

## Responses of rural agricultural households to COVID-19 pandemic: A case study on food security of rural farmers in Belihuloya, Sri Lanka

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### 1. Introduction

When COVID-19 hit Sri Lanka in 2020, the government imposed travel restrictions, curfews and lockdowns to control the spread of the pandemic. These restrictions impacted rural households more than urban households (Phillipson et al., 2020). According to Mastercard Foundation (2020), the response of every rural household to this new normal is different from one another. As identified by Phillipson et al. (2020) rural households were impacted economically, socially, psychologically due to the pandemic. Researchers identified a lack of literature to identify COVID-19 pandemic's impact on Sri-Lankan rural agricultural community. Thus the study addresses this knowledge gap by identifying the issues in food security, market access, and children's education and the coping strategies developed by the rural farmers to mitigate the identified issues. The majority of the rural farmers were unable to sell their fresh/processed produce at the markets, leading to lower household income (Phillipson et al., 2020). The rural context in Sri Lanka is unique with features that support resilience in food systems, mainly due to the availability of nearby food forests and home gardens. These features support household food and nutrition security to a greater extent. Home gardens in rural Sri Lanka have a high diversity of crops, fruits, vegetables, medicinal herbs etc. (Thamilini et al., 2019). Given this rural setting, the objective of this study was to investigate the challenges of the pandemic on rural households in terms of food security and to understand the coping strategies adopted leveraging natural endowments such as home gardens and forests. The research will be useful in recognizing the unique challenges that a rural agricultural community faces during a crisis. With 81% of Sri Lanka's population living in rural areas (World Bank, 2018), the Challenges and coping strategies outlined will be important in identifying, planning, and executing government/regulatory body interventions in rural areas.

### 2. Materials and Methods

Belihuloya located in Imbulpe DS division, Rathnapura district of Sri Lanka was purposely selected as the research location. A sample of 25 rural farm households in the area was purposively selected for data collection in two stages. Initially, a focus group discussion was held at Sri Suvisudhdharamaya Temple, Galagama, Belihuloya in March 2021. Digital storytelling method was used to conduct these focus groups (Gubrium, 2009). Fifteen farmers were first grouped into five clusters depending on the crops cultivated: fruits and vegetables, turmeric and ginger, traditional paddy and improved paddy varieties. Farmers in each group were accompanied by a researcher and farmers were allowed to talk freely while their storytelling session was recorded by the researchers. Unlike other methods of data collection, storytelling enabled gathering in-depth and detailed understanding of the topic through story teller's verbal and non-verbal responses (Njeru, 2015). The focus group discussion aimed at gathering common constraints faced by the farmers and the common coping strategies they had developed to mitigate the challenges during COVID-19.

In the second step of the study, 10 farmers were studied over a period of one month to record the insights of rural farm households, again, using the storytelling method. This stage of

research targeted gathering individual experiences on household food security, market access opportunity for agricultural produce, and the market access for daily necessities, household-level income generation, food production, processing and value addition, and the children's education during the pandemic. Rural home gardens were given special attention in the study since it contributes more to the household economy and household food security in Sri Lanka (Pushpakumara et al., 2010). Photographs and audio recordings of the stories were collected from the individual farmers. Home gardens of selected farmers were visited and observed during July 2021.

### 3. Results and Discussion

According to the demographic profile of the studied 25 farmers, 60% had engaged in farming as their primary source of income, while 40% engaged in farming and agricultural activities as a secondary source of income making agriculture a crucial livelihood opportunity. Of the 10 farmers whose home gardens were studied, 70% had multifunctional home gardens (all food, medicinal and horticultural focused), while 30% had horticultural crop-based home gardens. Multi functionality enabled rural households to yield a diversified daily harvest and sell/share excess of the harvest with the neighbours (Pushpakumara et al., 2010; Yapa, 2018).

Challenges faced by the farmers could be categorized into three categories viz food supply, market access, and children's education. Rural households' food security has not been affected a lot by the travel restrictions unlike the urban dwellers because their food supplies came from the local food production systems; home garden/backyard, paddy field, food forests and the rivers or the reservoirs. Due to the diversity of the crops in the home gardens, farmers' household food security status was not affected. Table 01 depicts the species richness of the 10 home gardens under each crop category. Rural farmers had three main sources of food; i.e. paddy fields, home gardens and the nearby forests. Also, protein requirements were fulfilled from the freshwater fish, poultry, and from dairy and swine farmers in the village.

The commercially oriented farmers have faced huge barriers due to the closure of farmer markets/village fairs in the locality. The majority of the smallholder farmers could not sell as much harvest as before.

Large scale farmers have also faced challenges in selling their harvest to the collector due to the travel restrictions between provinces that limited transportation of the harvest to the Dedicated Economic Centres in Colombo and to the Manning market. Farmers who were supplying harvest to the retail chains, hotels or restaurants on a contract basis also faced difficulties due to poor demand for their produce, as a cascading effect of COVID-19 to the hotel industry.

Since all the schools in the country were shut down during the lockdowns, conducting online sessions was a must for households. On one hand, this was an additional burden on household expenditure, as the farmers were compelled to buy laptops or mobile phones for their children to continue their educational activities. On the other hand, smartphones and mobile applications used by the farmers were important strategic interventions in agricultural marketing. Communication apps linked farmers with intermediaries, end markets and created access to new markets that did not exist before the pandemic. Moreover, farmers who were traditionally cultivating paddy for the commercial market shifted to cultivating traditional paddy varieties such as *madathawalu*, *suwadel*, *kalu heenati* etc. to enter new high-value markets that can be accessed through the use of mobile platforms. Also, some farmers have developed the habit of entering into a contract with a buyer before the cultivation, in order to avoid instability of the food market due to prevailing pandemic-related conditions situation. This establishes a promising secure market for the farmer even before cultivating the crops. Rural women of the households had developed the habit of food preserving, processing and value addition to increase the shelf-life of the harvest. Preserving helps farmers to use the food during the

offseason for their own consumption and farmers don't need to spend money on buying those food items from the market.

**Table 01. Species richness of rural home gardens**

Crop Category		Species richness			
		Total number of species identified	Mean	Min	Max
1. Fruits	<sup>1</sup> Underutilized fruits	22	7.7	2	18
	<sup>2</sup> Abundant fruits	22	9.2	2	22
2. Vegetables	Underutilized vegetables	6	2.7	0	5
	Abundant vegetables	20	8.7	3	12
3. Green Leaves	Underutilized Green Leaves	20	8.5	3	17
	Abundant Green Leaves	11	7.5	4	11
4. Grains		3	1.9	0	4
5. Cereals / legume		3	1	0	2
6. Spices and condiments		11	6.2	2	11
7. Yams	underutilized yams	7	3.1	0	8
	Abundant yams	4	3.1	2	4
8. Medicinal herbs		32	12.6	5	28
9. Other food crops		10	4.6	2	10
10. Forest trees		19	8.6	3	17

<sup>1</sup>Crops that are valuable, yet are not widely grown, rarely seen in the market, and not commercially cultivated

<sup>2</sup>Commercially cultivated crops that are available in larger quantities in market places

#### 4. Conclusions

Study findings concluded that the food security of the rural farming households have not been affected by the pandemic due to the availability of the home garden/food forests. Farmers have developed opportunities to enter new market places through online existence and contracts with the buyers. The coping strategies identified are important in scoping policy interventions to uplift rural livelihoods. But a nationwide study is crucial to generalize the strategic interventions in to rural context. This study clearly shows how rural farm households have leveraged the rural setting to build household resilience in this evolving pandemic.

## 5. References

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