



Market Access and Economic Loss During Covid 19 Lock Down: The Case of Paddy Farmers in Kerala

Neetha Rose C D¹ and Prema A²

Department of Agricultural Economics, College of Horticulture,
Kerala Agricultural University, Thrissur, 680656 (Kerala)

ABSTRACT

Covid 19 pandemic has induced a nationwide lock down. The lockdown has increased the uncertainty in markets due to abrupt halt of economic activities which resulted in sudden contraction of demand and supply. The present study examines the market access to paddy farmers and attempts to quantify the losses to them due to lockdown in the Kerala state during the pandemic period. The results show that 89 per cent of the paddy farmers accessed public procurement system and the paddy marketing channel which involves private traders were totally absent during the pandemic period. On an average, total economic loss due to lockdown for paddy farmer amounted to Rs.3691/ha. The market access available to the paddy farmers in Kerala during Covid 19 lockdown period in the form of the well-established public procurement system turned out to be the most effective marketing channel during this exceptional situation which limited the lockdown related economic losses to around one percent of the total loss in state agriculture sector.

Key Words: Crop, Covid 19 Pandemic, Loss assessment, Market access, Marketing channel.

INTRODUCTION

The Covid 19 pandemic has marked its presence in India on 30th of January 2020. The pandemic slowly spread to various parts of the country. In order to curb the further blow out of the pandemic a nationwide lock down was announced on 25th March 2020. The sudden stoppage of all economic activities in the nation has disrupted the production and supply of goods and services in different sectors, and agriculture sector was not an exception. The United Nations has warned that the Covid-19 crisis could trigger food shortages around the world and as many countries have imposed curbs on food exports. The movement restrictions necessary to contain the spread of the virus has disrupted the supply chains of food and other critical goods, increasing delivery times and reducing availability of even the most basic food items world over.

The impact of the pandemic on an already

paralysed agriculture sector has turned devastating. Even though the nation is in a better position with regard to stocks of wheat and rice with the Food Corporation of India (83.27 MMT as on June 28, 2020), the delay in the farm operations due to labour shortage and disruptions in procurement, transport and processing may lead to a fall in the farm prices of a range of commodities. India is more concerned about this primary sector impact as more than fifty per cent of the country's population depends on agriculture for their livelihood. During the initial period of lockdown farmers were struggling to harvest as well as market their Rabi crop. The uncertainty in market ascended due to the sudden contraction of both demand and supply resulted from abrupt halt of economic activities, temporary restrictions on transportation, limited availability of packing materials, shortage of labour and lack of storage facility. Maintaining an undisrupted

Corresponding Author's Email id: neethaageco2009@gmail.com

¹PhD Scholar,

²Professor,

supply chain and access to markets for small / marginal farmers was the major challenge during the lockdown period. Usually large number of intermediaries are present in the market channel which increases the marketing transaction costs with negligible value addition (Goyal, 2010). The problems in market access and price uncertainty may also result in sub optimal production and investment decisions (FAO, 2011).

According to FAO framework for assessing disaster damage and loss assessment in agriculture, a disaster causes three types of effects in agriculture sector. These are damages, losses and macroeconomic impacts. In the context of Covid 19 pandemic, agriculture sector all over the world experiences two effects *i.e.*, losses and macroeconomic impacts. The loss is defined as the effects on economic flows and the value of lost output or income due to the disruption of the normal flow of goods and services in the economy and macroeconomic impacts as the changes caused by disasters to the expected performance of the national economy (FAO, 2012). According to a quick estimate by the Kerala State Planning Board, the lockdown loss in agriculture sector is Rs. 1570.75 crores and the crop paddy specifically suffered an estimated loss of Rs.15 crores.

Rice (*Oryza sativa* L) is the major staple cereal crop cultivated and consumed in the state of Kerala and constitutes 7.7 percent of the total cultivated area in the state. As per the data of the State government, in 2018-19, the area under rice cultivation was 1.94 lakh hectares with production of 5.78 lakh tonnes. The uncertainties in weather forced rice farmers to sow late for Rabi crop or to sow early for summer crop. Therefore, major sowing activities for current year confined to late November to early January which resulted in commencement of harvesting activities during end of February month. Palakkad, Alappuzha, Thrissur are major districts involved in rice production. Among these districts, Thrissur and Alappuzha records highest productivity interchangeably over years. Only 12 percent of

the total state annual requirement is produced domestically, and the remaining being imported from Andhra Pradesh and Karnataka (Nufaisa *et al*, 2019). The major portion of paddy produced in the state is procured by the state government through Kerala State Civil Supplies Corporation (Supplyco). As part of Decentralised Commodity Procurement (DCP), Supplyco procures paddy from the farmers, converts it to milled rice, and distributes through its fair price outlets. The procurement price is higher than the Minimum Support Price (MSP) for paddy as the State Incentive Bonus (SIB) is added to it. The paddy procurement rate was Rs. 26.95 per kg which included MSP of Rs. 18.15 per Kg and SIB of Rs. 8.80 per Kg. Besides, several private wholesale traders and millers, co-operative societies, farmer producer organisations are active in paddy marketing in the state. The harvesting and marketing of paddy for the current year got coincided with the lock down period, and the farmers had to experience multiple problems due to this exceptional situation.

This paper is a modest attempt to examine the market access and related challenges faced by the paddy farmers during the Covid 19 lock down period. A rapid assessment of the loss incurred during lockdown is also attempted. The prevailing marketing channels for paddy in comparison to the previous years would be analysed. The paper then addresses the changes in access to various marketing channels during the pandemic affected period. The paper also tries to capture the losses caused by the pandemic on the seasonal crop production in a quick mode, incorporating farmer perspective. Finally, the problems faced by farmers during marketing of paddy is rated for its severity.

MATERIALS AND METHODS

The study was conducted among paddy farmers in Kerala during the lock down period. In the context of pandemic, extensive data collection possibility was limited. The study is based on primary data collected from paddy farmers during the April and May months of lock down period. Three stage

$$RC_i = \frac{\text{Total score of all respondents for the } i^{\text{th}} \text{ problem}}{\text{Maximum on the continuum X Total no. of respondents}}$$

sampling method is adopted. In first stage Kerala state was selected purposively. Thrissur district being one among the major paddy producing district recording high rice productivity (3160 kg/ha) in the state (Anon, 2019) has been selected in the second stage. In third stage, majority of the farmers were selected using simple random sampling method from the district wise farmers' list available in the Supplyco website. Some of the farmers were also selected by snowball sampling method. The primary data was collected from 34 paddy farmers using a structured questionnaire during the period 15th April – 15th May, 2020. Due to restricted mobility, the data was collected through telephonic interview mode. The data on area, yield, marketing channels available and opted, price for current year and previous year were gathered. The losses due to lockdown and problems faced in harvesting and marketing of paddy during lockdown period was documented. Also, the severity of problems was ranked by the farmers.

Tabular and percentage analysis was used for comparing with previous year situation. The descriptive statistical methods were used for general analysis of data. Marketed surplus refers to the actual quantity of paddy sold by the farmer in the market (Kumar *et al*, 2013). The rapid/quick loss assessment was done according to the FAO guidance note for assessing the post disaster damage, loss and needs assessment for seasonal crops, published in 2012. For rapid loss assessment, losses are measured as the pre-disaster value of goods and services that were not and/or will not be produced or rendered over a time span due to the disaster. The total loss in the paddy cultivation is estimated as the sum of reduced gross income due to reduction in physical quantity and additional unexpected expenses. The reduction in physical quantity or production loss includes the loss due to delayed harvesting and post-harvest losses. The

additional expenses include the exceptional increase in usual paid out costs and unexpected expenses incurred due to lockdown. The relative severity of identified problems was rated using relevancy rating method. The farmers were asked to rate the severity of problem in a five-point relevancy continuum i.e. no decision, not relevant, less relevant, moderately relevant and highly relevant. The ranks assigned are 0,1,2,3, and 4 respectively. The problem with highest relevancy coefficient is ranked first is of highest severity. The following formula was used to work out the relevancy coefficient for the i^{th} problem (RC_i).

RESULTS AND DISCUSSION

Socio-economic profile of respondents

In the sample, 89 percent of the respondents were the participants in the institutionalised Supplyco paddy procurement programme. The general characteristics revealed that most of the farmers (53%) belong to age group of above 61 years. Marginal farm size dominated the sample (59%) followed by small farm size (35%). For simplicity, farm size of 2 Ha and above is classified as large farms in this study. The average farm size was 0.98 Ha. Average experience in paddy cultivation was 16 years and average household size was 5. All the farmers who participated in the survey were literate.

Marketing channels for paddy

The sequential order of routes through which a product moves from producer to consumer is referred to as marketing channel. Table 1 provides the details of marketing channels observed during two different marketing periods *i.e.*, current year (2020-21) which represents the pandemic period and previous year (2019-20) which represents normal period. Only two marketing channels were observed to exist during the pandemic affected period. The usual private trader involved marketing channel

Table 1. Identified marketing channels for Paddy.

Sl. No.	Normal period	Pandemic (lockdown) period
MC 1	Paddy farmer Kerala State Civil Supplies Corporation (SUPPLYCO) Private processor SUPPLYCO Fair price shop Consumer.	Paddy farmer Kerala State Civil Supplies Corporation (SUPPLYCO) Private processor SUPPLYCO Fair price shop Consumer.
MC 2	Paddy farmer Farmer Producer Organisation (FPO) Private processor FPO Retail outlet Consumer.	Paddy farmer Farmer Producer Organisation (FPO) Private processor FPO Retail outlet Consumer.
MC 3	Paddy farmer Private Wholesaler cum exporter Private processor Private Wholesaler cum exporter Foreign Retail outlet Foreign consumer	Nil

Note : MC denotes abbreviation of the word ‘Marketing Channel’

(MC3) was not observed during pandemic period. The local, national and international transportation problems, anxiety about the wellness, shrinking demand and the strong public procurement system might have reduced the presence of private traders in paddy purchase during the pandemic period.

Market access during the lock down

The lock down induced restrictions on mobility disarrayed the supply chain in the initial periods. The harvest and procurement of the *mundakan* (Rabi) crop, which normally starts from February third week got disrupted due to unavailability of machines and labour. Some variations in access to marketing channels during pandemic affected period was observed. As the figure 1 depicts, majority (89% & 85%) of farmers sold their produce through public procurement system in pandemic and normal periods respectively. But there is a slight increase (+3.00%) in the number of farmers who accessed public procurement system through Supplyco (MC1) during pandemic period than the normal period. The third marketing channel (MC3) involving private traders were totally absent during the pandemic affected marketing period. Those paddy farmers who accessed third marketing channel (MC3) in the previous year has completely shifted to MC1 as well as MC2 (Farmer Producer Organisation, FPO). The majority (67%) of total farmers who accessed MC3 in previous year, has

moved to MC2. This is due to the situation that the private traders had stepped back from procurement during the last minute, so some farmers could not register for public procurement. The non-registered farmers who were the members of FPO could sell their produce through FPO at a better price. The farmers who accessed FPO during previous year continued to access the same during the pandemic period also. The public procurement was proved to be more effective during this emergency. The procurement through FPO’s were minimal but was relatively stable when compared to private traders. The FPO’s were less concerned about the international and national demand shrinkage as they were mainly focused on harnessing the local demand.

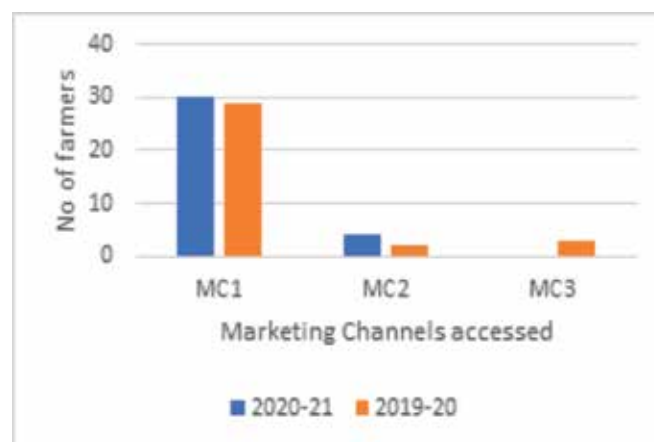


Figure 1: Access to various marketing channels

The delay in receipt of payment was another

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Table 2 . Problems in marketing paddy during lockdown period.

Sr. No.	Major problems identified	Relevancy coefficient	Severity Ranking
1	Shortage of spare parts and excess hiring charge for combined harvester	0.74	1
2	Post-harvest loss due to delay in procurement by agency	0.73	2
3	Availability of combined harvester	0.71	3
4	Transportation problems	0.52	4
5	Availability of harvesting machine operator	0.51	5
6	Labour shortage	0.49	6
7	Shortage of quality packing material	0.48	7
8	Delay in receiving payment for sold produce	0.35	8

factor that influenced the selection of marketing channel. The receipt of cash was comparatively faster in public procurement system than other marketing channels during the normal period. On an average, the farmer received cash payment within 16 days, 98 days and 20 days of procurement for MC1, MC2 and MC3 respectively. Much variation in the pattern of receipt of payment has not been expressed by the farmers for the lock down procurement also.

Loss assessment during the lock down period

On an average per hectare total loss to the paddy crop is Rs. 3691/-. This comprises of the gross reduction in income due to production loss and the additional expenses incurred on account of the special situation for extra wages, transportation charges, extra machine charges, 'break the chain expenses' etc. The mean production loss was 80.88 Kg/Ha and corresponding reduction in gross income was Rs. 2179/-ha. The mean additional expenses were estimated as Rs. 1512/-ha. An estimate of lockdown period financial loss to paddy farmers in the state is obtained by extrapolating the per hectare loss to the total paddy area during *puncha*(summer) season. The total economic loss for paddy crop during lockdown period is thus estimated as Rs. 18.04 crores.

Severity of lock down problems

The problems identified during the lockdown period were categorised as eight major problems.

The major problems, relevancy coefficient and severity ranking are presented in Table 2. The shortage of combined harvester spare parts and its excess hiring charge was the most severe problem as rated by the respondents during the lock down period. It is having a relevancy coefficient of 0.74 and was ranked first. This was followed by post-harvest loss due to delay in procurement by the designated agency with a relevancy coefficient of 0.73. The availability of combined harvester was ranked third. The least ranked problem was the delay in receiving cash payment for the sold produce. From the exercise of problem documentation, it can be summarised that the farmer faced lot of problems related to combined harvester machinery operation, post-harvest storage and the shortage of spare parts due to sudden unexpected lockdown, interrupted the harvesting operation several times. As a fallout, the sudden hike in price of spare parts added to the difficult situation faced by farmers. The undue delay from the side of procurement agency and absence of accessible storage space forced most of the farmers to leave the harvested paddy at field risking summer rains. This has resulted in post-harvest losses too. A welcome trend in the Covid 19 pandemic period was the volunteerism of local youth to address the labour shortage and transportation problems.

CONCLUSION

The market access available to the paddy farmers in Kerala during Covid 19 lockdown

period indicates that the public procurement system was the most effective marketing channel during this exceptional pandemic situation which limited the lockdown related economic losses in crop paddy to around one percent of the total economic loss in state agriculture sector. Even though there were problems in market access in terms of labour shortage, logistics and storage, the Supplyco enabled paddy procurement system and relatively stable procurement through FPOs helped the farmers to cope up with the situation. The incremental quantity procured by the FPOs points out the prospects of developing locally viable marketing channel for durable and perishable food products. The collective marketing of those value-added products through the retail outlets managed by FPOs and co-operatives will help to reduce the food distance – the distance between the farmer and the consumers. The necessity to maintain social distancing and increase in number of smartphone users brought about a surge in online shopping with door to door delivery of processed food products, grocery items, fresh fruits and vegetables etc. Properly planned, collective, localised and e-commerce marketing initiatives can harness the domestic demand potential in a sustainable way, ensuring remunerative price for producers and fair price to consumers.

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