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Research Article

Impact Of Covid-19 On Agriculture In Selected Farm Households

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Abstract

On the impact of COVID 19 has interrupted the financial accomplishments besides the resources limits considerably. In Indian economy agriculture sector alone will provide more than the contribution of other sector. The effect of COVID 19 has intimate the rural sector on the part of rural supply chain. Though the government has alloted to permits the transports allowing them to provide fodders, fruits and cereals a huge amount of carriers are but to acquire grip of their authorizations. This is prominent interval occupied for the farm yields to reach the market. In this background the major objective of the study were (i) COVID-19 and Agriculture sector in India, (ii) COVID-19 and role of government and (iii) Impact of COVID-19 and crop diversification in selected farm households. The study was conducted on both the primary and secondary data with Multistage random sampling technique was adopted. The Coimbatore district was selected and the district can be divided into 12 blocks and the total sample size was 100 Thondamuthur and Annur block. Through the analysis we clearly demonstrate that crop diversification with COVID-19 in selected farm households. The Indian government, in aidenticalsubstantialchange, has reported to ignoreeffort for agriculturalists, agriculture laborers and accumulating and sowing- related machines after the purview of lockdown.

KEY WORDS: COVID-19, Agriculture, Crop Diversificationand Role of Government.

INTRODUCTION

Economic development is necessary for apprasing the growth of a country. The prominence of a nation is contingent mainly on the financial development attained and growth possible it retain for upcoming growth. Economic development is an actual ancient and highly deliberated issue since all nations through the world irrespective of their growth attempt to raise their gross domestic product (GDP). In India industrial, amenities, farming sectors play a major part in financial growth. According to

the Economic Survey of India 2018-19 report being an initial rising economy is developing in faster manner in last five years about 7 to 5 per cent of average growth per annum and 4.5 per cent of average annual inflation **(Manjushree et.al., 2020)**. Indian economy, moderatelysustained by International Monetary Fund (IMF) assessed that one of the fastest growing economics in the World. Despite the predictions, surprisingly the economy has not fared well since in 2018-19 (5.8 per cent) indicating a slowdown economy.

ROLE OF AGRICULTURE

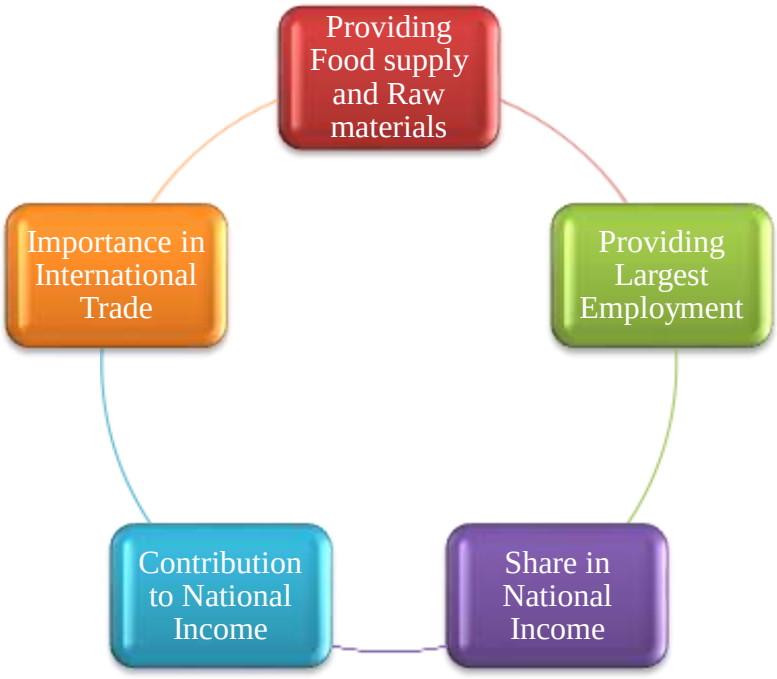

FIGURE:1

STATEMENT OF THE PROBLEM

The health crises at present about COVID19 has pretentious all walks of life. Protective survives of individuals' distress from the disease as well as forefront wellbeing responders have remained the importance of the countries. Government has fluctuated into activities since the corona virus occurrence made a unique condition. India stated a three week countrywide lock down till mid- April in the original phase, which has consequently ban prolonged till May 3 for attaining acceptance restraint of the virus spread. Though the exciting periods, in what way ensures the agriculture situation in India reactto the emergencies and whether the government measures would affect 140 million of agriculture holders through the country and later effect the country is very essentialfor the developing country in the world. Agriculture sector faced the instant challenges from COVID 19 to recover that certain measures to adopt the sustainable food system after the health crises period.

BACKGROUND OF THE STUDY

Arumugamet.al., (2020)concentrated on the activities of government on context of unexpected situation in corona virus in various circumstances. The study mainly focused mainly on role of government and ministry of Home Affairs provided the instruction on the extend from april 2020 to May 2020 provided to maintain agriculture sector and food supply. **Mahandra Dev. S and RajeswariSengupta (2020)**identified theriskundertaken byvarious aspects like agriculture production, labor force and chain of food supply. **PrangyaParamitaSahoo and SuvangiRath (2020)**assessed the agribusiness and impact of COVID 19 and found that there is trouble in financial way due to lockdown.**Shankaraghattaet.al., (2020)** pointed out that estimation of government activities under agriculture sector in India. The study investigated that food framework in pre and post period of Indian Agriculture in COVID 19.

MATTERS AND MATERIALS

The poorestportion of the impressivecommunitylimitation was that it overlapped with the nation's peak of production atperiod of a diversity of yields at season. Seasonalcrops were grown were ready for harvest that may hit adversely the farmers but there was a critical situation to complete the harvest. The study has been intended to study the agriculture sector and COVID 19. In this background the major objective of the study (i) COVID-19 and Agriculture sector in India, (ii) COVID-19 and role of government and (iii) Impact of COVID-19 and crop diversification in selected farm households. The study madeby data on primary and secondaryadopting themultistage random sampling technique. The Coimbatore district was selected at the first stage and the district can be divided into 12 blocks and then few blocks can be selected on the basis of irrigated area. At the second stage the chosen blocks can be further sub divided into the number of villages and the sample of few villages can be selected from the villages chosen. Thus at each stage the size of the farm households has become smaller and the total sample size was 100.

MAJOR FINDING OF THE STUDY

COVID-19 AND AGRICULTURE SECTOR IN INDIA

In recent period agriculture situation in India has handling well. In terms of production and geographical coverage has increased in the period of 2012-2017(AbimanyuJhajhria,et.al., 2020). The estimated growth of agricultural production in 2019-20 isvalued at 4 per cent. Food grain production is 296.65 million tonnes (4.08 per cent higher than 2018-19)estimated by fourth advance, where in the third advance estimates (2019-20), the horticultural production is probable to be 320.67 million tonnes in 2019-20 as equaled to 310.74 million tonnes in 2018-19, which is 3.19 per cent higher than 2018-19. The normal deviation in rabi crops has interrupted on the impact of late rains on the impact of climate change. According to the Food Corporation of India in September 2020 compiled that there is an optional stock to ensure the adequate food supply in the country.

In COVID 19 during lockdown which is particularly affected the food supply chains. COVID-19 globally affected the millions of people and the death toll is increasing fast. It is predictable that the lockdown actions would level the contaminationturnshortly, criticalfinancialevents and facilities shall be retained. In the period of COVID 19 there is an economic slowdown in India and also there is demand for food supply by agriculture sector. The government has taken several safety measures and policies for the development.

The global economic system has struck deep where India is not any expectation of COVID-19, there will be restrictions like weak financial quarters, activity losses, profits cuts and lower income margins (JyotiPrakeshShaoo and KailashSamal. 2020). Today, everybody is talking about the impact of COVID-19, however simplest from a countrywide attitude or urban centric angle. Unfortunately, not an awful lot has been spoken approximately COVID-19 affected the rural sector;there is a big of the economic system and standard consumption across product categories within the country. According to theUnited Nations document (2019) the population of India living in rural areas is 69 per cent, which constitutes to extra than seven hundredindividuals,coveringagriculturalists.

According to COVID- 19 the first impact is inside the rural quarter is food supply-chain. Government takesactionpermits to trucks to deliver agriculture production. This has prominent the phaseoccupied for theagriculture products to reach the market. In the opposite hand, there's a reasonableeffect on the demand aspect as the cafes were ordered to close down for the period in between period. This is causing a vast sales loss to many farmers across states. As per a posted report, the railway ministry shows that freight loading has dipped from a regular 10,000 cargo rakes in keeping with day to pretty much three thousands to four thousands now. As a result, the farmer has to seller his crop at a less expensive price, settle with a lower profit.

Secondly the COVID-19 affected the harvest practices in which unavailability of merchandise of agriculture production.

Atthirdly COVID-19 is the predicted change in the region of agriculture. The government allotted 9 crores by the governmentto farmers for landless agricultural labor, although the agriculturalist could remaingetting comfort since the government at once, latter is sited in a tough function at this period.

At Fourth itaffected the exports of India was the first experts of vegetation and as consistent with Agricultural and Processed Food Products Expert Development Authority, the average experts of India (2018-19) is of Rs 685 billion. Currently all of the ports were locked and huge stock takesassembledawakethrough buyers and farmers.

Thesmall scale industries were affected, to manipulate the respectable dimensionof stock then hire frequentlabors.

At next itaffects the estimate the feebledepletionmovementin after COVID-19. After matters arrivaltowardsusual at mainlyresponsiveness to human beings could remainprotectedprofessionsthenbecome the groups profitable. Throughout theperiod each peoplethen companies resolve tomaintainrigorousformspreceding theexpenditure.

At present can similarly the obstacle of growth strategiesatworldwide/ countrywide manufacturer's titans theconstituency. They will take time earlier than reassessing the access themarketplace. This may not be possible towardsuniformposition ofapproximate discern form of financialsmashat rurally might yieldowing of corona virus.

ROLE OF GOVERNMENT

In India the COVID 19 predicaments has fallout in agriculture production, Where the agriculture sector is predictable to decline at -1.3 per cent in 2020 (April to June). In Indian economy the impact of

agriculture sector is about 17 per cent where it is larger contribution of industrial sector (The Statistica, 2020), where the per cent of 0.52 is contributed by the agriculture sector on the growth of Indian economy.According to the Food and Agriculture Organization (FAO,2020) has indicated that COVID 19 is affected the demand and supply of agriculture production. The NITI Aayog indicated that 0.3 per cent rise in agriculture sector reveals 0.5 per cent of gross domestic product, when compared to non-agriculture sector the contribution sector is grown at more than 60 per cent. In India has increased the agriculture production is about 3.67 per cent (10.46 million tons) in between the year of 2018-19.

TABLE-1

DETAILS OF FUND ALLOCATED FOR AGRICULTURE SECTOR ON COVID-19

Rs in lakhs and Crores

S.No	Particulars	Amount
1	Production and marketing avenues	20 lakhs
2	Agri Infrastructure Fund	1 lakh
3	Formalisation of Micro Food Enterprises (MFE)	10,000
4	Fishermen	20,000
5	National Animal Disease Control Programme	13,343
6	Animal Husbandry Infrastructure Development Fund	15,000
7	Promotion of herbal cultivation	4,000
8	Addition facilities	500

Source: Government of India, (2020).

There is a negative impact on COVID 19 and agriculture production due to the accessibility of market to access the food supply, where there is fragile to local system in India. The social media played an significant role in 2019 under pandemic situation of COVID 19 (Mejia et.al. 2020).

In agriculture food system the migrants played an important role where the procedures affect the people move at nation and worldwide has ensured on shortages of labor has resulted in worth of agriculture market chain and food availability of market at worldwide (Food and Agriculture Organization FAO, 2020). The contribution total working population in informal sector frequently there is a daily wage workers includes agriculture workers, migrant and other labors. In India population of 263 million people has contributed in agriculture sector in the part of agriculture labors had work for wages even though they had no land, involved in crop production and also supply the crops in the various markets. The rural population had faced several situation faced in harvest period in COVID 19 pandemic crisis.

SOCIO-ECONOMIC CHARACTERISTICS OF SELECTED FARM HOUSEHOLDS

The general characteristics include community, sex, education; marital status and annual income were expressed in the selected farm households. The selected farm households are mostly headed by males. The percentages are being 80 in the Thondamuthur and 74 in the Annur. The data on the age of the selected farm households in the farm households in both the farmer groups reveal that about 42-50 in the age group of 20-40. But in Annur range from 55-60 per cent medium farmers and large farmers belong to

51-55 age groups. The percentages of farmers with no formal education were 4 in the Thondamuthur and 2 in Annur. In both the farmer groups nearly 57-63 per cent head of the families had either high school or higher secondary education. In the Thondamuthur farmer groups 7 per cent were completed UG and PG. In both the farmer group 57 per cent and 45 per cent of large farmer in Thondamuthur and medium farmer in Annur earningRs 1,00,000 to Rs 2,00,000 of annual income. In Thondamuthur 25 per cent and 35 per cent of them are medium farmers and large farmers in Annur 30 per cent of them are large farmers belonging to Rs 2, 00,000 and above.

CROP DIVERSIFICATION

Crop diversification during the before and after COVID-19 was measured using the Hirschman-Herfindhal diversification index. The diversification index was calculated as D1=1-H in the Hirschman-Herfindhal diversification index is measured as,

$$H=\sum [(CP_{ij}/\sum P_{ij})]^2$$

P_{ji} being the value of production of the i^{th} crop for the j^{th} farmer. The higher diversity index indicates greatest crop diversity in production pattern. This is a mean towardsdecreasethreathappeningin positions underdifferentranchearningsthreat. Throughsimplysingleor elsedualsustenanceyields, grangeearnings isconsiderable increasetowardsusualrisks than through a furtherdifferentiatedharvestingmethod (Healey, 1987). Timmer (1990) revealed the three causes for procedurefor producers to reimbursementadditionaldevotion to cultivatedmodification:

i) Onceproductionvaluesremainextremelyunbalanced, a well-diversified thenelasticcultivationdeliversadditionalsteady farmersearnings.

ii) Modification of rural economy is aimportantfoundation of revenuedevelopment for countrypeople; it offersenhancedexistingethics and fallingcountryside to townpassage.

iii) In the extendedpath, aexpandedharvestingdesign is extramaintainable than the concentratedFarming of a particularyield. The crop diversification index for the different crops cultivated in the selected block were calculated using the Hirschman-Herfindhal index and are shown in the following table-2.

TABLE - 2
DETAILS ON CROP DIVERSIFICATION INDEX IN THONDAMUTHUR FARM HOUSEHOLDS

Farmers / Crops	Before COVID-19				After COVID-19			
	SF	MF	LF	All	SF	MF	LF	All
Millets	0.912	0.920	0.932	0.920	0.997	0.991	0.995	**0.995*** **
Tomato	0.942	0.931	0.912	0.927	0.996	0.994	0.996	**0.996** **
Fruits	0.914	0.918	0.926	0.918	0.993	0.992	0.989	0.992
Turmeric	0.913	0.926	0.918	0.919	0.989	0.994	0.996	0.991
Onion	0.924	0.926	0.923	0.925	0.999	0.997	0.995	**0.998***

Source: Field Survey,(2020).

The table-2 explains the crop diversification using Herfindhal Index and it had compared the indices of both before and after COVID-19. The Herfindhal Index attains significance level when the result is nearest to 1. The diversification index calculation clearly explains that before COVID-19 has more diversification comparatively to after COVID-19. After COVID-19 have 0.998 diversification index for onion wherein before COVID-19 have 0.925. In TomatoAfter COVID-19 had 0.995diversification and before COVID-19 attained only 0.927. In the Thondamuthurblock, among the farm households small farmers had maximum crop diversification mainly inOnion (0.998), Tomato (0.996),Millets (0.995) andFruits (0.992). InTurmericbefore COVID-19 had 0.991 diversification index wherein after had 0.919. Through this analysis we clearly demonstrate that crop diversification favors to before COVID-19 rather than after COVID-19, so after COVID-19 are more important in enhancing crop production.

TABLE -3
DETAILS ON CROP DIVERSIFICATION INDEX IN ANNUR SELECTED FARM HOUSEHOLDS

Farmers / Crops	Before COVID-19				After COVID-19			
	SF	**MF**	**LF**	**All**	**SF**	**MF**	**LF**	**All**
Brinjal	0.912	0.922	0.934	0.922	0.996	0.992	0.998	**0.995**
Onion	0.942	0.930	0.911	0.927	0.995	0.997	0.997	**0.997**
Flowers	0.914	0.919	0.925	0.918	0.992	0.994	0.986	0.993
Curry leaves	0.913	0.926	0.917	0.917	0.988	0.997	0.999	0.992
Tomato	0.924	0.925	0.929	0.925	0.999	0.994	0.995	**0.999**

Source: Field Survey, (2020).

The table- 3 explains the crop diversification using Herfindhal Index and it had compared the indices of both before and after COVID-19. The Herfindhal Index attains significance level when the result is nearest to 1. The diversification index calculation clearly explains that before COVID-19 has more diversification comparatively to after COVID-19. After COVID-19 have 0.999 diversification index for tomato wherein before COVID-19 have 0.925. In onionafterCOVID-19 had 0.997 diversification and beforeCOVID-19 attained only 0.927. In the selected block, among the farm households small farmers had maximum crop diversification mainly inbrinjal (0.995),curry leaves (0.992) andflowers (0.993). Through this analysis we clearly demonstrate that crop diversification favors to after COVID-19 are more important in enhancing crop production.

CONCLUSION

COVID-19 has affected the growth of India Economy particularly in various sectors. Under the situation the primary sector faced challenging situation, where the government has different responsible initiatives to under taken the pandemic situation. The impact of COVID 19 and primary sector has faced the problems like labors, harvesting, transport, marketing, etc., thus the government has undertaken the situation also to control the pandemic situation. Evenoperational of the sourcesequence, with suitable safety processes for the individuals involved, is of dominantreputation.Transport of public distribution system (PDS) items to late mile distributionrepresentatives, mutually rail and road, has to be safeguarded by particularGovernment interventions. Supply of the commodities to vulnerable population, while

upholdingrecommendedprocedures and practice, mainly of social distancing, must be effectively monitored.

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