



## **Challenges faced by the horticultural farmers during COVID-19 pandemic situation and coping strategies adopted by them to deal with pandemic situation**

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### **ABSTRACT**

*Agriculture plays a vital role in India's economy. In India around 70 per cent of the population earns its livelihood from agriculture. India has huge production of both fruits and vegetables. The COVID-19 pandemic is the greatest global humanitarian challenge the world has ever faced. Initially the lockdown stalled the economy with complete closure imposed on enterprises across all sectors. Due to COVID-19, farmers faced lot of stress in terms of limitations in supply chain, access to supplies needed to maintain farm operations, limited labour-who are needed to manage livestock or to plant and harvest crops, finance, market etc. The present study conducted in Belgavi and Vijayapura districts of North Karnataka. An "ex-post-facto" research design was adopted in the present study. The results revealed that the major challenges faced by the farmers were lack of storage facilities (97.50%), fear of COVID-19 infection (97.09%), high cost of transportation (97.09%), lack of transportation facilities (95.84%) and high cost of inputs (93.75%)*

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### **INTRODUCTION**

The agriculture and allied sector carry huge importance for the economy. It contributes to one sixth to the Indian national income and provides employment to more than 50 per cent of the workforce. It is essential for ensuring food security to the nation. Agriculture sector influences the growth of secondary and tertiary sector of the economy through its backward and forward linkages. Country is the second largest producer of both fruits and vegetables in the world after China. India is the largest producer of ginger and okra amongst vegetables and ranks second introduction of potato, onion, cauliflower, brinjal, cabbage etc. Grapes, pomegranate, mango, banana and orange account for larger portion of fruits exported from the country while onion, mixed vegetables, potato, tomato and green chillies contribute largely to the vegetable export basket [4, 5].

COVID-19 pandemic has disrupted the Indian agricultural system extensively. The pandemic has also triggered a massive reverse migration from the urban to rural areas in large parts of the country. Indian farmers are facing risks every year, such as low rainfall, price volatility and rising debts. But risks from COVID-19 pandemic have put new challenges in front of this sector threatening livelihoods and also food security. Due to the sudden outbreak of the COVID-19 and the lockdown the transport of the goods is a huge task and various loopholes have been created in the marketing chain. The loopholes lead to a huge loss for the farmers as wholesale buyers have reduced and thus the farmers have to attend the markets and sell the vegetables themselves. As the transportation of the vegetables and fruits is reduced, most of the farmers have to sell their produce at the local markets or at minimum price at the urban markets so as to be able to pay the transportation costs. Thus, horticultural farmers faced so many problems regarding transportation and marketing of the produce [6, 7]. So it is important to conduct in-depth study to understand the problems faced by the horticultural farmers during pandemic

and also elicit the coping strategies adopted by them to mitigate the impact of pandemic. The present study mainly focused on the challenges faced by the horticultural farmers and coping strategies adopted by them during pandemic.

## MATERIAL AND METHODS

The study was conducted in Belgavi and Vijayapura districts of North Karnataka. These districts were purposively selected based on significant area under cultivation of vegetables and fruits respectively. Two taluks were selected from each district based on maximum area under vegetables and fruits. Onion was the major vegetable crop in the Belgavi district and grape was the major fruit crop in Vijayapura district. From two taluks of Belgavi and Vijayapura 60 onion growers and 60 grape growers were selected. This constituted a sample of 120. A semi structured interview schedule was developed. Four major issues have been identified from the study. Under these four major issues 18 challenges have been listed. The farmers were asked to rate each challenge on a three-point continuum viz., major, minor and not a problem with the scores of 2, 1 and 0 respectively. Their responses were recorded. Index was computed and ranking was given based on it.

$$\text{Index} = \frac{\text{Scores obtained}}{\text{Obtainable scores}} \times 100$$

## RESULTS AND DISCUSSION

The Challenges faced by the horticultural farmers during COVID-19 pandemic were categorized under four major categories such as economic, marketing, psychological and infrastructural issues.

It is observed from the table 1, among the economic challenges faced by the horticultural farmers were high cost of inputs (93.75%) which ranked first followed by inadequate institutional financial support (93.34%), lack of finance and credit facilities (84.59%) ranked third, high labour cost (81.67%) with the rank four, lack of own funds and resources (75.42%) ranked fifth and price fluctuation (64.58%) was ranked sixth. This might be due to lack of access to inputs during pandemic. Due to fear and insecurity farmers faced the disruptions in their production capacity and accessibility to farm inputs which may lead various implications like increase in price and making these resources inaccessible to them.

Among the marketing problems faced by the horticultural farmers, high cost of transportation (97.09%) ranked first followed by lack of transportation facilities (95.84%) ranked second, lack of marketing facilities (90.84%, III), shortage of manpower to sell the produce in the market (73.75%, IV), exploitation by the middle men (67.50%, V) and less price for the produce (49.58%, VI). This could be due mobility restrictions and higher hiring charges of the transport vehicles during pandemic. Prices of perishable products fully dependent on daily transport and supply chain. Farmers could not be able to market their produce to nearby markets due to unavailability of transport facilities and high transportation charges.

With respect to psychological issues, from the table 1 we found that most of the farmers were worried about fear of COVID-19 infection (97.09%) and it was ranked first followed by fear of unable to get the fair price for the produce (87.91%) ranked second and fear of social security (53.75%) was ranked third.

Regarding to infrastructural issues lack of storage facilities was major challenge faced by the farmers (97.50%) followed by non-availability of machinery and equipment during peak season was ranked second (92.50%) and shortage of machinery and equipment's ranked third (86.67%). Because of the perishable nature of vegetables and fruits they cannot be stored for long time. During pandemic regular markets were also closed, as soon as it went rotten and their entire produce got wasted and their total investment becomes loss. Perishables products are damaged due to lack of storage facilities. That might be the reason for most of the farmers expressed the problem of lack of storage facilities. Due to COVID-19 restrictions, farmers hits with lack of farm labour, machinery and equipment during peak season

**Table 1. Challenges faced by the horticultural farmers during pandemic (n=120)**

| Sl.No.     | Challenges                                 | Total score | Index | Rank |
|------------|--------------------------------------------|-------------|-------|------|
| <b>I.</b>  | <b>Economic</b>                            |             |       |      |
| 1)         | High cost of inputs                        | 225         | 93.75 | I    |
| 2)         | Price fluctuation                          | 155         | 64.58 | VI   |
| 3)         | High labour cost                           | 196         | 81.67 | IV   |
| 4)         | Inadequate institutional financial support | 224         | 93.34 | II   |
| 5)         | Lack of own funds and resources            | 181         | 75.42 | V    |
| 6)         | Lack of finance and credit facilities      | 203         | 84.59 | III  |
| <b>II.</b> | <b>Marketing</b>                           |             |       |      |
| 1)         | Lack of marketing facilities               | 218         | 90.84 | III  |
| 2)         | Lack of transportation facilities          | 232         | 95.84 | II   |

|             |                                                                |     |       |     |
|-------------|----------------------------------------------------------------|-----|-------|-----|
| 3)          | High cost of transportation                                    | 233 | 97.09 | I   |
| 4)          | Shortage of man power to sell the produce in market            | 177 | 73.75 | IV  |
| 5)          | Less price for the produce                                     | 119 | 49.58 | VI  |
| 6)          | Exploitation by the middle men                                 | 162 | 67.50 | V   |
| <b>III.</b> | <b>Psychological</b>                                           |     |       |     |
| 1)          | Fear of COVID-19 infection                                     | 233 | 97.09 | I   |
| 2)          | Fear of social security                                        | 129 | 53.75 | III |
| 3)          | Fear of unable to get the fair price for the produce           | 211 | 87.91 | II  |
| <b>IV</b>   | <b>Infrastructural</b>                                         |     |       |     |
| 1)          | Lack of storage facilities for perishables                     | 234 | 97.50 | I   |
| 2)          | Non availability of machinery and equipment during peak season | 222 | 92.50 | II  |
| 3)          | Shortage of machines and equipment's                           | 208 | 86.67 | III |

### Coping strategies adopted by the farmers

From the table 2, it was found that nearly three fourth (72.50%) of the farmers stored the produce during pandemic, followed by deployed family members to reduce the shortage of labour (45.83%), transported produce in personal and local transport(43.33%),sold produce through informal channels, converted produce into value added products, use of government support to transport produce to other states(42.50%),reduced the use of inputs(41.67%),approached non-institutional credit sources for financial requirements (39.17%),employed the local and skilled labour (30.83%),hiring of vehicles on collective basis by the farmers to get needy inputs from markets and sell the produce in the market(30.00%),marketed to local people(26.67%),maintaining buffer input stock (20.00%) and reduce household expenses(10.83%).The findings were in consonance with the findings Habanyati *et al.*[2] and Menon and Schmidt-Vogt [3].

The lockdown was enforced during pandemic. Due to mobility restrictions and lack of marketing facilities most of the farmers stored the produce in storage facilities. Many of the labours migrated to their native areas. As a result, there was labour shortage. The little labour force, farmers could get was very costly. So, the farmers utilized their own family members for farm labour work which reduced the cost of cultivation. Due to unanticipated lockdown most of the farmers unable to sell their produce and they raised the capital for sowing next season so in requisite of money for buying inputs for next sowing season most of the farmers approached non-institutional credit sources like moneylenders, traders, relatives etc. Most of the farmers sold the produce through informal channels even for less price. Due to transportation restrictions vehicles could be hired on collective basis to transport the farm inputs and produce. This can help farmers to gain more bargaining power in purchasing of inputs at reasonable price and getting the remunerative prices for their produce. The research finding was in line with the findings of Goswami *et al.* [1].

**Table 2. Coping strategies adopted by the farmers during pandemic(n=120)**

| Sl.No | Coping strategies                                                                                                         | F  | %     | Rank |
|-------|---------------------------------------------------------------------------------------------------------------------------|----|-------|------|
| 1     | Deployed family members to reduce the shortage of labour                                                                  | 55 | 45.83 | II   |
| 2     | Reduced the use of inputs                                                                                                 | 50 | 41.67 | V    |
| 3     | Employed the local and unskilled labour                                                                                   | 37 | 30.83 | VII  |
| 4     | Approached non-institutional credit sources for financial requirements                                                    | 47 | 39.17 | VI   |
| 5     | Sold produce through informal channels                                                                                    | 51 | 42.50 | IV   |
| 6     | Transported produce in personal and local transport                                                                       | 52 | 43.33 | III  |
| 7     | Got technical information through mobile agro advisories                                                                  | 18 | 15.00 | XI   |
| 8     | Stored the produce                                                                                                        | 87 | 72.50 | I    |
| 9     | Marketed produce to local people                                                                                          | 32 | 26.67 | IX   |
| 10    | Reduced household expenses                                                                                                | 13 | 10.83 | XII  |
| 11    | Maintaining buffer input stock                                                                                            | 24 | 20.00 | X    |
| 12    | Hiring of vehicles on collective basis by the farmers to get needy inputs from markets and sell the produce in the market | 36 | 30.00 | VIII |
| 13    | Converted produce into value added products                                                                               | 51 | 42.50 | IV   |
| 14    | Use of government support to transport produce to other states                                                            | 51 | 42.50 | IV   |

### CONCLUSION

COVID-19 pandemic posed major challenges to the farmers. From the findings it can be seen that high cost of inputs, absence of transportation and marketing facilities during pandemic were the major constraints faced by the farmers. Cost of harvesting and cost of transportation was high than the price they got in the

markets for produce. Farmers faced distress sales also. Fear of COVID -19 infection created additional stress for the farmers. Especially in the case of perishables, farmers income dependent on daily transport and marketing. Rural godowns and cold storage facilities should be augmented in order to reduce the post-harvest losses during uncertain situations like pandemic. Strengthening existing inputs subsidy programs to ensure adequate supply of affordable inputs to most farmers and creating enabling environments for farmers and consumers to collaborate and build trusts to support each other.

## COMPETING INTERESTS

Authors have declared that no competing interests exist

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