



Research Article

IMPACT OF COVID-19 ON INDIAN AGRICULTURE AND E-COMMERCE AS SOLUTION TO BOOST AN AGRICULTURAL ECONOMY

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Abstract: The present study established based on the primary data and secondary data and processed by descriptive statistics and garret ranking technique. Results of the study depicted that; the actions taken by the Govt. are really appreciable to supplement the farmers' income through various schemes. With respect to marketing of agricultural commodities, it is advocated to go for online trade (e-NAM, ReMS). Since the price in the online platform is higher, it is benefited for the farmers by wider market. Although online marketing benefited the farmers by eliminating middlemen exploitation and providing remunerative price, there were constraints, such as farmers' outstanding loan in financial institutions (I) and lack of immediate payment (II) were the major constraints faced by the farmers. Diversion to traditional market owing to problems in online market (I) and lack of funds for daily transaction (II) were the major constraints faced by the traders in online marketing. Lack of adequate grading and poor farmer participation were the major constraints faced by the market committee. The study suggested the need for creating awareness regarding the importance of grading in fetching remunerative price in online marketing and the system of online marketing shall uniformly establish all over the APMCs of Karnataka for the effective implementation.

Keywords: Covid-19, e-NAM, ReMS

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Introduction

The ongoing health crisis caused by the novel corona virus has majorly affected the mankind all around the world. During this challenging time, agriculture and allied sectors have also faced problems. Hence the present research studies, the impact of Covid-19 on agriculture, actions taken, and challenges faced mitigation measures by Govt. and solution of e-commerce in the field of agriculture.

The pandemic disease Covid-19 is now on lime light in the entire globe causing the drastic loss of human population and affecting the economy in many dimensions. Agriculture is also one of the many sectors which was affected by Covid-19 in production, marketing and distribution of agricultural goods. Since, the field of agriculture and industrial sectors are interdependent, agriculture is very important pillar for production and investment. Also, to maintain food supply chain and buffer stock for the future unseen contingencies, *etc.*, Govt. consider agriculture as a priority sector.

In the challenging times of Covid-19, it is crucial to provide agricultural commodities to the door step of the consumers. but, Covid-19 caused many of the problems in the field of agriculture such as inadequate raw material availability for production on time and inadequate transportation facilities to market the commodities. Hence e-commerce (e-NAM, ReMS *etc.*) can provide a solution to these kinds of problems. Electronic commerce is emerging as an attractive source of rural income generation. Recently, Government of India launched digital India on July 1, 2015 to create digital infrastructure for empowering rural communities and enabling digital delivery of services. It is needed even in the field of agriculture, as agriculture along with fisheries and forestry is one of the largest contributors to the Gross Domestic Product (GDP) in India. Thus, overall development of the nation is not possible by ignoring the field of agriculture and farmers in the process of development.

The bane of Indian agriculture is, not lack of technologies, research and development effort; but the inadequacy and inefficiencies in the dissemination of certain relevant information to farming sector.

Internet plays an important role in the agribusiness both as a new market place and as source of information. In recent years e-commerce has found its way in agricultural sector in India. Electronic commerce or online marketing comprises core business process of buying and selling the goods, services and information over the internet and technology availability has increased and its access has become easier. As a new trend, farmers use internet media to contact buyers and sellers and promote their products to improve their farm income.

Growth of online marketing in agricultural marketing

Various schemes and different projects have been undertaken by the government of India for the welfare of farming community such as 'my produce-my price', e-mandi, e-choupals, e-tendering *etc.* Recently, the new scheme Rashtreeya e-Market Services Private Limited (ReMS) has been established as a joint venture company with Government of Karnataka and NCDEX spot exchange limited having equal shareholding to implement the agricultural marketing policy to bring an efficiency and transparency in the agricultural marketing system for efficient price discovery for the benefit of farmers and other market participants.

Benefits of online marketing

There are many benefits to the farmers such as farmers to get better prices for their produce, price discovery is transparent, farmers and traders get familiar with computers and online auctions, farmers get greater bargaining power over traders and get better understanding about banking. Online marketing has the facility of direct electronic fund transfer from buyer to seller.

Table-1 Price difference of commodities in online and traditional marketing during 2017

SN	Commodities	Particulars	Markets					
			H	N	R	L	G	M
1	Green gram	OP	4666	4275	4800	4700	4667	-
		TP	4200	4175	4400	4500	4400	-
		%	9.52	2.39	9.09	4.44	6.06	-
2	Pigeon pea	OP	-	-	3200	2710	2733	-
		TP	-	-	3000	2630	2503	-
		%	-	-	6.66	3.04	6.75	-
3	Groundnut	OP	-	3472	4501	2756	3533	4150
		TP	-	3319	3900	2669	3243	3800
		%	-	4.60	15.41	3.10	8.94	9.21
4	Bengal gram	OP	-	5028	-	4150	4883	-
		TP	-	4909	-	3856	4400	-
		%	-	2.42	-	7.62	10.97	-
5	Sorghum	OP	-	1987	2050	-	1,600	-
		TP	-	1620	1825	-	1,466	-
		%	-	22.6	12.3	-	9.14	-
6	Soybean	OP	2800	-	-	-	-	-
		TP	2711	-	-	-	-	-
		%	3.28	-	-	-	-	-
7	Cotton	OP	4900	-	-	-	-	-
		TP	4400	-	-	-	-	-
		%	11.36	-	-	-	-	-
8	Dry Chilli	OP	13,500	-	-	-	-	-
		TP	12,000	-	-	-	-	-
		%	12.5	-	-	-	-	-
9	Black gram	OP	-	-	-	-	2,900	-
		TP	-	-	-	-	2,752	-
		%	-	-	-	-	5.37	-

Note: Figures in parentheses indicates percentage to the total. Source: Agricultural Produce Market Committee, Hubballi (2017)
H: Hubballi, N: Naragund, R: Ron, L: Laxmeshwar, M: Mundaragi G: Gadag, '-' indicates no transaction, OP: Online price TP: Traditional Price

The computerized system leads to the maintenance of mandi trading records. It will facilitate the licensed traders to bid online from anywhere in India and farmers have the right to accept or reject the price. Hence the research studies the e-commerce in the field of agriculture, in challenging times of Covid-19 and also gives information about actions taken, challenges and mitigation measures taken by the Govt. to supplement agriculture.

Objectives of study

1. To study the impact of Covid-19 on Indian agriculture, immediate challenges and mitigation measures by Govt. 2. To study e-commerce as an alternative marketing system of agricultural marketing

Material and Methods

The study mainly concentrated on the farmers to analyze benefits of online marketing over traditional marketing. The farmers were categorized into online farmers and traditional farmers. Online farmers and traditional farmers were selected from Hubballi APMC where online trading was initiated. Totally 60 online farmers and 60 traditional farmers and 30 traders were selected from Hubballi APMC, thus the total sample size constituted 150 respondents.

The study conducted based on the primary and secondary data available from appropriate sources. Researcher used descriptive statistics and garret ranking technique to analyse the data.

Result and discussion

Impact of Covid-19 on Indian agriculture, immediate actions, challenges and mitigation measures taken by the Govt.

Immediate actions

The following actions are taken by the Govt. during lockdown period.

Immediately after the nation-wide lockdown was announced, an INR 1.7 trillion package, to protect the vulnerable sections (including farmers) from adverse impacts of the Corona pandemic. The announcement of advance release of INR 2,000 to bank accounts of farmers as income support under PM-KISAN scheme, benefitting over 8.7 crore Indian farmers. It has also announced that the wages under MGNREGS will be raised from Rs. 182 to Rs. 202 per day.

Under the special scheme to take care of the vulnerable population, Pradhan Mantri Garib Kalyan Yojana (Prime Minister's scheme for welfare of the poor), has been announced. Additional grain allotments to registered beneficiaries were also announced for the next three months. Cash and food assistance to persons engaged in the informal sector, mostly migrant laborers, have also been announced for which a separate PM-CARES (Prime Minister Citizen Assistance and Relief in Emergency Situations) fund has been created.

The Indian Council of Agricultural Research (ICAR) has issued state-wise guidelines for farmers during the lockdown period. The advisory mentioned specific practices during harvest and threshing of various rabi (winter sown) crops as well as post-harvest, storage and marketing of the farm produce.

Due to COVID19 pandemic, the Reserve Bank of India (RBI) has also announced specific measures that address the "burden of debt servicing". Agricultural term loans and crop loans have been granted a moratorium of three months (till May 31) by banking institutions with 3 percent concession on the interest rate of crop loans up to INR 3,00,000 for borrowers with good repayment behavior.

Immediate Challenges

The following challenges had occurred after the actions taken by the Govt. In spite of all the actions brought and in view of continuing restrictions on movements of people and vehicular traffic, concerns have been raised regarding negative implications of COVID19 pandemic on the farm economy.

In India, this is the peak season of rabi and crops like wheat, gram, lentil, mustard, etc. (including paddy in irrigated tracts) are at harvesting stage or almost reaching maturity. This is also the time when the 'farm harvests' reach the mandis (market yards) for assured procurement operations by designated government agencies.

Moreover, any severe disruption to the supply of perishable fruits and vegetables, dairy products, fish, etc. The Union Home Ministry, in a very significant move, has notified to exclude movement of farmers, farm laborers and harvesting and sowing-related machines from the purview of lockdown.

Making the food grains, fruits and vegetables and other essential items available to consumers, both in rural and urban areas, is the most critical challenge for Government during the lockdown period. Smooth functioning of the supply chain, with adequate safety measures for the people involved, is of paramount importance

The Union Home Ministry's circular waiving restrictions on the inter-state and an intra-State movement of farmers/laborers, as well as harvesting and related farm machines, is indeed a step-in right direction. While ensuring availability of laborers for critical farm operations, their safety (from any COVID infection) and welfare must be prioritized by the Government systems. The sale of dairy products, fish, poultry, etc. has also been hit during the lockdown period as the uptake by the organized industry players has been affected due to shortage of workforce and transport issues.

Mitigation Measures

The poor sections of society are always the hardest hit in any disaster or pandemic situation. With about 85 percent of Indian farm households being small and marginal farmers and a significant part of the population being landless farm laborers, appropriate welfare measures to contain any damage from COVID are definitely going to help those with sincere and effective implementation.

The focus of the Government has to be to protect the lives of every citizen.

To sustain the demand for agricultural commodities, investments in key logistics must be enhanced. Moreover, e-commerce and delivery companies and start-ups need to be encouraged with suitable policies and incentives. The small and medium enterprises, running with raw materials from the agriculture and allied sectors, also need special attention so that the rural economy doesn't collapse.

To obviate the immediate concerns of scarcity of farm labor, policies must facilitate easy availability of machinery through state entities, Farmer Producer Organizations (FPOs) or Custom Hiring Centers (CHCs) with suitable incentives. To answer queries relating to the announced measures of Government and addressing grievances of farmers, besides providing advisories on farm operations; availability of agri-inputs, dedicated toll-free help lines/call centers (in local/vernacular languages) must be established by the Government [2].

Table-2 Constraints faced by farmers in online marketing

Particulars	Mean score	Rank
Farmer's outstanding loans in financial institution	76.23	I
Lack of immediate payment	76.05	II
Lack of confidence in online marketing	73.49	III
Lack of interest in online marketing	64.04	IV
Unawareness of ATM operation	56.23	V
Difficulty for small and marginal farmers to get e-payment	53.12	VI
Time consuming banking operations	52.84	VII
Lack of knowledge about SMS alerts related to price	52.65	VIII
Limited usage of mobile phones	45.58	IX
Financial help taken by middlemen/ Traders	44.17	X
Long term relationship with traders	40.04	XI
Non availability of PAN cards with farmers	34.65	XII
Lack of banking awareness	33.59	XIII
Illiteracy	27.52	XIV

Table-3 Knowledge of farmers on e-payment

Particulars	Traditional farmers (n=60)		Online farmers (n=60)	
	No.	Percent	No.	Percent
Farmers don't know e-payment	41	68.33	00	0.00
Farmers know e-payment but don't know the procedure.	19	31.67	08	13.33
Farmers know e-payment and do the procedure	00	0.00	52	86.67

Table-4 Constraints faced by traders in online marketing

Constraints	Mean score	Rank
Diversion to traditional market owing to problems in online market	80.34	I
Lack of funds for daily transaction	68.36	II
Quality of produce	67.89	III
Delayed official formalities	65.67	IV
Fear of income tax	55.48	V
Heavy competition among traders	52.65	VI
Poor internet facility	42.93	VII
Difficulty to e-pay for small and marginal farmers	42.31	VIII
Laborious task of e-payment	41.52	IX
Lack of complete knowledge in online Marketing	36.94	X

Table-5 Constraints faced by market committee

Constraints	Mean score	Rank
Lack of proper and adequate grading	91.85	I
Poor farmer participation	89.58	II
Diversion to traditional market owing to problems in online market	86.23	III
Delayed official formalities due to lack of staff	70.81	IV
Quality of produce	70.05	V
Influence of middlemen/ traders on farmers	64.44	VI
Lack of training programmes	55.72	VII
Poor internet connectivity	53.56	VIII
Inadequate mapping operation	43.29	IX
Illiteracy of farmers	41.37	X
Inadequate knowledge of e-payment	38.43	XI
Lengthy banking procedures	20.28	XII

E-commerce in the field of agriculture

The prime minister wanted a massive scaling up of a federal e-commerce platform for farmers and traders, known as the Electronic National Agricultural Markets or the e-NAM app. It was launched by ministry of Agriculture, Govt. of India on 14th April 2016 by PM Modi. It is implemented in 21 states, with 1,28,478 registered traders, 1,66,18,683 registered farmers 70,969 registered commission agents, and 1005 FPOs.

This model was based the model called Rashtriya e-market services of Karnataka. Compared to all the APMC (Agricultural Produce Market Committee) reforms in India, Karnataka's Rashtriya e-Market Services Pvt. Ltd (ReMS), has been the most popular one. By looking at the success of ReMS, Government of India (GOI) launched a national electronic trading platform called National Agriculture Market (e-NAM). The GOI intended to train at least 200 farmers in each village to go online. This participative farmers' campaign had been initiated to cover 11,000 villages through 1,100 clusters to reach 2.5 million farmers [4].

Karnataka's Rashtriya e-Market Services (ReMS) was awarded the DL Shah Platinum Award at the 11th National Quality Conclave (NQC), the annual flagship event of the Quality Council of India (QCI) held at New Delhi during 2017[3].

[Table-1] depicted that, online market price compared to traditional market price is higher in all the respective places. But, [Table-2], depicted that the constraints faced by the farmers in online marketing (ReMS) such as farmers' outstanding loan in financial institutions (I) and lack of immediate payment (II). [Table-3], indicated that, among 120 sample farmers, none of the traditional farmers know e-payment and do the procedure. Diversion to traditional market owing to problems in online market (I) and lack of funds for daily transaction (II) were the major constraints faced by the traders in online marketing [Table-4]. The major constraints faced by the market committee in online marketing were lack of adequate grading and poor farmer participation as depicted in [Table-5] [1].

[Table-1] Suggested the farmers to sell their agricultural commodities online since, it fetches higher price. But as per [Table-3], it is strongly advised to make sufficient awareness programmes, training programmes for the stakeholders to inculcate the procedure of e-payment confidently. [Table-2, 4, 5] depicted the constraints faced by the stake holders in online marketing. Those need to be solved by appropriate measures.

Policy implications

In the challenging times of pandemic disease Covid-19 in the nation, e-commerce in the field of agriculture plays a crucial to overcome the majority of the agricultural marketing problems and to balance the farm economy. The extra ordinary systems e-NAM and ReMS are really worth to follow. Grading which is the pillar of this e-NAM and ReMS (Karnataka), has to be improved in all the APMCS. And the awareness programmes are needed to be conducted to boost the confidence of the farmers to trade online. Hence by effective implementation of these new kind of marketing systems, will really work out well for farming community.

Application of research: Research can be useful in improving the online marketing of agricultural commodities in the pandemic situation

Research Category: Agricultural Marketing

Abbreviations: eNAM: Electronic National Agriculture Market

ReMS: Rashreeya e-Market Services

NCDEX: National Commodity Derivative Exchange Limited

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