



THE COVID-19 PANDEMIC AND AGRICULTURAL PRODUCTION IN RURAL INDIA

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ABSTRACT

The purpose of this study was to investigate the effect of Covid-19 in agricultural production in India. Phone surveys were carried out in 150 districts of 10 states and in India from 15th April 2020 to 15 May 2020. A total of 1345 farmers completed the survey. Out of them 94% were male farmers with secondary school education. Due to bad weather about 11% and due to lockdown-related reasons 24% of 1345 farmers did not harvest their crop. A total of 63% of farmers harvested the crop, but only 44% had sold it. 12% were still trying to sell their crop, and 39% had stored their crop, about 55% farmers reported lockdown-related issues as the reason for storing. Almost all farmers mentioned (97%) of the stem grains, 63% of daily dairy, 40% of daily vegetables, and 7% fruit per day. These values are much lower than previously reported to farmers in India before Covid-19. Indian farmers were mainly influenced by sale of their agricultural products not by crop production.

Keywords: Covid-19; Agricultural Production; Pandemic.

INTRODUCTION

Covid-19 is equipped with the biggest international humanitarian challenge, and since World War II faces the world. The virus has been deployed on a large scale and the number of daily items increases, where governments are reduced. India quickly, with a preventive gap, 21 days, according to the flat curve and time to use time for planning and resources. Indian attempts to fight the Covid-19 virus in the world. However, locks to economic costs and consumer influence to all sectors of the community. The Covid-19 gap in India was a large economic shock. I started on March 24, 2020 and continue with restrictions in a form. The economy stops full closure of companies in all sectors. Although agricultural activities are exempted in the early stages, the agricultural value chain also received large-scale disorders. This was a serious harmful effect on India's economy. The Coronavirus virus also increased a large counterpart from urban areas to rural areas in large parts of the country. The crisis time is a great parameter, such as basic challenges that can open new opportunities. In the current Corona virus, the direct challenge was to restore supply chains for base trade and reduce the government of immigrant workers. Although the challenges of the epidemic more effectively treated, but it is important to use the benefits offered by the crisis. The situation on the spot, new opportunities opened up by the crisis in the agricultural chain network opens. Metros are also many examples of farmers to ensure the direct delivery of goods to communities and communities of Avocado foreign equity products, such as fruit and vegetables common to come. The entire range of logistics on the move, but currently has no depth and screen. Fillip institutional, which creates this experience, can be born to live at different levels. The immigrant crisis should try to resolve long-term problems with the national sector as an opportunity to revise the whole aspect of immigration and the use of fungal skills or reconstructed immigrants. Some immigrants working in the chain and the supply chain of vegetables can be placed in large cities under the control of the lower physio on the marketing side, because they are a fair understanding of the differences in marketing preferences and consumers in urban consumers have. There are almost 6,000 feet in the

country and grow. These settings can be ideal for payment. The Indian government has provided many important reforms in the agricultural and national sector. It is currently important to increase all institutions and include all stakeholders to have a new and ambitious view. I want to congratulate the best team that takes this research with all India on the influence of Covid-19 in Indian agricultural production. I hope that the valuable view of the impact of this epidemic disease when agriculture and the Indian economy, which leads to the implementation of bankers and development developments to start policies and interventions for extensive growth and only for anxious sectors in the Covid-19, are presented Be time.

CORONAVIRUS (COVID-19)

CORONAVIRUS (COVID-19) expands rapidly worldwide, which affects life and resources for the lives of millions around the world. India reported on January 30, 2020, which leads to authorities to begin various measures to prevent epidemic release. Since this disease is very infectious, the locked lock that is applied from March 25, 2020 to include the reproduction of the 19th. During the first few weeks, there were severe restrictions and all non-commercial activities and companies, including the educational institutions of retail institutions and religious sites throughout the country. Then these restrictions are gradually relieved in many parts of the country.

The restrictions are also increased due to closure; they are an appropriate moment for the analysis of Covid-19 in different parts of the economy. A number of reports indicate the possibility of contraction of Indian GDP in 2020-21 years. This is a disturbing indicator, because higher gross domestic product will significantly contribute to the standard of living, poverty reduction, and improving other social and economic indicators. Although other parts of the pressures have been reported, it is important to analyze the impact on agricultural products, which provide the ability of the majority of the population in India.

AGRICULTURAL PRODUCTION MATTERS

The agricultural and allies are very important for the Indian economy. It's almost sixth to Indian national income and offers approximately 50% of the workforce. It is essential that we guarantee food security for the nation, and also affects the growth of the secondary and secondary part of the economy through front and back tires. The performance of the agricultural sector has a significant effect on its performance over many other fronts. For example, the World Bank's global development report emphasizes that agricultural growth is twice as high as at least one effective weakness in reducing poverty as an out-of-agricultural administration. Agricultural growth directly reduces poverty, with increasing agricultural income and indirectly, by producing labour and reducing food prices. In other words, the agricultural sector is a blessing for many parts of the Indian economy. India's position on the World Farm

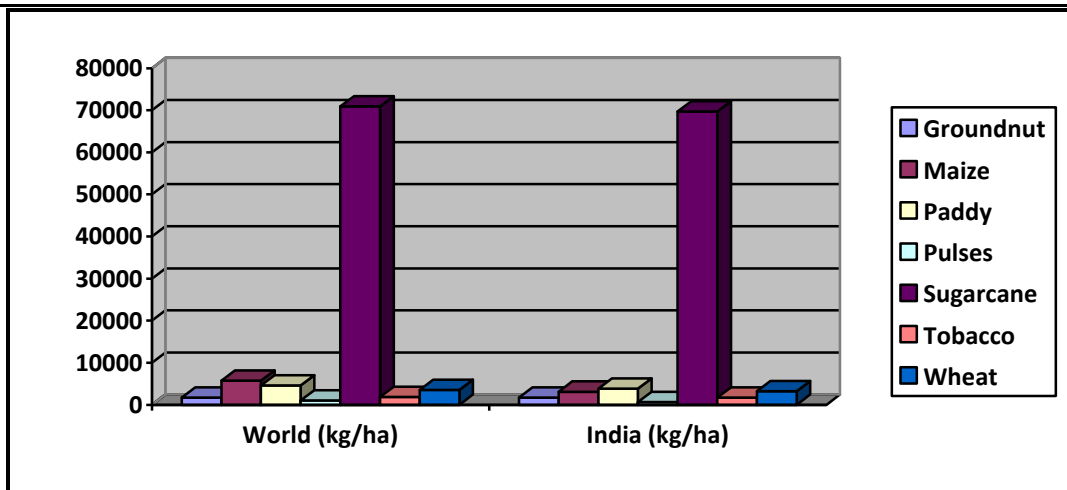
POSITION OF INDIA WORLD AGRICULTURAL PRODUCTION

According to Indian agricultural status in the agricultural world, he is the largest producer of pulses, mangoes, bananas, lemon, the second product for wheat, food, potatoes, potatoes, onions, grapes, grapes, etc. India produces more than five global rice productions and pulses. Similarly, they cover more than 20% of the global production of many gardening, such as gardening, clove, brinjal, banana, mango and dad. However, the low care zone is low level of productivity and gardening products in the country.

Table 1: Global Vs National Yield of Major Crops

S.N.	Item	World (kg/ha)	India (kg/ha)	Next to
1.	Groundnut	1686	1732	USA (4566), China (3709)
2.	Maize	5755	3115	USA (11084), Argentina (7576)
3.	Paddy	4602	3848	China (6917), Brazil (6210)
4.	Pulses	1009	664	Russia (2008), Canada (1964)
5.	Sugarcane	70891	69735	Gautemala (121012), USA (82412)
6.	Tobacco	1843	1711	Pakistan (2368)
7.	Wheat	3531	3219	Germany (7644), France (6757)

Source: FAOSTAT



Graph 1: Global Vs. National Yield of Major Crops

GLOBAL PERFORMANCE OF KEY PRODUCTS

Although India is one of the largest producers of some agricultural and horticultural products, the national yield of major crops (excluding walnuts) is below the global average. In addition, the national performance of these products is much lower than the highest performance in any other part of the world. The Covid-19 epidemic has had a negative impact on the global agricultural sector, and the Indian agricultural sector is no exception.

Table 2 : India’s Position in World Agriculture

S.No	ITEM	India (Million Tonnes)	World (Million Tonnes)	India’s % Share	Rank	Next To
1.	Crop production					
	(A): Total Cereals	294	2849	10.3	Third	China, USA
	Wheat	93.5	749.5	12.5	Second	China
	Rice (Paddy)	159	741	21.4	Second	China
	Total Pulses	17.6	82	21.5	First	China
	(B): Oilseeds					
	Groundnut (in shell)	7	44	15.6	Second	Canada,
	Rapeseed	6.8	69	10	Third	China
2.	Fruits & Vegetables					
	Vegetables & Melons	120	1075	11.2	Second	China
	Okra	5.5	9	62.0	First	
	Potatoes	44	377	11.6	Second	China
	Tomato	18.4	177	10.4	Second	China
	Onion (dry)	19.4	93.2	21	Second	China
	Cabbages & other Brassicas	9	71.2	12.3	Second	China
	Cauliflower & Broccoli	8.2	25.2	32.5	Second	China
	Brinjal	12.6	51.3	24.5	Second	China
	Fruits excluding Melons	91	866	10.5	Second	China
	Banana	29.1	113.2	25.7	First	
	Mango and Guava	18.8	46.5	40.4	First	
	Lemon & Lime	3	17.3	17.2	First	
	Papaya	5.6	12.6	44.4	First	

Source: FAOSTAT

MAIN OBJECTIVES OF THE SURVEY

This survey is embodied and started with a great view to assess the influence of Covid-19 in Indian agricultural production. Specific Objectives of the survey are given below:

- Agriculture and the production of allies, the price of farm gates, supply and import of agriculture, etc. Agricultural products in the farm market
- SHGS, NBFC-MFIS, FPOS, Farmers and MSME Club in Rural Areas
- To propose the policy of agricultural and national sector policy to facilitate the negative situation in the last Covid-19 item

METHOD AND PROCEDURE

The questionnaire is designed for collection of data. According to forbidden mobility, people were announced due to full closure by the government in India from March 25, 2020. The online link is shared, which followed their online responses through an organized questionnaire. The data and comments received through a professional sampling method of 23 states, including UTs resident by on line and collected data, were analysed using the appropriate statistical tool for access to the most important results. The reactions and the perception of farmers based on their interaction with different stakeholders such as Farmers, government officials, SHGS members, farmers clubs, farmers' organizations. Online survey was carried out from 15th April 2020 to 15 May 2020. To the objectives described last season, a questionnaire was designed for farmers' comments and the test was examined. From India, the online survey was the only option that is available for answering this field. Accordingly, the online link is shared with farmers that followed their answers through an organized questionnaire. The questionnaire is designed so that the assessment of the COVID-19 has an effect on different activities in the agricultural and national sector, negative, positive or no effect. Incoming responses, determining the effect on different activities in this section tried to continue further research. Data and comments were obtained through professional sampling method. The reactions and perception of farmers are based on their interaction with different stakeholders. The questionnaire includes questions for analyzing the effect of COVID-19 in aspects such as agricultural production. To analyze the effect on different dimensions, the index is used in the next method: Let's look at the example of in marketing agricultural products. For each region, our questionnaire asked if influence on the index is favourable, negative or unnecessary. While made this index: For each region, the favourite effect is coded as "1", the negative impact is encoded as -1 and no effect is encoded as "0". This is made for all indicators given by a particular question. The overall result of each state is divided by a number of areas and access to the final result. The overall result is classified in a low, moderate and highly classified class based on the obtained score.

TIMEFRAME OF THE SURVEY

The online study was conducted from 15th April 2020 to 15 May 2020 a period during which complete lockdown was enforced by the Government. There was complete ban on movement of persons and vehicles except some relaxation for essential services.

LIMITATIONS OF THE SURVEY

In view of the limited mobility of persons and vehicles in lockdown, the web responses are obtained only from 23 states of India. Further, the responses of the Farmers are supported their field level perception supported with discussion with various stakeholders operating in rural areas. Therefore, the findings could also be interpreted accordingly and used taking under consideration this limitation.

MAJOR FINDINGS OF THE SURVEY

The magnitude of impact of COVID-19 Pandemic on various sub-sectors of agricultural production is given here:

Agriculture: within the agriculture subsector, most of the states have witnessed a decline in production. States like Chhattisgarh (13%) and Himachal Pradesh (15%) have witnessed a pointy decline in agriculture production. However, some large agricultural states like Telangana (23% increase), Punjab (5%), Rajasthan (4.4%) and Gujarat (6.7%) have actually shown a rise in agricultural production which can be attributed to the very fact that Rabi season had witnessed a bumper crop production and harvesting of the crops had been completed in many of the states before the onset of the pandemic.

Horticulture: Horticulture being a perishable crop was adversely affected during the lockdown albeit there was no restriction on sale of fruits and vegetables within the market, except ban on operations of rural haats. All states except Gujarat (5%), Rajasthan (2.5%) and Karnataka (1.7%) have witnessed a decrease in production within the horticulture sector. Amongst the larger states, Himachal Pradesh, Chhattisgarh and Tamil Nadu faced the very best decline of 18%, 17.9 and 13.9% respectively.

Poultry: This sector was most strongly impacted altogether states (except Arunachal Pradesh where production was reported to extend by 25%) with production declining by a big amount. The decline in production levels was the sharpest within the states of Haryana (37.2%), Madhya Pradesh (34.2%) and Uttar Pradesh (31.9%). the autumn within the production levels in poultry might be directly attributed to the lower demand for poultry products thanks to the widespread fear prevailing that COVID-19 virus may spread through the poultry birds.

Dairy: The dairy sector was one among the smallest amount adversely affected sector after crop production because the demand for the dairy products was relatively stable and therefore the supply chain also didn't face large scale disruption during the lockdown. At the all-India level, the general dairy production declined by 6.6%, but this decline was of comparable small magnitude across most major states. The States of West Bengal (11.9%), Jharkhand (13%) and Chhattisgarh (11.5%) reported the most important decline within the dairy sector mainly thanks to decline in demand for milk products as most of the restaurants, sweet shops remained closed during April 2020.

Fisheries: the complete range of activities required to deliver fish and fish products from production to the final consumer is subject to indirect impacts of the pandemic through changing consumer demands, market access or logistical problems associated with transportation and border restrictions. This has led to serious disruptions within the fisheries supply chain. All states except Telangana (increase of 7%) witnessed a decline in fisheries production. Amongst the larger states, those which faced the most important decline were Maharashtra (23.5%), Madhya Pradesh (22.7%) and Andhra Pradesh (21.7%).

Meat: This sector had also been impacted adversely by the pandemic, but to a way lesser extent. one among the explanations for this was that in some regions there has been a rise in Pig/Sheep/Goat consumption because it is being considered a safer alternative to poultry. Telangana and Arunachal Pradesh have seen a rise in production levels by 10% and 25%, respectively. Remainder of the states have seen a decline within the production levels with Nagaland (25%), Haryana (17%) and Madhya Pradesh (16.3%) reporting the very best decline.

IMPACT ON AGRICULTURAL PRODUCTION: At All-India level, agriculture production in almost half (47%) of sample districts was adversely suffering from the impact of COVID-19. Magnitude wise, agriculture production (-2.7%) had not been adversely impacted significantly, mainly thanks to the very fact that harvesting of rabi crops like wheat was almost complete by the top of April 2020. However, production in allied sector had declined significantly, especially in poultry sector (-19.5%), followed by fisheries sector (-13.6%) and Sheep/Goat/Pig (S/G/P) sector (-8.5%), primarily thanks to drastic decline in demand for these products possibly thanks to the widespread fear circulating within the wake of COVID 19 regarding safety of non-vegetarian food, particularly poultry meat, for health related concerns. Similarly, production in dairy (-6.6%) and horticulture (-5.7%) sub-sector also reduced, due to reduced demand for these products and disruption in their supply chain.

IMPACT ON FARM GATE PRICES: Farm gate prices haven't declined significantly in crop sector (-2.2%). However, prices in allied sectors had declined within the range of twenty-two to 18%. This decline was highest in poultry sector (-17.8%), followed by horticulture (-7.6%), dairy (-5.6%), fisheries (-4.8%) and S/G/P (-2.9%) sectors respectively, mainly thanks to supply disruption caused by restriction on movement of vehicles. On the entire, 54% of sample districts witnessed adverse impact on farm gate prices of agricultural produce.

IMPACT ON AVAILABILITY OF AGRI INPUTS: thanks to restrictions imposed on movement of men/material and closure of outlets, availability of agri inputs viz. seeds (-9.2%), fertilisers (-11.2%), pesticides (-9.8%), fodder (-10.8%), etc. declined within the range of 9 to 11 %. At all-India level, 58% of sample districts were adversely affected in terms of availability of inputs.

IMPACT ON PRICES OF AGRI INPUTS: thanks to disruption in supply chain due to restrictions on movement of vehicles and closure of outlets and markets, prices of agri inputs viz. seeds (8.8%), fertilisers (10.0%), pesticides (9.0%), fodder (11.6%), increased within the range of 9 to 12 %. At all-India level, 54% of sample districts witnessed a rise in prices of agri inputs, possibly thanks to its non-availability.

IMPACT ON AGRICULTURE MARKETING: Even though local procurement centres were opened by various State Governments under their jurisdiction, yet restrictions on movement of vehicles had adversely impacted about 74% of sample districts in smooth operation of agriculture marketing through mandis. The impact on operation of rural haats was more severe, with 87% of sample districts being adversely affected. This was mainly thanks to an entire ban on opening of rural haats by the local authorities in majority of the districts within the country.

CONCLUSION

Global crises can have serious consequences for rural economies. In March 2020, India established broad constraints on the movement of goods and people who affect unprecedented economic activities. Soon, marketing should start their products. In addition, closure was announced, where the wheat season ended and farmers were ready to harvest and decrease the effectiveness. On the other hand, tomatoes, on the other hand, are relatively highly fluctuations with smaller and less access to official risk management tools; Tomato culture is largely dependent on manual work that is rare during the epidemic; It is at risk of high production that destroys tomato cultivation. In addition, tomato harvest is generally sold in open markets at prices that cause violent, even in a special season. In general, additional lock costs were 4% of wheat agricultural costs based on each hectare. Income discounts increase production costs, harvesting costs and transportation to the market alone six times, and about 10% of total agricultural costs per hectare. In general, the total revenue decline for both hectares of tomato construction companies is estimated to more than 43,000 INR or about 50% of expected income in the year. Before literature, these strategies can have long-term effects at the level of debt and future revenue flow, consequential consequences for future food security and human capital accumulation (Barrett and Maywick, 2006; Dercon & Hodinott, 2004). In addition, we clarify that differences in wheat are not guided by tomato income by position or farmers such as age, education, institutions or layers. It seems that this guide supports the claim that tomato farmers suffer more than wheat farmers because there is no policy to support marketing for this damaged product. In this way, the permanent acceptance of open market fluctuations will harm these farmers to the future shocks and political system, including future despair; include more prevalence of more infectious diseases or other infectious diseases. In a broader project that tests a new insurance product. Although the products that fields can protect against damage to physical products, small without tools for shock farmers after harvest, and most importantly, the risk of pricing fluctuations is available. In this way, more research is provided by providing a deeper insight into the benefits and disadvantages of the current economic system, and discovers any accessible alternatives, making flexible farmers. Effective price support programs are rare even in developed countries. India also tried to expand the price guarantees through the National Government Market Interference program (MIS), but these programs are affordable and limited benefits. Instead, public and private partnerships can provide solutions.

SUGGESTIONS AND IMPLICATIONS

Due to the decline in agriculture and the production of allies, support for farmers' income can generally be presented in particular, especially those involved in the chicken and fishing sector. In this regard, support for income can be improved by PM-Kisan a good choice

- Accepting aid can be considered for federal planning to buy a vehicle on small roads to use new emerging opportunities for direct production of agriculture and gardening to consumers.
- According to Agri product marketing through Mandis and National Henates, low price farms, farmers flow leads to bad improvement. Therefore, the benefits of the benefits can be considered at least one year.
- According to recovery, profits for a loan are for at least one year by banks
- Banks should be ignored to improve credit relationship and the next dose relative to the eligibility of SHGS.
- Enable micro-finance activities by injuring more liquidity in NBFC-MFIS.

- Mask opportunities and masks and direct delivery of food, fruits and vegetables by SHGS and FPO.
- MSME section with credit support (labour capital) in software programs, interest levels and reference schemes, at least to pay current loans
- Spread digital infrastructure for online trade for agricultural raw materials
- You must find banks to promote credit and / or dose credit to SHGS qualified

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