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COVID-19 and its impact assessment on agricultural activities on farming community in Haryana

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Abstract

The COVID-19 pandemic has brought about substantial challenges in every sector, particularly agriculture. This study explores the impact of the pandemic on agricultural activities and the socio-economic conditions of farmers in the Gurugram district of Haryana, India. A total of 120 farmers from selected villages across three blocks that is Sohna, Farrukhnagar, and Pataudi were surveyed using a well-structured interview schedule. Findings reveal a significant disruption in agricultural operations due to the pandemic-induced restrictions. The analysis revealed that 58.30% of the farmers reported reduced access to markets, followed closely by 57.50% who experienced difficulty in accessing essential inputs like seeds and fertilizers. Half of the respondents agreed there was a disruption in the supply chain, while 45.80% noted an increase in production costs. Additionally, 38.30% faced challenges in transporting and distributing produce, and an equal percentage experienced delays in crop sowing. Interestingly, 42.50% disagreed with the notion of labour shortages, and 46.60% denied experiencing financial losses from market fluctuations. Regarding socio-economic impact 59.17% of farmers reported increased insecurity about life, followed by a 57.50% rise in healthcare investment. Other impacts included increased debt (38.30%), unchanged stress levels (47.50%), and no change in media exposure (42.50%). Minimal changes were also noted in children's education, family isolation, extension contacts, and social ceremonies. The least affected areas were household assets and secondary income generation, with many farmers reporting no improvements. This study underscores the need for resilient agricultural systems and targeted policy interventions to support farmers during public health emergencies and beyond.

Keywords: COVID-19, community engagement, agricultural activities, impact

Introduction

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has presented an unprecedented global challenge since it first emerged in late 2019. With its rapid spread and diverse clinical impacts, COVID-19 has profoundly affected public health, economies, and societies worldwide (Stawicki, *et al* 2020) [4]. The COVID-19 pandemic has had a profound impact on agricultural production worldwide, disrupting supply chains, labour availability, and market dynamics in unprecedented ways. (Sridhar *et al.*, 2023) [3]. One of the most significant challenges faced by farmers has been labour shortages due to restrictions on movement and social distancing measures. Migrant workers, crucial for seasonal planting and harvesting, were unable to travel to farms, leading to delays and reduced efficiency in agricultural. (Klocker, *et al* 2020) [5]. The global economy has been significantly impacted by the COVID-19 pandemic. Prior to the pandemic, the global economy was slowing down again, unemployment was increasing, and imbalance levels were high. (Song, *et al* 2020) [6]. The COVID-19 lockdown was unique in that it caused a decline in both supply and demand. Following that, the epidemic expands beyond a health crisis to become a

global financial crisis as well. (Wang, *et al* 2021) [7]. It is apparent that the farming area would be negatively impacted by a particularly severe epidemic. prevalent. Contracting markets and declining yield costs are the results of the disruption of supply chains (Erokhin & Gao, 2020) [2].

In view of this the present study was designed with following specific objective

- To know the impact of Covid-19 on agricultural activities
- To know the Impact/Challenges of pandemic on farming families
- To know the Socio-economic impact of pandemic on farmers

Materials and Methods

This study was conducted in Gurgaon District of Haryana State. Three blocks were selected from Gurgaon district village Garhi Bazidpur, Hajipur, Baluda and Raiseena from block Sohna; village Sultanpur, Sampka, Daboda, Jatola, Jori, Patli, Hazipur and Khetawas from block Farrukhnagar; and village UnchaMajra, Khalilpur and Inchha Puri from block Pataudi were selected. On the whole, a total of 120

farmers were surveyed with the help of wellstructured interview schedule. Data were analyzed and tabulated to draw the inferences as per objectives of the study

Results and Discussion

Impact of Covid-19 on agricultural activities

With regard to the impact of Covid-19 on the agricultural activities Table 1 clearly revealed that there was reduced access to market as agreed by (58.30%) farmers followed by difficulty in accessing necessary inputs as agreed by (57.50%) farmers and (50.00%) of the farmers also agreed to the statement that there was disruption in supply chain

(fertilizers, seeds etc.) The statement increase in production cost for the farmers was agreed by (45.80%) farmers followed by (38.30%) farmers who agreed on the statement challenges in transporting and distributing produce to the market and (38.30%) of the farmers somewhat agreed on the statement delaying in sowing of crops for upcoming seasons. The 42.50 percent farmers disagreed to the statement of disruption in availability of agricultural labour. Likewise, 46.60 percent respondents also disagreed to the statement that there were financial losses due to market fluctuations.

Table 1: Impact of covid-19 on agricultural activities (n=120)

Statements	Agree	Somewhat Agree	Disagree
Reduced access to market	70(58.30)	29(24.20)	21(17.50)
Difficulty in accessing necessary inputs	69(57.50)	30(25.00)	21(17.50)
Disruption in supply chain (fertilizers, seeds etc.)	60(50.00)	30(25.00)	30(25.00)
Increase in production cost for the farmers	55(45.80)	38(31.70)	27(22.50)
Challenges in transporting and distributing produce to the market	46(38.30)	42(35.00)	32(26.70)
Delaying in sowing of crops for upcoming seasons	42(35.00)	46(38.30)	32(26.70)
Disruption in availability of agricultural labour	30(25.00)	39(32.50)	51(42.50)
Financial losses due to market fluctuations	26(21.70)	38(31.70)	56(46.60)

Figures in parentheses denote percentage
Responses were multiple

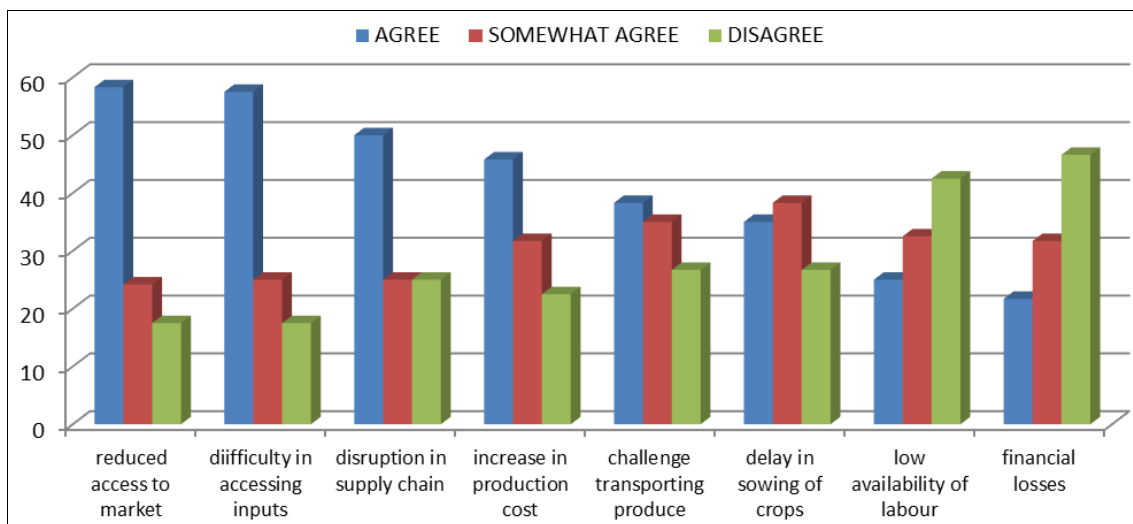


Fig 1: Impact of pandemic on agricultural activities

Impact/Challenges of pandemic on farming families

With regard to the impact / challenges of pandemic on farmer families the analysis Table 2 clearly revealed that I rank was given to the statement decreased income by 60.00 percent of farmers followed by difficulty in accessing financial resources/loans for agricultural investments by 57.50 percent farmers was given II rank. Increase in risk of

food insecurity was given III rank followed by difficulty in accessing medical facilities which was given IV rank. Likewise transportation facilities were disrupted was given V rank and lastly mental health challenges due to uncertainties and stress caused by the pandemic was given VI rank.

Table 2: Impact/Challenges of pandemic on farming families (n=120)

Statements	Agree	Somewhat agree	Disagree	WMS	MS	RANK
Decreased income	72(60.00)	38(31.70)	10(8.30)	302	2.51	I
Difficulty in accessing financial resources/loans for agricultural investments	69(57.50)	30(25.00)	21(17.50)	288	2.40	II
Increase in risk of food insecurity	60(50.00)	35(29.20)	25(20.80)	275	2.29	III
Difficulty in accessing medical facilities	54(45.00)	40(33.33)	26(21.70)	268	2.23	IV
Transportation facilities were disrupted	47(39.17)	42(35.00)	31(25.83)	256	2.13	V
Mental health challenges due to uncertainties and stress caused by the pandemic	42(35.00)	38(31.67)	40(33.33)	242	2.01	VI

Figures in parentheses denote percentage
Responses were multiple

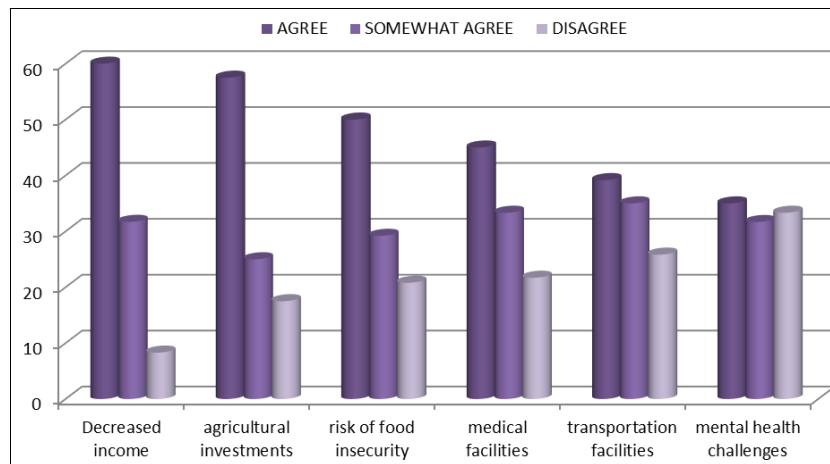


Fig 2: Impact/challenges of pandemic on farming families

Socio economic impact of pandemic on farmers

With regard to the socio-economic impact of pandemic on farmers Table 3 clearly revealed that 59.17percent farmers reported increase in insecurity towards life which was given I rank followed by 57.50 percent farmers who also reported increase in investment on health care and thus given II rank. Status of debt/loan statement was given III rank as 38.30 percent farmers reported increase in it followed by 47.50 percent farmers who reported no change in stress level and thus given IV rank. Likewise no change in mass media exposure was reported by 42.50 percent farmers thus given V rank followed by the statement that no change was

reported on investment on quality education of their children and was given VI rank. No change was reported by majority of the farmers regarding statement isolation of families thus given VII rank followed by statement that there was no change in extension contacts thus given VIII rank. Likewise no change was reported regarding expenditure on performance of social ceremonies and thus given IX rank. Lastly X rank was given to the statement increase in household assets were also no change was reported by the farmers followed by XI rank which was given to the statement new ways to generate secondary income as farmers reported decrease in it.

Table 3: Socio economic impact of pandemic on farmers (n=120)

Statements	Increase (3)	Decrease (2)	No change (1)	WMS	MS	Rank
Insecurity towards life	71(59.17)	28(23.33)	21(17.50)	290	2.41	I
Investment on health care	69(57.50)	30(25.00)	21(17.50)	288	2.40	II
Status of debt/loan	46(38.30)	42(35.00)	32(26.70)	254	2.11	III
Stress level	37(30.80)	26(21.70)	57(47.50)	220	1.83	IV
Mass media exposure	30(25.00)	39(32.50)	51(42.50)	219	1.82	V
Investment on quality education of their children	28(23.40)	34(28.30)	58(48.30)	210	1.75	VI
Isolation of families	26(21.70)	37(30.80)	57(47.50)	209	1.74	VII
Extension contacts	26(21.70)	36(30.00)	58(48.33)	208	1.73	VIII
Expenditure on performance of social ceremonies	25(20.80)	35(29.20)	60(50.00)	205	1.70	IX
Increase in household assets	12(10.00)	27(22.50)	81(67.50)	171	1.42	X
New ways to generate secondary income	10(8.30)	20(16.60)	90(75.00)	160	1.33	XI

Figures in parentheses denote percentage
Responses were multiple

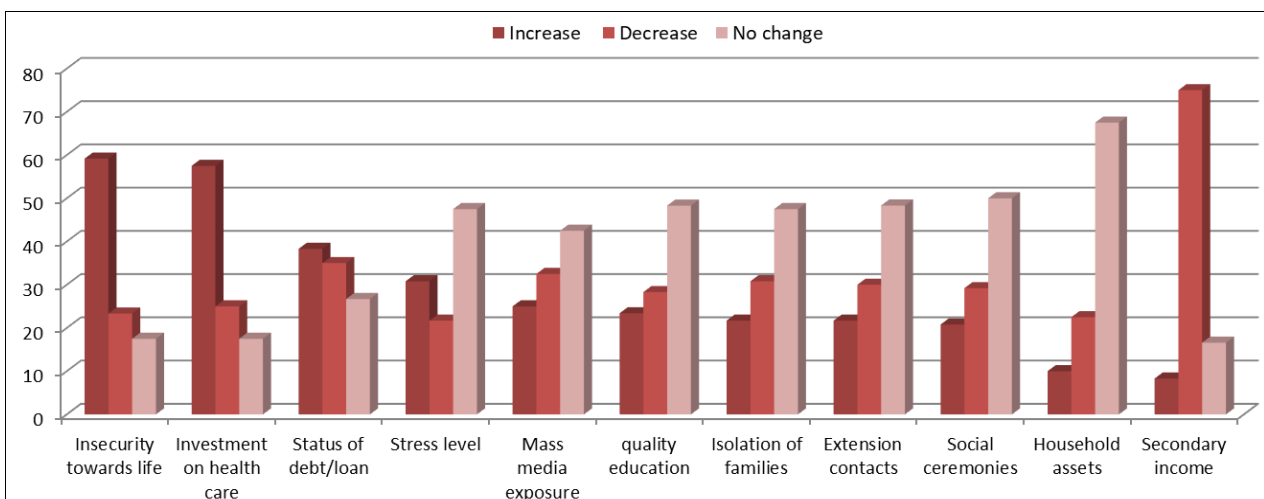


Fig 3: Socio economic impact of pandemic on farmers

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Conclusion

Regarding the impact of Covid-19 on agricultural activities the analysis clearly revealed that there was reduced access to market as agreed by (58.30%) farmers followed by difficulty in accessing necessary inputs as agreed by (57.50%) farmers. With regard to the impact / challenges of pandemic on farmer families the analysis clearly revealed that Ist rank was given to the statement decreased income by 60.00 per cent of farmers followed by difficulty in accessing financial resources/loans for agricultural investments by 57.50 per cent farmers was given IInd rank. With regard to the socio-economic impact of pandemic on farmers analysis clearly revealed that 59.17 per cent farmers reported increase in insecurity towards life which was given Ist rank followed by 57.50 per cent farmers who also reported increase in investment on health care and thus given IInd rank.

The government must take steps to safeguard farmers in the event that a situation similar to COVID-19 occurs again. Even during lockdowns, it needs to guarantee farmers' constant access to markets and farming supplies. To help farmers recover from income losses, financial assistance such as emergency relief packages, low-interest loans, and subsidies would be some good steps that can be taken. To ensure that farmers can continue to produce food and support their livelihoods in the event of future crises, it will be essential to have clear communication, provide timely help, and develop long-term resilience strategies.

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