequate.

Overall, 71 percent of farmers were able to apply pesticides irrespective of the irrigation type in the 2021/22 Maha season. This indicates that even while the ban was in effect, there was considerable access to pesticides, albeit in smaller quantities. The proportion of farmers who applied one or more chemical fertilizers or pesticides in the Mahaweli system and major irrigation system was higher than those cultivating under minor irrigation or engaged in rainfed farming, indicating the existing institutional and strong marketing setup in water secured areas.

Source of agrochemicals

Among the farmers who applied chemical fertilizers, 43 percent obtained it from the open market at a higher price while 31 percent used what they had already purchased and stored. In addition, 17 percent of farmers purchased agrochemicals from the Agrarian Service Centers and 3 percent from the plantation crop sector. Findings also show that 6 percent purchased from the informal market.

The open market was the most common way of acquiring pesticides (71 percent) followed by existing stocks (21 percent) and the informal market (16 percent). The significant trend in the emergence of informal markets show that farmers were willing to pay high prices in order to save their crops from pests and diseases. Traders, therefore, could increase prices at will.

Issues with chemical fertilizer acquisition

Farmers tried to acquire locally available agrochemicals, especially fertilizers immediately after the sudden imposition of the import ban faced several challenges. Almost all paddy farmers surveyed (99 percent) stated that they faced difficulties in acquiring chemical fertilizers on time and in required quantities from the existing markets in the 2021/22 Maha season.

High costs (83 percent) and unavailability of sufficient quantities (65 percent) were the major issues in getting chemical fertilizers and other agro-chemicals during the 2021/22 Maha cultivation season. In addition, 8 percent of farmers stated that they had issues with the quality of the chemical fertilizers.

Preference for chemical fertilizer subsidies

Paddy farmers have benefited from fertilizer subsidies in various forms since 1962, either in the form of a cash grant or an in-kind subsidy. Farmers were questioned whether they prefer or expect the government to provide chemical fertilizers as a subsidy in the future. It was notable that almost half of the respondents expected subsidies while the rest were willing to purchase fertilizers on the open market despite the high prices. Among the rest of the farmers, the in-kind subsidy was preferred by 46 percent of farmers while only 5 percent opted for a cash grant.

Organic fertilizer application

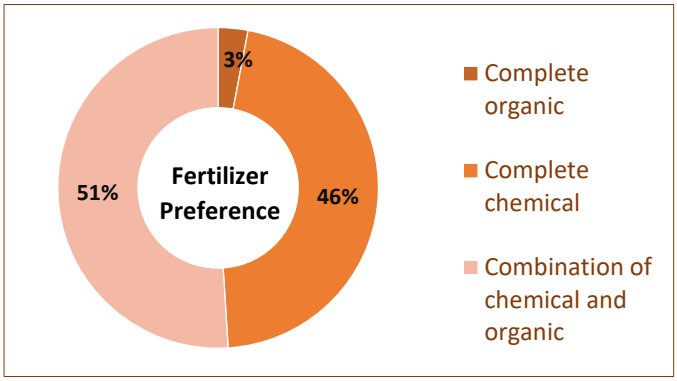
Only 15 percent of paddy farmers had applied organic fertilizers to their crops before the import ban. However, there was an 86 percent rise in organic fertilizer application after the import ban. Most of the farmers (57 percent) applied organic fertilizers because they were provided by the government. On the other hand, 48 percent of farmers self-produced the organic fertilizers for their paddy cultivation.

Organic fertilizer production

It is important to note that 51 percent of the total respondents had started producing organic fertilizer after the import ban. The unavailability of sufficient and variety of raw materials for organic fertilizer production was the main problem for the majority of farmers (73 percent) due to the gap in availability of potential biomass residues. This was also revealed by a previous study conducted to identify the biomass waste inventory. Time was stated by 65 percent of respondents as another constraint, indicating that even if they wanted to produce themselves, the time to commit to organic fertilizer production was limited.

Fertilizer preference: organic vs chemical fertilizers

Even though the government wanted Sri Lanka to become the first country in the world that exclusively practices organic agriculture citing environmental and health benefits, only 3 percent of farmers shared this vision, while 46 percent held conflicting opinions.



Food security

The food security indicators namely Food Consumption Score (FCS), a proxy indicator of household caloric availability, and Reduced Coping Strategies Index (rCSI), an indicator to compare the hardship faced by households due to shortage of food, developed by World Food Programme (WFP) were used to understand the food security status of paddy farmers.

Food security status of the paddy farming community in Sri Lanka

Food secure	**46%**
Marginally food secure	**36%**
Moderately food insecure	**13%**
Severely food insecure	**5%**

Although paddy farmers have undergone different shocks during the reference period, when considering the prevalence of food security among them, the survey revealed that a majority of them (82 percent) were either food secure or marginally food secure. This indicates lesser vulnerability and the ability to adopt stronger coping mechanisms. However, a small number of farmer households (5 percent) were found to be severely food insecure. Therefore, the need to adopt food coping strategies was not severe. In terms of food consumption scores, the majority of farming households had an acceptable level of food consumption, but the most common response to food shortages was to eat less attractive and less expensive foods.

Recommendations

Based on the study findings, it is recommended that the government consider a more gradual and phased approach to the shift towards exclusive organic farming. This could involve providing support for farmers to access and use organic fertilizers, while also ensuring a consistent supply of chemical inputs for those who prefer to use them. Additionally, efforts should be made to address the challenges faced by organic fertilizer producers, such as the availability of raw materials. Further research and development are needed to identify and promote sustainable fertilizer policies that can balance economic, environmental and social considerations. Finally, more attention needs to be given to the impact of policy changes on the livelihoods of farming families and strategies for mitigating short-term impacts should be developed.

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