

Import Ban on Chemical Fertilizers and Other Agrochemicals: Short-term Impacts on Selected OFCs and Potato Crop



HARTI POLICY BRIEF

Connecting
Research into
Practice

December 2022



In April 2021, the Sri Lankan government imposed a ban on the import of agrochemicals with the aim of providing a toxin-free diet for all citizens by promoting organic agriculture. The sudden policy change affected the input market and triggered a rise in prices of agrochemicals, resulting in yield loss. The short-term impact of this policy change on the OFCs and potato farming sector was studied vis-a-vis the 2020/21 and 2021/22 Maha seasons.

The total cultivated extent declined by 26 percent, resulting in a 52 percent yield loss after the policy change. Even though organic fertilizer usage increased with the ban of chemical fertilizers, only one percent of farmers prefer fully organic farming while the majority (56 percent) prefer chemical fertilizers. Hence, shifting to complete organic cultivation is not desirable nor sustainable. It is necessary to develop a balanced and well-planned combination of conventional and organic based agriculture systems with more environmentally and economically sustainable fertilizer policies. Extreme solutions such as a complete ban or restrictive licensing might not be derived optimal outcomes.

26%
Reduction in extent cultivated

52%
Loss of total average yield

76%
Farmers' response was
agrochemical issue as the main
reason for yield reduction

57%
Growth of organic fertilizer users

Background

Restrictions on chemical fertilizers and other agrochemical imports caused widespread concern among Sri Lanka's farming community. The farmers were severely affected by the agrochemical shortage in the open market and resulting high prices. Being key food commodities of the majority of the population and providing inputs for a number of agro-based industries, the other field crops (OFCs) and potato crop production occupy a prominent status in the crop production sector of Sri Lanka.

The immediate impacts of the sudden policy change was studied by Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) following a questionnaire survey of 703 randomly selected farmers growing maize, potato, chilli and big onion. Eight districts namely Anuradhapura, Moneragala, Kurunegala, Puttlam, Hambanthota, Badulla, Nuwara Eliya and Matale were selected as the study area where growing the selected crops. The study was conducted from July to September 2022 and the situation before (2020/21 Maha) and after (2021/22 Maha) the policy change was compared by analysing the data from the collected data.

This policy brief details the key findings of the research study focusing on the change of crop cultivation extent, crop productivity, organic and chemical fertilizer usage, farmers' perception on plant nutrient management and the impact on household food security.

Change in cultivated extent

Overall, 36 percent of farmers stated that the extent of crops cultivated was reduced after the policy change. The total cultivated extent declined by 26 percent compared with the previous season. According to the crop breakdown, chilli had the highest decline (31 percent), followed by maize (25 percent), big onion (25 percent) and potato (16 percent).

Change in crop productivity

The average yield obtained by farmers before and after the policy change was compared in order to determine the impact of the new agrochemical policy on the harvest.

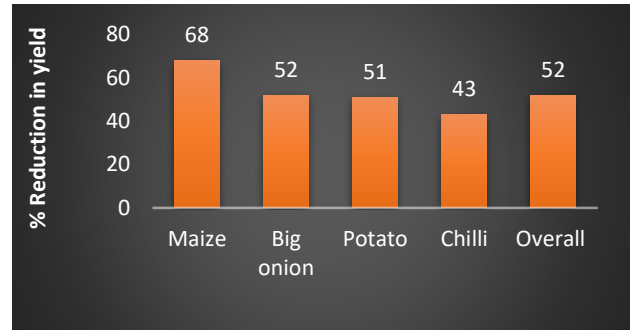


Figure 1: Yield Reduction after the Policy Change

Accordingly, 92 percent of farmers responded that their yields were declined after the policy change. The overall average yield loss per acre stood at 52 percent. The highest yield reduction was observed in maize (68 percent) and the lowest in chilli (43 percent). The results confirmed that 64 percent of the farmers' yields declined by more than half (50 percent) after the policy change. Restrictions on chemical fertilizers and other agrochemicals were the most prominent reasons for the reduction of crop yields by the OFC and potato farmers in the sample, accounting for 76 percent of all reasons cited.

Use of chemical fertilizers and other agrochemicals after import ban

Despite a shortage of chemical fertilizers after the import restrictions, 78 percent of farmers applied at least one type of chemical fertilizer (Urea, MOP or TSP). The crop breakdown confirmed that the highest application of chemical fertilizer (93 percent) was done by potato farmers followed by big onion (91 percent), chilli (78 percent) and Maize (57 percent) farmers. Further, it was found that 80 percent of farmers used at least one type of pesticide or fungicide to control pests and diseases.

Sources of chemical fertilizers and other agrochemicals after import ban

The majority of farmers (62 percent) purchased chemical fertilizers on the open market at high prices. Around a quarter of the farmers surveyed used chemical fertilizers left over from previous purchases. In addition, 11 percent of farmers obtained chemical fertilizers from Agrarian Services Centres while 10 percent bought from the informal market at higher rates. The majority of farmers (66 percent) purchased pesticides/fungicides in the open market while 19 percent used their own stocks. Purchasing of pesticides/fungicides by a significant number of farmers (15 percent) from the informal market shows the emergence of informal markets due to high prices of agrochemicals.

Use of organic fertilizers

The use of organic fertilizers before the policy change was comparatively low. Overall, there were only 26 percent of farmers who applied organic fertilizers to their crops. With the promotion of organic agriculture through the policy change, the number of organic fertilizer users increased to 58 percent in OFC and potato cultivation.

The number of farmers who applied at least one type of organic fertilizer in the previous season increased by 53 percent. Only 15 percent of farmers received the organic fertilizer cash subsidy while 35 percent received in-kind assistance provided by the government after the policy change.

Farmers' perception on plant nutrient supply

Even though the government's intention was to fully convert the country into organic farming, only one percent of farmers are willing to use complete organic fertilizers in crop production. Overall, the majority of farmers (56 percent) preferred chemical fertilizers while 43 percent prefer a combination of organic and chemical fertilizers.

Crop breakdown indicated that the majority of potato (72 percent) and chilli farmers (57 percent) preferred a combination of organic and chemical fertilizers while big onion (72 percent) and maize farmers (65 percent) mostly preferred exclusive use of chemical fertilizers for plant nutrition.

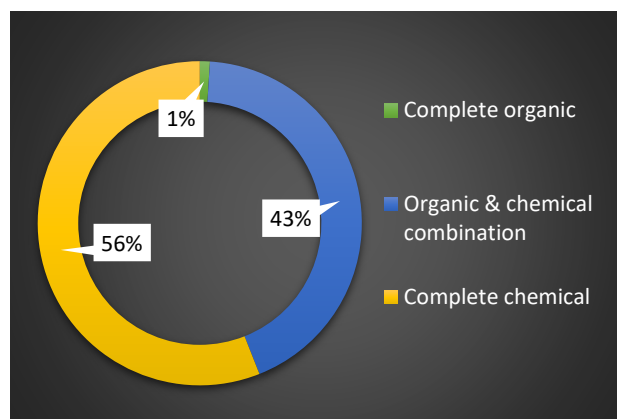


Figure 1: Farmer Preference Based on Type of Fertilizer

Issues in organic fertilizer use

Difficulties in finding large quantities of organic fertilizer (30 percent) and a higher labour requirement in application (29 percent) are at the top among key issues in the use of organic fertilizers. Further, 21 percent of farmers are of the view that the use of organic fertilizers is less economical compared to chemical fertilizers. Poor quality of organic fertilizers (15 percent), unawareness of recommended dosages (3 percent) and lack of knowledge on production of organic fertilizers (2 percent) are the other issues encountered by farmers.

Food security status of farmer households

Food secure	36%
Marginally food secure	34%
Moderately food insecure	28%
Severely food insecure	2%

Food security is a serious concern in Sri Lanka at present due to rising inflation. According to the survey findings, 36 percent of farmers from the total sample were in the food secure category and 34 percent were marginally food secure. Twenty-eight percent of the farmers were moderately food secure while two percent were severely food insecure during the study.

Of the total sample, 69 percent are in either food secure or marginally food secure categories. This implies that the majority of OFCs and potato cultivating farmers were well-off in food consumption even after the chemical fertilizers and other agrochemicals import restrictions.

Policy recommendations

Moving towards complete organic cultivation is not desirable or sustainable. It is necessary to develop a balanced and well-panned combination of conventional and organic based agriculture systems with more environmentally and economically sustainable fertilizer policies. A gradual cut down of agrochemicals with a long term plan on the adequate supply of organic fertilizers and other organic based alternatives is prudent rather than an immediate and comprehensive shift to exclusive organic farming.

Acknowledgements

This work was funded by the Australian Government Department of Foreign Affairs and Trade (DFAT) and supported by the United Nations World Food Program (WFP) with technical assistance. Any opinion expressed are those of the authors.

Shantha Hewage, Dinusha Rathnayake & Thushara Dharmawardhana
Environment Division
Hector Kobbekaduwa Agrarian Research and Training Institute
114 Wijerama Mawatha, Colombo 07, Sri Lanka
<http://www.harti.gov.lk/>