

## The Role of Agriculture in Enhancing Food Security During Pandemic Situations

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### Introduction

There were five diseases in Sri Lankan history that our ancestors found to be especially frightening. According to *Mahavamsa* written by Mahanama Thero in the 5<sup>th</sup> Century AD, a disease named 'Rattakkbh?' (red eye) had spread during the reign of King Sirisanghabodhi. The people who saw the red eyes of one another, were frightened and died, believed to have been devoured by the *yakkha* (demon) who created the disease. The deaths were said to have been controlled finally through an agreement between the king and the *yakkha*. Many believed that this disease might had been a deadly mutant strain of *Vibrio cholerae*. The second disease occurred during the construction of Ruwanweli dagaba which was later identified as smallpox (*vasooriya*). The third disease Rabies was known as hydrophobia in old days and in Sinhala as *jala-bbeethika*, because victims often show a great aversion to water in the final throes of death. The fourth frightening disease recorded in history was 'Frankish Sickness', which was a skin disease which became quite

common place during the British colonial period. Locally it was known as 'Parangileda' although it did not have any connection with the Portuguese. The fifth one was named as Cometary Malady, an outbreak of an epidemic affecting both man and beast, following the appearance of a fiery comet with three tails on 7<sup>th</sup> March, 1615. It was believed that a sort of miasma descended over the land, leading to an epidemic of immense proportions that killed man and beast, birds, and fish. Some scientists believed that comets harbour disease-causing microbes, which could be dispersed to earth as they streak across our skies. Irrespective of the source from

which those diseases originated, there are some common features among them:

- 1) The diseases are pandemic outbreaks with a high prevalence of infection that occur over a wide geographic area, generally affecting a significant proportion of the world's population, usually over a period of several months, sometimes occurring in waves.
- 2) The causal factor is a virus, which could spread fast through air, water or animal or human beings.
- 3) People with poor immunity were the most vulnerable.



4) The pandemics end up causing food scarcity.

Currently, some 820 million people around the world are experiencing chronic hunger due to insufficient consumption of caloric energy to live normal lives. Of these, 113 million are coping with severe food insecurity, which require immediate external assistance for survival. These people cannot afford any further disruptions to their livelihoods or access to food that COVID-19 might bring.

Vulnerable groups to COVID-19 include small-scale farmers, pastoralists, fishers, and those who might be hindered from working their land, caring for their livestock, or fishing. They will also face challenges in accessing markets to sell their products or buy essential inputs, or suffer due to higher food prices and limited purchasing power. The food supply chain is a complex web that involves producers, consumers, agricultural and fishery inputs, processing and storage, transportation and marketing, etc.

Informal labourers hardly find jobs in the agriculture sector, where they earn from working opportunities during usual agricultural seasons. Currently millions of children are missing their school meals that they had enjoyed earlier, while many of them are with no formal access to social protection, including health insurance.

Role of agriculture in enhancing food security can be viewed as multifaceted. There is an urgent

requirement for food management and production of the most essential food within the country, assuming possible restrictions on imports, and ensuring food security among farm families, including planning marketing mechanisms of expected production, are of particular importance.



### Food Availability

As the virus spreads and cases mount, and measures are tightened to curb the spread of the virus, there are countless ways in which the food systems at all levels will be tested and strained in the coming weeks and months. Although production of high value commodities (i.e. fruits and vegetables) has already been affected, they are not as yet noticeable because of the lockdown and disruption in the value chain.

We have already observed the challenges of the logistics involved in the movement of food (not being able to move food from point A to point B), and the pandemic's impact on livestock due to reduced access to animal feed, and the reduced capacity of slaughterhouses' (due to logistical constraints and labour shortages) similar to what happened in China.

As a result of these constraints, it is possible to expect to see disruptions in the food supply chains. Interruptions in transport routes can adversely affect fresh food supply chains, and may also result in increased levels of food loss and waste. Fresh fish and aquatic products, which are perishable need to be sold, processed or stored within a specific time limit.

Transport restrictions and quarantine measures can affect the access of farmers' and fishers' to markets, curbing their productive capacities and hindering them from selling their produce. Shortages of labour could also disrupt production and processing of food, especially in labour-intensive industries (e.g. high-value crops, meat and fish).

In order to avoid disruptions in the food supply chain and food production, the following steps need to be adopted:

- 1) Keep international trade open with utmost care and take measures to protect the food supply chain (ensuring inputs such as seeds, and assisting smallholder farmers to access markets to sell their produce).
- 2) Focus on the needs of the most vulnerable, and scale up social protection programmes including cash transfers.
- 3) Keep domestic food supply value chains alive and functioning.

4) Ensure flow of seeds and planting materials to smallholders. Agricultural supply chains should be kept alive by all means, compatible with health safety concerns.

5) Maintain agricultural activities targeting the seasons as usual. Irrigation scheduling has to be maintained properly.

According to Department of Agriculture, the total rice production covering both the *maha* and *yala* seasons, is expected to be sufficient for the next nine months. Total rice production for this season is 2.97 million Mt.

Paddy production in Batticaloa, Mannar and Ampara Districts had been affected in this period. While this is a substantial loss for a number of local communities, it should not have an adverse impact on overall rice production and the surplus prediction

Dry conditions prevailed in January and February across most of the major rice producing areas. This has meant favourable conditions for paddy harvesting and drying activities

### Food Distribution

While currently adequate stocks of most essential goods exist access to these is a major challenge. Access to goods is not uniform across the country due to disruption of distribution channels. The sudden imposition of curfew and its continuation has curtailed the movement of people. As a result, long queues occur during the hours the curfew is lifted. Some goods run out of stock quickly as consumers buy in excess of

their needs. In response, the government and the private sector are experimenting with new ways of distribution. One new way of distributing food involves local government authorities, and some supermarkets, which provide home delivery service of essential goods at affordable rates. This procedure is also being used by the LPG gas companies for domestic use. Similar initiatives are available for delivery of pharmaceuticals through state-owned pharmaceutical outlets throughout the country. Several private online purchase platforms have emerged recently, and even some of the leading retail chains have expanded their online platforms. Nevertheless, until recently most online platforms were unable to meet the rising demand even for a limited basket of commodities; where arrangements for deliveries occurred within a couple of hours or took a week to deliver goods. Though such services are welcome, they do face logistics challenges and not all the communities have benefited equally. To ensure food security among vulnerable low-income families and farmers who participate in the Farmer Insurance Scheme, an allowance of Rs. 5,000 is provided as an immediate relief measure.

Another state mechanism involves the purchasing of produce directly from farmers (rice excluded) and distributing directly to vendors who in turn distribute to consumers. Several Government of Sri Lanka (GoSL) actions have ensured access to rice staples, as for instance the declaration of rice milling as an essential service, and the maximum retail price for rice becoming a subject for review for affordability.

### Coping up with the Situation

As a country dependant on agricultural food production and about 2.1 million households or about 40 percent of the total population is engaged directly in agricultural or livestock farming, we need to consider the following measures immediately to cope up with the situation that has emerged due to COVID-19 outbreak.

1) We should meet the immediate food needs of the vulnerable population.

Ensure that emergency food needs are met; adjust and expand social protection programmes; scale up nutritional support; support management and prevention of undernourishment; adjust school meal programs so as to continue delivering school meals even when schools are closed.

2) The country should boost its social protection programmes

Ensure multiple payments to help families meet their basic needs by providing complementary entitlements to offset loss of income by small-scale producers. For example, if food insecurity becomes extremely severe, exploring the use of food banks could be an option through donations from individuals, solidarity networks, and non-governmental organizations, thus enabling mobile payment systems to prevent disruptions in delivery of cash entitlements due to restrictions on movement, or alternately injecting funds in the agricultural, fisheries and aquaculture sectors. Sri Lanka has already introduced such protective measures to combat the impacts

of the pandemic on people's livelihoods.

3) The country should gain efficiencies and try to reduce trade-related costs

These include, 1) not to impose measures that would restrict trade and mobility of commodities, 2) reduce food waste and loss, 3) resolve logistic bottlenecks, 4) immediately review trade and policy options and their likely impacts, 5) avoid generalized subsidies for food consumers, 6) reduce restrictions on use of stocks, 7) reduce import tariffs when government thinks it is appropriate to minimize, and temporarily reduce Value Added Tax (VAT) and other taxes.

Overall, avoiding any trade restrictions would be beneficial to keep food and feed supplies, as well as those of agricultural and fishery inputs, from worsening local conditions already strained by COVID-19 response measures.

Policy makers must monitor trends and take care to avoid accidentally

tightening food-supply conditions, something that China has managed so far with creative and adaptive methods. Digital technologies have a role to play in anticipating problems and smoothing temporary shortages as well as building the resilience of food chains to avoid similar occurrences in the future. New technologies could facilitate the interface between supply and demand, which would be of great value to highly perishable goods (like fruit, vegetables, fish and aquatic products).

Disruptions to food distribution exist in some parts of the country but no food shortage is imminent in the short run; GoSL is working to deliver essential services and carry out essential trade and distribution. Although agriculture supply chains have been disrupted, proposed GoSL actions should ensure resumption of trade for essential goods. As a precaution, to overcome any shortfalls in food imports, plans exist to cultivate essential field crops domestically.

#### 4) Agricultural Production



Regarding agricultural production activities, farmers and fishermen are not subject to the restrictions of the national curfew in carrying out their livelihood. Nevertheless, movement restrictions of consumers have disrupted normal market practices, so prices for commodities have swung high and low in search of equilibrium between supply and intermittent demand. The decision to lock down the major “economic centers”, could impact both farmers and consumers. Much of the agricultural production especially vegetables and fruits are collected at the economic centers. GoSL expects to introduce alternative methods of collection and distribution through government channels.

Products exempted from curfew movement restrictions include fertilizer. The Cabinet of Ministers has approved the purchase of chemical fertilizers. The Department of Agriculture is drafting a cropping plan for the minor seasons, with more emphasizes on import-substituting crops. This is a precautionary measure to face possible export restrictions of other countries and to release the pressure on the rupee exchange rate by reducing imports.

#### 5) Crop production progress and prices at present:

1) Other field crops - Cultivation progress is 118,567 ha, which is 68% from the target.

2) Vegetables – Up country vegetable cultivation progress is on 7,374 ha, which is 50% of the target, low country vegetable cultivation progress is 20,886 ha,

which is 59% of the target.

3) The average price of most rice varieties remain considerably lower than during the same period of last year. This can be attributed to surplus stocks produced during the maha seasons of 2019-2020, as well as the government's paddy purchasing program.

4) The prices of grade-I Samba and grade-I Nadu rice have remained constant at Rs.98/kg as a result of government price control.

During *yala* 2020 season there would be a series of important interventions and adaptation measures that could be taken in the main agro-ecological areas to support food security:

a) Cropping advisories to farmers through agriculture extension services could be institutionalised for the three main agriculture zones;

b) Major reservoirs are showing very good water levels especially in Kurunegala, Ampara, Anuradhapura, Polonnaruwa, Vavuniya and other agriculture related districts. However, water controls and community mechanisms such as "*Bethma*, can be activated (*Bethma* method is the sharing of the limited extents of land by farmers for sharing water in scarce situations)

c) Food accessibility and purchasing power should be monitored through price and labour market data to monitor the impact of the COVID-19 outbreak and its potential consequences.

### Home Gardening

People are facing uncertain and difficult times in the face of the COVID-19 pandemic. The benefits of plants (psychological, health, economic, productive) in this period of forced isolation can be of key importance. If many of us have to self-isolate in urban or suburban environments, we need something to do to keep our bodies



and minds active and fed. In such a challenging scenario, a vegetable garden in home spaces can bring recreational, health, economic and environmental benefits. Regardless of the COVID-19 pandemic, there is untapped potential for this kind of gardens to impact environmental outcomes, public awareness, and market trends. Home vegetable gardens could provide a small-scale approach to the sustainable use of natural resources, leading towards self-sufficiency, self-regulation, sustainability, and environmental protection.

The selection of plant species to cultivate in the home garden should be based primarily on their ability to cope up with the harsh conditions of the environment, such as high winds and irradiance, lack of organic material and nutrients, and intermittent drought. Therefore, careful plant selection should be integrated into the plan. Habitats

are unique with harsh environments for established plant communities. This is largely because of increased abiotic stresses, such as disturbance, pollution, drought, radiation, heat and microclimate extremes, but also because of the reduction of colonization and modifications in soil microbial diversity. Another additional difficulty is that there is a rush for vegetable seedlings in garden centres, because many people are now wanting to grow their own food. The spread of COVID-19 has caused panic buying at supermarkets, and consequently so many families are skipping the supermarket and heading to their local garden centre to grow their own food and become self-sufficient.

It is high time to move back to the traditional home gardens where nutritional food items are found, which promote high immunity. People who are with high immunity levels can get cured soon from COVID-19. Fortunately, traditional food types are nutritious and with a high medicinal value and immunity.



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