



CORPUS PUBLISHERS

Current Trends in Engineering Science (CTES)

Volume 1 Issue 1, 2020

Article Information

Received date: June 02, 2020

Published date: June 30, 2020

*Corresponding author

Khurshied Ahmed Khan, Ghazi University
City Campus, Dera Ghazi Khan 32200,
Pakistan

Keywords Covid-19; Pandemic; Partial
lockdown; Wheat harvesting; Daily wage

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Research Article

Addressing the Impact of Covid-19 Lockdown on Agriculture, Food Security and livelihoods in Pakistan

Khurshied Ahmed Khan^{1*}, Ikram ul Haq M¹, Jamal Muhammad Khan²,
Muhammad Zahoor³, Osama Gohar⁴, Muhammad Haris Sher⁵, Muhammad
Salman Hameed¹, Muhammad Athar Khaliq¹, Shahbaz Ali¹, Ahmad Kamran
Khan¹, Tahria Batool Qasrani¹, Maqbool Ahmad¹, Nisar Hussain¹, Matlob
Ahmad¹, Muhammad Ijaz Hussain¹, Asma Noureen¹

¹Ghazi University City Campus, Pakistan

²Cholistan University of Veterinary and Animal Sciences, Pakistan

³China Agriculture, University Beijing, China

⁴Nowshera Medical College (KMU) Nowshera, Pakistan

⁵Iqra University Islamabad, Pakistan

Abstract

COVID-19 now spreading in Pakistan, massive consequences to health and livelihoods are feared as lockdown impacted the food basket and triggered logistics and harvest crisis especially in Punjab and Sindh. Millions of farmers are at the edge of disaster due to shortage of means of transportation, absence of labor force and threat of COVID-19 transmission. We addressed the impact of lockdown on wheat harvesting season in Pakistan and food prices post-COVID-19 outbreak and agriculture supply chain management of vegetables, fruits and pulses. As reported cases increasing in agricultural bread baskets of Pakistan (Punjab and Sindh) in which approximately 70% of harvest of wheat depend on traditional farm laborers, who came from low-income and remote zones before the harvesting period. But this time due to prolonged and partial lockdown in all remote and industrial zones of country they could not make it the right profit of the year. The Government announced financial support packages and partially lifted the ban on movement of carriage and equipment for harvesting, but the announcement packages shown to be not as much of useful because most of our machinery needs maintenances and repairing every year around the harvest season and the workshops continued in state of shutdown. It is imperative to keep an eye on the food situation in the country in the middle of this pandemic because keeping supply chains functioning well is crucial to food security. It should be noted that 2 to 3 million deaths in the Bengal famine of 1943 were due to food supply disruptions - not a lack of food availability. There have been information's of certain anxiety and panic purchasing and interruptions in logistics. It is recommended that to safeguard food security and to reduce the impact of the lockdown, we need to review food policy and analyze how market forces will respond to the imbalanced supply and demand, storage facilities and capacity, price control of products.

Introduction

Pakistan started its initial partial lockdown for 222 million people since mid -March 2020 .The early actions limited the spread of Covid-19 nationwide .However the lockdown dealing towards COVID-19 proving to be a major concern for public and especially for farmers in future. A new iceberg of crisis in general awaiting for public and especially for farmers who are struggling with harvesting, threshing, loading and transporting the standing crops (Wheat, Fruits, vegetables) to the targeted markets . So Pakistan needs to be prepared for potential surge in upcoming months till 2020 [1]. Expansion in testing and complete lockdown in hotspot areas will be key measure to stop the spread in upcoming months. As a result of after first lockdown of 15 days period expiration helped in limiting the health crisis. However the intervals of lockdown initiated new shock waves on agriculture sector and economy with massive job loss of daily workers and food insecurities [2]. The financial and commercial inactivity shock waves both on industry and agriculture will likely be much severe for Pakistan for two reasons. First the pre-Covid economy which was even now truncated due to compounding and prevailing problem of joblessness, low revenue and malnutrition .Secondly Day-to-day earning wage labor is the highest defenseless sector of our population. Currently, Pakistan has a total labor force of 72.5 million. Approximately 7 million are daily wage worker out of this total [3]. So it is vital to keep an eye on the food situation in the country in the middle of this pandemic. There have been reports of some panic-buying and disruptions in logistics during lockdown. Here we will begin to review the food situation and we presented some idea of prices and availability of food items. Here we focused on food prices post-COVID-19 outbreak and agriculture supply chain management of grains, vegetables, fruits and pulses impacted by lockdown.

Method and Approach

This was a desktop study. Most of the information's collected from print, electronic and social media. For exploring the influence of COVID-19 on foodstuff prices, we arranged miscellaneous food articles into grain, fruits, vegetables and pulses. The rate change drifts for these four groups are tabled by collecting daily price data from January 2020 (Pre-COVID) to April 30 (Post - COVID) 2020. Since daily price data for all provinces are not available, we are limiting our analysis only to the province of Punjab.

Results and Discussion

Effect on Agriculture and Supply chain management

Lockdown across the country to prevent the transmission of the corona virus has affected cities as well as agriculture and



supply chain of rural areas. For instance in March 2020 Wheat crop was ready but due to the Corona lockdown in the country, no laborers were available for harvesting as the government confined people to their homes. Further due to unexpected rains in Punjab and Sindh entire year of labor of farmer were at staked [4]. During partial lockdown phase 1 transport wheel partially almost jammed and all business suspended, but the Punjab and Sindh government tried its best to meet the target and buy wheat and deliver to warehouses. The Federal government had decided to procure wheat from March 15, with a discounted price of Rs. 1400 per quintal but it was delayed due to lockdown and non-availability of bar grains (wheat sacks provided by the government) [5]. The kharif season is about to begin and if the supply chain is cut off, the cotton and rice crop would be delayed and the supply of vegetables will also be suspended, so it is necessary to open agricultural procurement centers functional as soon as possible. If wheat is not harvested timely then planting of cotton, chilli or other crops would be delayed, because after harvesting wheat, time is required for cleaning the land etc. Similarly, time for agricultural water is also fixed so every farmer would make an effort. The crop should be harvested as soon as possible otherwise it will be damaged [6].

We should not forget the fact that the unseasonal rains have almost destroyed the mustard and gram crops, ignoring the fears of a decline in the overall production of wheat in Pakistan. Farmers could not even arrange for timely harvesting of gram. Due to unseasonal rains, the owners of small areas have not been able to plant the seeds in their lands after harvesting the wheat which ensures the production of vegetables allotted for the summer. The transplants of these vegetables will need to be re-planted only after several days of intense sunshine. Therefore, most of the vegetables will not be available in the market according to the collective demand in the summer season. In the days of severe recession and unemployment caused by the corona, their prices will be fatal for wage earners and low-income earners [7]. Prices of wheat and rice lingered constant with insignificant deviation over the period, indicating that COVID-19 had not majorly obstructed the grain values yet as shown in (Table 1). It is remarkable to footnote that among pulses; the prices of Moong and Masoor have greater than before by months 17.86% and 20.70 %, respectively (Table 1). It is predominantly in line to the escalation in demand as pulses are laid-back to hoard for an elongated period. In contrast to pulses, rates of broiler chicken live have dropped in major markets mostly due to the declining demand (Table 1). Decreasing inclination started with the shock of the Coronavirus pandemic and earlier to lockdown. This suggests that it was generally the condensed demand that led to the drop in prices.

We also explored values of three most frequently used up vegetables in Pakistani kitchens: potato, tomato, onion, (Table 1). Their price tendencies visibly showed that prices (except potato) have dropped in the range of 20% to 23%. Key input reason in the rate decline was of the production cycle as it can be witnessed that the decreasing drift jumps prior to the lockdown period. This can also be due to the drop in demand driven

by revenue shocks and additionally and significantly the unpreserved nature of these food items. Prices of the chosen fruit, namely banana along with miscellaneous items showed a mix trend (Table 1). Highly increasing and decreasing price trends are observed in sugar, mutton and petrol respectively. Alongside with the influence of the production cycle, elevation of fruits such as oranges, apples, banana, guava as a resources of improving immunity to stand COVID-19 infection can be a aspect in increasing demand for the fruit. Prices of banana and eggs, bread are credited to the routine fluctuation. Existing statistics advocates that the COVID-19 outbreak has not wrinkled the food prices yet, excluding for some impact on the prices of pulses. It is, however, too initial to mark any suppositions. The conceivable extent and spread of the Coronavirus to the rural areas and prolonged extending lockdowns after may disorder the delivery networks affecting the food prices. Keeping supply chains operative well is decisive to food security. It should be noted that 2 to 3 million expiries in the Bengal famine of 1943 were due to food resource disturbances-not a lack of food availability [8].

We can take confidence from the statistic that Pakistan has good storing facilities of grains and the new wheat crop about to be stored in warehouses after harvest. We cannot depend on international assets in such circumstances; there are sufficient reserves of unpreserved food items, such as wheat and rice, comprehensively to encounter any upwelling in demand. While there is no need to panic for an about to happen risk to food security, there is also no reason to be satisfied either. It is supposed that there will have no key deficiency of staple foods in coming months [9]. If, however, the condition stretches, then it will influence unpreserved food items first and then the staple foods. Unpreserved food items are transported on day-to-day basis, which demands stability and link between farmer and market demands with human-to-human interaction. Sustained limitations in lockdown will disturb every phase of the food supply chain particularly inputs (practiced seed, pesticide and fertilizer) and delivery. Deficiency of labor in supply chain could extremely upset plantation and harvesting cycle of new vegetables and staple crops. For a nonstop food supply, the government must keep the delivery of inputs (practiced seed, pesticide and fertilizer) to farmers, movement of labor in the agriculture sector, and delivery of food from farm to markets and market to dealers (shops).

Lockdown phase: The beginning of living with the virus

Using community welfare networks and nets as a channel between health shock and economic shock. The lockdown has obstructed practically all commercial activity. In urban and rural areas, leading to the widespread loss of jobs and incomes for informal workers and the poor. According to the Pakistan Bureau of Statistics (PBS), (56%) of Pakistani labour is employed in vulnerable (defenseless) jobs. The portion of defenseless workers is the maximum in agriculture (88%) but is also noteworthy in subdivisions such as wholesale and retail trade (70%), real estate (63%), hotels and restaurants (49%) and transport and telecommunication (49%). Labors in the agriculture and construction segments may drip the worst of the catastrophe, being less affected by the constraints of

Table 1: Average Monthly Price Trend of Essential Items in Pakistani Rupees (Rs) before and after COVID-19 Outbreak.

S.no	Description	Unit	Average Monthly Price January	Average Monthly Price February	Average Monthly Price March	Average Monthly Price April	% change Feb-over Jan. (Pre-COVID)	%change April-over March (After COVID)
1	1 Wheat Flour Bag	20 kg	944.44	900.82	890.56	884.51	-4.62	-0.68
2	Rice Basmati Broken (Average Quality)	1kg	81.57	81.75	82.03	82.58	0.22	0.67
3	Sugar	1kg	75.77	79.51	80.92	81.57	4.94	0.8
4	Pulse Masoor (Washed)	1kg	145.85	145.39	141.48	170.76	-0.32	20.7
5	Pulse Moong (Washed)	1kg	229.68	235.72	235.77	277.88	2.63	17.86
6	Chicken Farm Broiler (Live)	1kg	170.86	167.34	154.55	140.64	-2.06	-9
7	Potatoes	1kg	45.04	38.99	43.78	46.96	-13.43	7.26
8	Onions	1kg	59.5	60.93	72.09	55.34	2.4	-23.23
9	Tomatoes	1kg	102.18	45.48	37.52	29.79	-55.49	-20.26
10	Bananas (Kela) Local	1 Dozen	73.62	80.83	86.12	92.76	9.25	7.7
11	Eggs Hen (Farm)	1 Dozen	128.22	98.76	105	110.94	-22.98	5.66
12	Milk fresh (Un-boiled)	1 Ltr	93.76	93.87	94.75	92.07	0.12	-2.83
13	Petrol Super	Per Ltr	117.59	117.59	108.66	97.62	0	-10.1
14	Mutton (Average Quality)	1kg	890.01	892.82	905.1	918.99	0.32	1.53
15	Bread plain (Small Size)	Each	48.52	49	49.4	50.16	0.99	1.54



social distancing or short- run loss in domestic demand. Salaried employees in both the public and private sectors may also be able to weather the storm thanks to the possibility of work from home and paid leave [10]. The situation of daily-wage and self-employed workers in the cities is, however, more worrisome. Hawkers lose their business when educational institutions and offices are closed and train services are curtailed, waiters do not get paid when restaurants remain closed, labourers remain without work when export orders are cancelled, housemaids are turned away to minimize human contact. These workers are the most vulnerable to a major economic shock such as the one arising due to the coronavirus pandemic. The informal, undocumented nature of their work means that these are precisely the workers who can expect least direct support from the government in times of need.

Even a partial closure of the economy can result in this vulnerable section of the population sliding into further depths of poverty. The best way to address this urgent need is to use social safety nets extensively to stabilize their lives with food and cash. The Pakistan government has quickly responded to the crisis and announced a 300 million relief package, which includes food and cash transfers. Several provincial governments have announced their own support packages [11]. The central government's relief package, called Ehasas Cash program (Prime Minister's plan for well-being of the poor), is aimed at providing safety nets for those hit the hardest by the COVID- 19 lockdown. However, it is inadequate compared to the enormous scale of the problem [12].

Below are some additional measures needed in addition to the government package:

i. **Food and nutrition security:** Despite the fact that food is readily obtainable in Pakistan, but the country's generally food security is poor. High ranks of insufficiency rate and poverty and high food prices have set Pakistan assured of the highest degrees of malnutrition, undernourishment and infancy inhibiting in the world. The situation during COVID-19 is especially bad in rural areas, regardless of the standing of agriculture to the rural economy. This is owed to the high frequency of poverty in rural areas and the fact that many farmers are net buyers of food. Additionally, economic and environmental shocks of partial and complete lockdowns since March to April have left many poor Pakistanis deeper in poverty, which, in turn, decreases their entrance to food web [13]. With strong apprehension economic pressures increasing, it appears questionable that during and after pandemic will Pakistani Government be able to successfully implement a sequence of anticipated modifications intended to lessen poverty and increase food security even with food surpluses. Pakistan experiences high levels of food insecurity due to a lack of access for poor households. However here are some key points which need to be addressed particular in context of COVID-19 outbreak as future strategy to create food security in Pakistan [14].

- Women and children are particularly affected by malnutrition and only 15 per cent of children consume a minimally acceptable diet.
- Poverty is a particularly strong predictor of household food insecurity. Daily wages have increased, but food price inflation has reduced the purchasing power of poor households.
- Pakistan's ongoing economic problems will make it difficult to implement the proposed food security and poverty reduction reforms [15].

Conclusion

COVID-19 is an unprecedented and first time challenge for Pakistan; its large population and the economy's dependence on informal labor make lockdowns and other social distancing measures hugely disruptive. The central and provincial governments have recognized the challenge and responded aggressively but this response should be just the beginning. Pakistan must be prepared to scale it up as events unfold, easing the economic impacts through even greater public program support and policies that keep markets functioning.

Here are some measures are required to keep the agricultural sector and supply chains working smoothly:

- i. The government has correctly issued lockdown guidelines that exempt farm operations and supply chains. But implementation problems leading to labor shortages and falling prices should be rectified.
- ii. Keeping supply chains functioning well is crucial to food security. It should be noted that 2 to 3 million deaths in the Bengal famine of 1943 were due to food supply disruptions—not a lack of food availability.
- iii. Farm populations must be protected from the coronavirus to the extent possible by testing and practicing social distancing.
- iv. Farmers must have continued access to markets. This can be a mix of private markets and government procurement.
- v. Dairy farmers and Small poultry requisite more directed and targeted support, as their pandemic-related feedback stock and market-access hitches are serious.
- vi. Agriculturalists (Farmers, Workers) should be counted in in the government's aid platform and any community shelter databases addressing the crisis.
- vii. A lesson from during lockdown measures, demand mounted for home delivery of foodstuffs and E-commerce. This movement should be refreshed and encouraged.
- viii. The FBR (Federal Bureau of Revenue) should stimulate trade by sidestepping export bans and import restrictions.

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