

COVID-19 IMPACT ON AGRICULTURE SECTOR

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Abstract

India is a country with an agrarian economy. Indian agriculture prioritizes employment, manufacturing, import-export, etc. over industry and service sectors. Even now 50% of the population depends on the agricultural sector for employment. Any kind of epidemic would turn the tide of recession on the entire economy. The WHO has declared the novel COVID-19 disease an epidemic. It has plunged the economies of many countries into a recession, not to excluded the Indian economy.

India is a major producer of various agricultural products. Such as wheat, rice, beans, peanuts, cotton etc. Although the COVID-19 epidemic has had far-reaching effects on agricultural economy of india, recent GDP estimates and the effectiveness of the green revolution have shown strength and resilience in Indian agriculture sector. Out of the three major economic sectors of India, agriculture is the only sector which has shown a positive growth of 3.4% in the first quarter of 2020-21 (April 2020 to June 2020). The increase was targeted at 5.9%, but saw a 2.5% decline. In this context, the researcher aims to analyze the impact of COVID-19 on Indian agricultural practices such as production, sales and consumption and to provide suggestions for achieving strategic planning to achieve rapid growth and development.

The present study will provide information on what has changed in agriculture before and after the novel COVID-19. Information will be received on whether the government is making efforts to remove the inhibitory effects of COVID-19 on agriculture. It remains to be seen whether the green revolution has made a difference in agricultural production at this time.

Keywords: COVID-19, Agriculture sector, M.S.P., G.D.P., Agriculture credit, Debt

1. INTRODUCTION

A disease called corona, which broke out in November 2019 in the Chinese city of Wuhan, is slowly affecting the entire world. To avoid this, every country resorted to lockdown. Thus the Corona epidemic that has swept the world has changed many of our priorities and our approach to priorities. As per the current situation, it seems that the existing corona virus will last for a long time and the only option is for us to find new ways to live with it, learn to live with vaccines and proper care. The epidemic has affected the agricultural sector as well as the various economic sectors of India like other nations of the world. But agriculture has been less affected than other sectors, as the need for food has never been less, no matter what the epidemic. For the first time, it is being seen that supply problems outweigh needs or demand problems. In such circumstances, the authors claim that the model of regional self-sufficiency should be implemented, which will alleviate the current situation, as well as the market will benefit the farmer by adopting this model.

Agriculture is the lifeline of India. Therefore, the present research study has been done in the context of the legislative or inhibitory effect of COVID-19 on production, distribution, import-export, etc. in the field of agriculture.

2. OBJECTIVES OF THE STUDY

The objectives for the present research study are as follows:

1. Gain brief information about Corona.
2. Obtaining general knowledge of Indian agriculture.
3. Investigating the effects of COVID-19 on the Indian agricultural sector.
4. To critically evaluate the effects of COVID-19 on the Indian agricultural sector.

3. GENERAL INFORMATION ABOUT COVID-19

The full name of COVID-19 is Corona Virus Disease-19. The disease is caused by SARS-COV-2. Formerly known as the novel Corona virus (n-CoV), it is the cause of the Corona virus epidemic outbreak in 2019-20. Symptoms

such as fever, dry cough, tingling, shortness of breath, etc. are seen in people affected by the virus. As a result, people with disabilities, old age and low immunity are more likely to develop pneumonia and various organ failures. The disease is spread by coughing or sneezing and its symptoms appear between 2 to 14 days.

A nasal and throat sample is examined for diagnosis, with results obtained within 2 days. It can also be detected by a blood sample or a CT scan of the lungs showing signs of pneumonia. The WHO has declared the 2019-20 corona virus outbreak an international health crisis. The World Health Organization (WHO) declared the disease a global epidemic on March 11, 2020, as the disease has spread to many countries across six continents.

4. GENERAL INFORMATION ABOUT INDIAN AGRICULTURE SECTOR

Indian agricultural history has the Indus Valley Civilization or even more ancient heritage. For example, the Rig Veda mentions farming, irrigation, cultivation of fruits and vegetables, etc. However, some scientists also believe that the history of agriculture in the Indian Peninsula dates back to AD. 10000 to 30000 BC old. About half of the farms in India are hold less than two and a half acres (one hectare) land. While only 4% of the farms are hold more than 10 hectares and two-thirds of the farmers own their own land.

- India is the second most agricultural populous country in the world after China. It ranks third in cotton production after the US and China, also it was the first country to experiment with a cotton hybrid.
- Navi Sabjimandi, located in the Azadpur area of Delhi, is the largest vegetable market in Asia.
- The largest production of pulses occurs in India.
- The establishment of ICAR (Indian Council of Agriculture research) resulted in the Green Revolution in India, as a result India becoming a self-sufficient nation in agriculture.
- India ranks second in the world in rice production, which is India's main crop. While India ranks fourth globally in wheat production.
- India ranks first in vegetable production and second in fruit production after China. While India is the second largest producer of tea.
- There are 1000 varieties of mangoes in the world in India alone. About 50% of the world's mangoes are grown in India.
- Sugarcane is also grown on a large scale in India. The Central Sugarcane Research Center is located in Lucknow.
- India ranks first in the world in both cashew production and consumption.
- Most of the world's jute is grown in India.
- Today, India ranks first in the world in milk production as a result of the White Revolution through the efforts of Dr. Varghese Kurien.
- India ranks first in the world in animal wealth. India's Amul Dairy and dairy products are world famous.
- India also leads in spice production. India produces 76% of the world's turmeric.
- India is the largest producer of pulses in the world. Cereals and lentils are the main crops grown in 80% of the farms.
- India alone has the largest arable land in the world. India uses the most fertilizer after America, Russia and China.

More than six lack villages in India depend on agriculture and allied activities. Agriculture provides employment to 65% of the people in India. The contribution of agriculture to the total GDP is 33%. Agriculture accounts for 10% of total exports.

5. DATA ANALYSIS OF COVID-19 IMPACTS ON AGRICULTURE SECTOR

Table 1 : Production of Foodgrains (In Millions tones)

| Crops | 2018-19 | 2019-20 | Changes |
|---------------------|---------|---------|---------|
| Rice | 116.48 | 118.87 | +2.39 |
| Wheat | 103.60 | 107.86 | +4.26 |
| Bajra | 8.66 | 10.36 | +1.70 |
| Jowar | 3.48 | 4.77 | +1.29 |
| Pulses | 22.08 | 23.03 | +0.95 |
| # Cotton | 280.42 | 360.65 | +80.23 |
| Total Nine Oilseeds | 315.22 | 332.19 | +16.97 |
| Sugarcane | 4054.16 | 3705 | -349.16 |

Lakh bales of 170 kgs. each

Source : Ministry of Agriculture and Farmer Welfare

1. COVID-19 does not show much difference in the production of major crops.

2. There is a constructive increase in every crop.
3. COVID-19 has only affected the sugarcane crop, it was 4054.16 million tones in 2018-19, which saw a decline of 349.16 million tones to 3705 million tones in 2019-20.

Table 2 : Distribution of Area Under Major Crops (In Percentage)

| Crops | 2018-19 | 2019-20 | Changes |
|---------------------|------------|------------|----------|
| Rice | 23.01 | 22.06 | -0.95 |
| Wheat | 15.28 | 15.85 | +0.57 |
| Pulses | 15.19 | 14.28 | -0.91 |
| Cotton | 6.57 | 6.74 | +0.17 |
| Sugarcane | 2.64 | 2.30 | -0.34 |
| Total Nine Oilseeds | 12.92 | 13.62 | +0.70 |
| Other | 24.39 | 25.15 | +0.76 |
| Total | 100 | 100 | - |

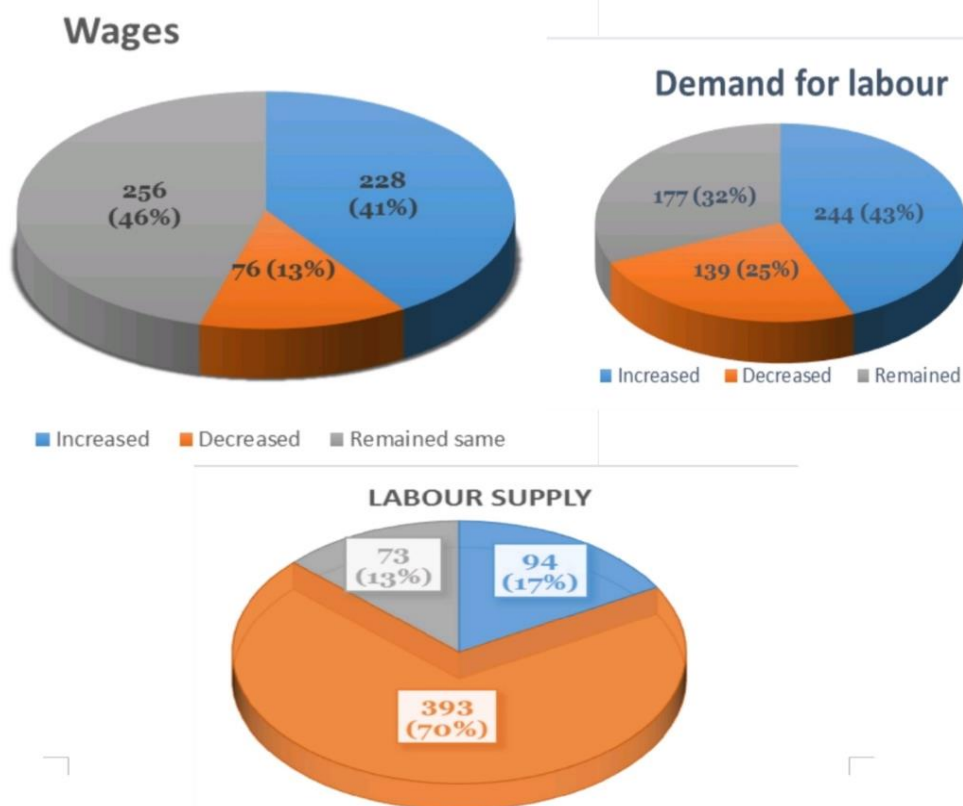
Source : Directorate of Economics and Statistics

1. COVID-19 causes both increase and decrease in the area under crop production.
2. Out of the seven major crops rice, pulses and sugarcane have seen a decline percentage in production area.
3. While the production area of wheat, cotton, nine oilseeds and other crops has increased in percentage.

Table 3 : District level Impact of COVID- 19 on Supply, Demand and Wages of Agri-Labour (Total sample districts 560)

| | Increased | Decreased | Remained same |
|------------------|-----------|-----------|---------------|
| Wages | 41 % | 13 % | 46 % |
| Labour supply | 17 % | 70 % | 13 % |
| Demand of labour | 43 % | 25 % | 32 % |

Source : NABARD Report Aug. 2020



1. COVID-19 has resulted in increase in wages of labour in 41% of the districts in India, reduction in 13% of districts and no change in wages in 46% of the districts.
2. Increased labor supply in 17% districts, decrease in labour supply in about 70% districts and no change in only 13% districts.

3. In various districts of India, labour demand has increased by 43%, decreased by 25% & remained same at 32%.

Table 4 : District level Impact of COVID-19 on marketing of Agri-produce (Sample districts 560)

| | Favourable impact | Adverse impact | No impact |
|-----------------------------|-------------------|----------------|-----------|
| Procurement by Gov. Agency | 12 % | 44 % | 44 % |
| Transporting to mandi | 4 % | 74 % | 22 % |
| Collection by pvt. Agencies | 4 % | 81 % | 15 % |
| Farmer getting MSP | 9 % | 36 % | 55 % |
| Weekly Market /Haats | 6 % | 86 % | 8 % |

Source : NABARD Report Aug. 2020

1. Due to the effect of Corona, the favourable impact is less in various buying and selling institutions in the districts that have been demonstrated.
2. While the prohibitive effect is due to the lockdown, the closure of various markets has further affected its transport and sales.
3. Lockdown has a negative effect on weekly markets and private institutions.

Table 5 : District level Impact of covid-19 On Availability and Price of Agri-inputs (Sample Districts 560)

| Agri-inputs | Increase in price | Decrease in Availability |
|-----------------------|-------------------|--------------------------|
| Seeds | 8.8% | 9.1% |
| Fertilizers | 10% | 11.2% |
| Pesticides | 9% | 9.8% |
| Fodder/cattle feed | 11.6% | 10.8% |
| Rental Agri-Machinery | 10.4% | 10.6% |

Source : NABARD Report, 2020

1. Due to the effect of corona, the price of agricultural produce shown in the table has increased by an average of 8 to 12% in the specified districts.
2. While the availability of agricultural produce has decreased in an average of 9 to 12% in the specific districts.

Table 6 : Wholesale Price Index of Commercial Crops (Base: 2011-12=100)

| Crops | 2018-19 | 2019-20 | Changes |
|-----------------------|---------|---------|---------|
| Oil Seeds | 140.5 | 151.4 | 10.9 |
| Fruits and Vegetables | 147.3 | 174.7 | 27.4 |
| Condiments & Spices | 129.6 | 143.9 | 14.3 |
| Raw Cotton | 116.6 | 116 | -0.6 |
| Raw Jute | 181.9 | 200.7 | 19.2 |

Source : Office of the Economic Adviser, Ministry of Commerce & Industry (Pocket book 2020, P. 71)

1. COVID-19 has been shown to have a constructive effect on the WPI of major crops.
2. Among major crops, RAW COTTON has had a negative effect on WPI, from 116.6 in 2018-19, down 0.6 to 116 WPI.

Table 7 : Flow of Institutional Credit to Agriculture Sector (In crore)

| Institutes | 2018-19 | 2019-20 | Changes |
|--------------------|------------------|------------------|-----------------|
| Co-operative Banks | 1,52,340 | 1,57,367 | 5027 |
| RRBs | 1,49,667 | 1,65,326 | 15,659 |
| Commercial Banks | 9,54,823 | 10,70,036 | 1,15,213 |
| Other Agencies | - | - | - |
| Grand Total | 12,56,830 | 13,92,729 | 1,35,899 |

Source : Office of the Economic Adviser, Ministry of Commerce & Industry (Pocket book 2020, P. 71)

1. Before and after COVID-19, the contribution of other agencies to institutional credit to agriculture is zero.
2. From Co-operative Banks, RRBs and Commercial Banks, the share of Commercial Banks in institutional lending to agriculture is higher.
3. Institutional credit to farmers from Co-operative Banks, RRBs and Commercial Banks has increased during the Covid-19 period.

Table 8 : Target & Achievement of production of major crops (In million tones)

| Crops | 2018-19 | | 2019-20 | |
|-----------|---------|---------|---------|---------|
| | Target | Achieve | Target | Achieve |
| Rice | 114 | 116.48 | 116 | 118.43 |
| Wheat | 102.2 | 103.6 | 100.5 | 107.59 |
| Pulses | 25.95 | 22.08 | 26.3 | 23.15 |
| Oil seeds | 35.99 | 31.52 | 36.1 | 33.42 |
| Cotton | 35.5 | 28.04 | 35.75 | 35.49 |
| Sugarcane | 385 | 405.416 | 385.5 | 355.7 |

Source : Directorate of Economics and statistics/Agricultural Statistics-2020

1. Before period of Corona, rice, wheat and sugarcane production was higher than expected in 2018-19 and pulses, oilseeds and cotton were lower than expected.
2. Due to the impact of Corona, cereals like wheat and rice produced more than expected in 2019-20, while pulses, oilseeds, cotton and sugarcane produced less than expected.

Table 9 : Impact on MSP (Rs./quintal)

| | 2018-19 | 2019-20 | 2020-21 |
|-----------|---------|---------|---------|
| Wheat | 1840 | 1925 | 1975 |
| Jowar | 2430 | 2550 | 2620 |
| Bajra | 1950 | 2000 | 2150 |
| Groundnut | 4890 | 5090 | 5275 |
| Cotton | 5150 | 5255 | 5515 |
| Barley | 1440 | 1525 | 1600 |
| Sugarcane | 275 | 275 | 285 |
| Ragi | 2897 | 3150 | 3295 |

Source : Monthly Bulletin 2020

1. The steady increase in MSP during the COVID-19 period also shows an increase in farmer's income.
2. The MSP for wheat in 2018-19 before Corona was Rs 1840, Bajra-1950, cotton-5150 and sugarcane-275.
3. After Corona, the MSP has increased to Rs. 1975, 2150, 5515 and 285 respectively in 2020-21.

Table 10 : Area Insured under all Insurance Schemes (Area in lakh hectare)

| | 2018-19 | 2019-20 | Changes |
|-------------------|---------|---------|---------|
| Gross Area Sown | 2002.03 | 2002.03 | 00 |
| Area Insured | 523.02 | 496.49 | -26.53 |
| % of Area Insured | 26.12 | 24.80 | -1.32 |

Source : Department of Agriculture (Pocket book, 2020)

1. The proportion of areas covered by insurance cover in the total manufactured areas under various insurance schemes has been reduced due to the effect of COVID-19.
2. Areas with insurance cover in total manufactured areas were 26.12% in 2018-19, falling 1.32% to 24.80% in 2019-20.

Table 11 : Imports-Exports of Principal Agri. Commodities (Value in Rs. Crore)

| | 2018-19 | 2019-20 | Changes |
|---|--------------|--------------|--------------|
| Agricultural Imports | 1,37,019.46 | 1,47,445.81 | 10,426.35 |
| Total Imports | 35,94,674.22 | 33,60,954.45 | -2,33,719.77 |
| Share of Agri. Imports in Total Imports (%) | 3.81 | 4.39 | 0.58 |
| Agricultural Exports | 2,74,571.28 | 2,52,976.06 | -21,595.22 |
| Total Exports | 23,07,726.19 | 22,19,854.17 | -87,872.02 |
| Share of Agri. Exports in Total Exports (%) | 11.90 | 11.40 | -0.50 |

Source : Department of Agriculture (Pocket book, 2020)

1. The proportion of agricultural imports has increased during the COVID-19 period. The proportion of agricultural imports was 3.81% in 2018-19, it has increased by 0.58% to 4.39% in 2019-20.
2. Agricultural exports were reduced while foodgrain supply was maintained in the country. The proportion of agricultural exports was 11.90% in 2018-19, it has decreased by 0.50% to 11.40% in 2019-20.
3. Thus, the impact of COVID-19 on India's agribusiness has been negative.

6 EVALUATION OF THE STUDY

The global epidemic called Corona has had devastating effects on the world economy. It has also had the adverse effect on global agriculture. The Indian agricultural sector is also suffering the consequences of COVID-19.

- Despite the difficult situation in Corona, agricultural production has increased from 297.50 million tonnes in 2019-20 to 305.44 million tonnes in 2020-21 with an increase of 2.66%. But various sales outlets like APMC remained closed due to the lockdown inadequate sales have led to shortage of food supply, low agricultural returns, rising production costs, increase in farmer's debts.
- Agricultural imports increased by 0.58% and exports declined by 0.5%, reflecting the state of agricultural deficit in India's foreign trade.
- The MSP has been increased over the previous years to meet the farmers' compensation deficit due to Corona.
- Institutional lending has also increased by 10.81%, but its benefits have not fully reached small and marginal farmers.

7. CONCLUSION

Indian agriculture accounts for 17% of GDP and provides employment to 70% of the country's rural population. But the global epidemic in the form of corona has led to negative trends in Indian agriculture sector. From the present study, it can be seen that the Indian agriculture sector, which was an important part of the country's economic development today, is in a precarious situation. The government also have been made efforts to overcome the problem of farmers and farming by implementing various schemes PM-KISAN, UNIVERSALIZATION OF MGNREGA, KISAN-SAMPADA Scheme, PMFBY etc. and on May 15th, 2020 honourable finance minister announced a rupees 1,00,000 crore agriculture infrastructure fund for creation of FARM-Gate Infrastructure for farmer. So that the wheel of agriculture, which is the foundation of the country's economic development, becomes active again.

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