

Battling the COVID-19 Agricultural Crisis through Collective Action and Social Entrepreneurship

Sagar K. Wadkar¹

Anshu Singh²

Abstract

The study attempts to capture the role of farmers' producer companies (FPCs) before and during COVID-19 in the Maharashtra State, India. The primary data collected from 32 FPCs across 16 districts of the State. Descriptive statistics and the Garrett ranking method were used to analyze the data. The results reveal that aggregation of produce was major business activity before and during COVID, with reorientation in their distribution systems. These enterprises contributed in building local resilience through campaigns about COVID-19, distribution of fruits & vegetables, masks, and sanitizers to marginalized sections of society for free. While the FPCs battled issues like agro produce wastage, piling losses and non-availability of labour, they continued marketing by adhering to COVID-19 protocols. The extension services and peripheral support provided by the state government, and its enabling agencies facilitated a good connection between FPCs and urban consumers. The authors assert that a collective action is a strong form of social entrepreneurship for battling the COVID crisis and revival of agricultural value chains. However, considering the present state of affairs, the FPCs model should be further strengthened with the help of capacity-building activities to build better "organization management systems".

Keywords : *Collective Action, Farmer Producer Company (FPC), Social Enterprise, Agri Value Chain, Aggregation, COVID-19, Supply Chain, Agripreneurship, Extension Services.*

1. Introduction

The agriculture sector, in India, employs 50 per cent of the total work force of the country and contributes 16.5 per cent to Gross Domestic Product (GDP) (Economic Survey, 2019-20) and 12.86 per cent to the national export (DAC&FW, 2018). Given this context, vulnerabilities in the sector have

¹ Assistant Professor, Vaikunth Mehta National Institute of Cooperative Management, Pune

² Assistant Professor, Vaikunth Mehta National Institute of Cooperative Management, Pune

a potential footprint on the overall economy in general and on marginal and small farmers (hereafter smallholders) in particular. Agriculture and food system have come into sharp focus as fallout of the COVID-19 pandemics in the most of countries across the globe. The susceptibility of agri value chains to COVID-19 in various parts of the world has been well elaborated (Morton 2020). According to the International Monetary Fund (IMF), the global economy is expected to shrink by over 3 per cent in 2020 and the unprecedented rise in the disease continues to affect all nations at large, economically as well as socially.

The impact of lockdown on Indian Agriculture Sector has been complex and diverse in many ways. In India, farmers have been affected on multiple fronts, especially by the lack of buyers in markets and heavy restrictions on transportation and logistics (Lai, 2020). The farm enterprises witnessed acute shortage of labor, logistics and transportation issues, reverse migration and all-time high export stagnation. Amidst such time the role of community-based enterprises like Farmers Producers Companies (FPCs) is quite vital to the recovery of rural economy. FPCs provide an organisational mechanism by building an enterprise based on collective action that can mobilize farmers' collective interests and seek to improve their economic well-being. These enterprises can give a greater bargaining power to its members by creating better markets for their produce.

Today, agriculture and food system have come into a sharp focus as fallout of the COVID-19 pandemic in most parts of the world. Until May, 2020 the current pandemic has essentially and largely remained an urban outbreak in India. Since there was immense pressure on maintaining adequate food supply, it has put pressure on the system to think and act immediately by addressing the core issues of the agricultural marketing system and undertaking appropriate measures for the time being to cope with the COVID crisis. Farmers who largely live on sustenance find it difficult to bear even a small disruption in cash flow and find themselves in deep debts. The governments' move to alleviate their troubles by putting agriculture under the list of the essential services has not done much to allay their fears during COVID-19.

In response to the COVID-19 pandemic, the Indian government imposed a stringent national lockdown from March 24 – May 31, 2020, announced many relief measures and subsequently imposed lockdown, which caused severe disruptions across agri-food supply chains (Ramakumar, 2020; Rawal and Kumar, 2020). The full nationwide lockdown brought all activities to a complete halt. Even though the restrictions were slowly eased from May 2020 in many States, production and trade has been disrupted due to transportation restrictions and labour shortages, which has made it extremely difficult for many retailers

to secure fresh and processed foods and to conduct business (Narayanan and Saha, 2020).

Collectivization has always been seen as an institutional platform for addressing the agrarian distress, particularly for smallholders and especially during current unprecedented times brought by COVID-19 which is no different. Indeed, the government is also trying to leverage the potential of FPCs for restoring the supply chain, ensuring livelihood security and meeting essential services of consumers. The State of Maharashtra is among the worst affected in terms of COVID-19 and it had wide repercussions for the FPCs as the largest number of such enterprises operates in the State itself. This has forced producers' collectives (farmer producers' groups, cooperatives, farmer organizations, and producers' companies) to look at direct marketing model to reach out to consumers to provide essential services by stretching themselves beyond the conventional value chain paradigms. In many ways, the model has turned out to be a success with farmer groups who could pocket in decent revenue by eliminating the middleman.

Against this backdrop, in the present study, an attempt is made to understand the role of FPCs, especially before the outbreak of COVID-19, during COVID-19 and post COVID-19 training and capacity building requirements for farmer entrepreneurs in the FPC model.

2. Literature Review

The impact of outbreaks and epidemics like COVID 19 is deep and widespread in social and economic spheres and therefore, "Agriculture" is not an exception. Similar outbreaks in the past have reported that panic and quarantines impact economic growth and human welfare (Hanashima and Tomobe, 2012). The severity of outbreak has raised serious question marks on food security and nutrition as supply chains crumble (Burgui, 2020; Torero, 2020). The series of shutdowns have brought global trade to a standstill by spurring local and domestic food substitute system and lesser dependency on global value chains (IFPRI, 2020). Export restrictions have limited the market access and completed broken down the value chains, which has been further exasperated due to closure of ports and restrictions on agriculture freight on commercial flights (Laborde, 2020; Ivanov, 2020).

In India, the agrarian distress was initially very widespread as harvesting could not be completed due to lack of access to inputs, shortage of workers, social distancing, lack of fuel etc. (NABARD, 2020). Although the sector has gained special attention amidst the pandemic, on account of high concerns for food safety and security, its potential role in economic recovery cannot be undermined. Agriculture always leads to broader economic development

and rural development and therefore should find a proper place in policy and strategic planning (FAO, 2017; Hwa, 1988; Timmer, 1992; McArthur et al., 2017). It is asserted that agriculture is a major driver of regional development and contributes to growth by raising gross output in direct and indirect ways (Loizou, et al. 2019). It should be accorded a special status and should be a key policy focus. The present pandemic has only reinforced the idea of strengthening agriculture to ramp up domestic value chains. Despite the widespread repercussions felt in the sector there are many examples to illustrate the important and critical role played by FPCs in combating the crisis situation.

Ramakrishnan (2020) observed that the COVID-19 lockdown brought many opportunities to FPCs, numbering 550 in Tamil Nadu State. FPCs have voluntarily involved themselves in the supply of fruits, vegetables and other essential commodities to consumers amidst the nationwide lockdown. According to official data, over 100 tons of fruits, 447 tons of vegetables and 116 tons of grocery were supplied by 90 FPCs through various marketing channels such as 65 farmers markets, 44 wholesale markets, 125 retail market shops and 45 mobile units. Nikam and Kale (2020) analyzed that many FPCs have showcased immense resilience and continued their operations despite un-harvested farm produce, transportation challenges, COVID protocols and availability of inputs. These definitely are the hallmarks of a striving entrepreneurial system to work out ways through adversities. Yet another study by Ranadive (2018) on *Abhinav Farmer Club* which is a network of 305 farmers spread across 17-18 villages, producing 22-23 vegetables as per market demand, found out that new models of marketing emerged. They have tied up with many malls, housing societies and corporate houses with proper transport facility in the form of '*vegetable vans*' to undertake direct marketing activities during lockdown.

Community models are more suited to alleviate local problems. Such models are innovative, multi sectoral and inclusive as compared to any external initiative (White and Morton, 2005; Gillespe, 2006). These communities exhibit resilience and empathy amidst crisis and there is a great deal of learning to draw upon these local-level responses for further panning and recovery of rural development systems (Gillepse, 2006; Morton, 2020).

3. Methodology and Data Collection

The present study has been conducted using primary data that has been collected from 32 FPCs spread across four regions (*Western Maharashtra, Khandesh, Marathwada, Vidarbha*) and 16 districts in the State of Maharashtra. The researcher has purposively selected the State on account of two reasons.

Firstly, the State has the largest number of registered FPCs and also the region was severely affected by COVID-19 outbreak. The primary data was collected through a detailed telephonic conversation with the entrepreneurs during April to June 2020. The design and administration of the questionnaire followed extensive preliminary qualitative inquiries with FPCs representatives. Due care has been taken to select the districts from all regions of the State, except Konkan region because of the communication and network connectivity issues and minimal presence of FPCs.

For each of the selected district, minimum five FPCs were contacted randomly and as per their availability, the discussion was completed with an average of 2-3 calls. The responses were recorded for the further analysis. Descriptive analysis and Garet ranking method was used for the analysis and interpretation of the results.

Table 1 : Number of FPCs selected across the State

Sl. No.	District	Number of FPCs Contacted	Number of FPCs responses recorded
	Western Maharashtra		
1	Pune	5	5
2	Satara	5	1
3	Solapur	5	3
4	Sangli	5	1
	Khandesh		
5	Ahmednagar	5	2
6	Nashik	5	2
	Marathwada		
7	Jalana	5	2
8	Parbhani	5	2
9	Aurangabad	5	2
10	Latur	5	1
11	Beed	5	3
12	Hingoli	5	2
	Vidarbha		
13	Amravati	5	2
14	Akola	5	2
15	Nagpur	5	1
16	Gondia	5	1
	Total	80	32

Paganini *et al.*, (2020) revealed that in Cape Town, farmer respondents reported selling their products to local communities, 25 per cent more frequently to compensate for the loss of demand from and sales to restaurants and high-end markets due to COVID-19 restrictions. Similarly, urban farmers responded to the temporary cessation of Non-Governmental Organization (NGO) retail markets by establishing neighborhood WhatsApp marketing groups and initiating word-of-mouth advertising for their produce.

Gogoi (2020) reported that tea growers faced serious problem of getting labour for different activities on the farm. Mahapatra (2020) found the importance of smartphones and its applications for farmers in providing information related to crop growth status, weather forecast & advisory, farm advice, market price & post-harvest management, online trading, advertising of their produce during this COVID19 lockdown.

4. Results and Discussion

The authors have made a conscious attempt to discuss the results in terms of 'Before outbreak of COVID-19' (in terms of Business Activities before COVID-19, and Supply-Chain before COVID-19); 'During COVID-19 and resultant Lockdown' (Business Activities undertaken during lockdown; Agencies involved in facilitating provision of essential services during State and Nation-wide lockdown; Working pattern during Lock down; Supply-Chain during COVID-19 and Lockdown; Licensing for Direct Marketing during Lockdown; Challenges faced during COVID-19 and Lockdown); and 'Post-COVID 19' (Training and Capacity Building requirements).

4.1 Before outbreak of COVID-19

Table 2 : Business Activities before COVID-19

Sl. No.	Activities before COVID-19	Frequency (Percentage)
1	Bulk Purchase of inputs and distribution to members and non-members	16 (50.00)
2	Facilitating to get benefits of Central and State governments scheme	13 (40.63)
3	Aggregation of produce for collective marketing	32 (100.00)
4	Value- addition by primary processing	32 (100.00)
5	Value addition by secondary and tertiary processing	12 (37.50)
6	Export of fruits to foreign country	2 (6.25)
7	Supply of veggies and food grains to modern retail centers	11 (34.38)
8	Collection of food grains for NAFED through MAHA-FPC	14 (43.75)
9	Supply of vegetables to hotel	7 (21.88)

(Source : Primary Survey)

Business activities performed by FPC members before COVID-19 are presented in Table 2. It may not be wrong to say that almost all FPC members performed aggregation of produce for collective marketing and value addition by primary processing (grading, sorting, standardization, packaging, labelling, etc.) before COVID 19. This is followed by bulk purchase of inputs and distribution to the members and non-members as well (50%). The collection of food grains for National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) through Maharashtra State level Farmer Producers Company (MAHA-FPC), as a State Level Producers Company (SLPC) (43.75%) and value addition by secondary and tertiary processing (37.50%) respectively was also an important activity. There were some FPCs i.e. 6.25 per cent have performed activities like export of fruits to foreign country and supply of exotic as well as regular vegetables to hotel and modern retailing centers i.e. 21.88 per cent and 34.38 per cent respectively.

It was observed that FPCs are collecting agro produce and at the farm level members are undertaking the primary processing like grading, sorting, packaging and standardization for fruits and vegetables, whereas for food grains, cleaning and packaging is done at their respective FPCs collection center. It was further observed that, to begin with, most of the FPCs have started the bulk purchase of inputs and few of them have established their own 'input shop', which has significantly reduced the farmers burden and thereby production cost.

Table 3: Supply-Chain for Marketing before COVID-19

Sl. No.	Supply Chain before COVID 19	Frequency (Percentage)
1	Village level (local) market	4 (12.50)
2	Taluka level (weekly) market	6 (18.75)
3	Other State market	3 (9.38)
4	District Market through Agricultural Produce Marketing Committee, APMC	5 (15.63)
5	Direct Marketing to consumers	27 (84.38)
6	Procurement through MAHA-FPC (on behalf of NAFED)	14 (43.75)
7	Manufacturing Companies	6 (18.75)
8	Wholesaler	6 (18.75)
	Total	(100.00)

(Note : Multiple responses were made available for respondents)

(Source : Primary Survey)

Supply chain of different food grains, fruits and vegetables before menace of the COVID-19 are presented in Table 3. Most of the FPC's used to sell their produce directly to consumer (84.38%) because they want to break the traditional supply chain by reducing number of middlemen in order to create new value-chain. They connected directly with consumers, particularly for the fresh fruits and vegetables (as these commodities were out of the purview of local physical agricultural markets (Mandis) since 2016 in the Maharashtra State). About 43.75 per cent FPC's did business transactions through MAHA-FPC for NAFED procurement of pulses and some of the FPCs also have a NAFEDs procurement center. This was followed by selling of their produce to the Taluka level (weekly) market, manufacturing companies and wholesalers, (18.75%). About 15.63 per cent FPCs sell their produce to district market (managed and controlled by local physical markets). Still some FPCs sell their produce to Village level (local) market (12.50%) and very few FPCs (9.38%) are involved in selling their produce out of the State markets. However, it was observed that many FPCs are facing problems in managing and streamlining their forward linkages including financial management of the business transactions.

4.2 During COVID-19 and resultant Lockdown

Table 4 : Activities undertaken by FPCs during COVID-19 and Lockdown

Sl. No.	Activities undertaken by FPCs during COVID-19	Frequency (Percentage)
1	Awareness creation about COVID-19	12 (37.50)
2	Distribution of mask and sanitizer	6 (18.75)
3	Aggregation of produce and direct marketing	20 (62.50)
4	Distribution of fruits and veggies to CORONA warriors	4 (12.50)
5	PM Jan Dhan money and cooking gas distribution	3 (9.38)
6	Distribution of fruits and veggies to marginalized and poor people	12 (37.50)
(Multiple responses were made available for respondents)		
(Source : Primary Survey)		

Activities undertaken by FPCs during COVID-19 are presented in Table 4. Major activities undertaken by FPCs during COVID-19 were the 'Aggregation of produce and direct marketing (62.50%) followed by 'awareness creation about COVID-19' (37.50%) and 'distribution of fruits and vegetables to marginalized and poor people (37.50%)'. Many FPCs not just distributed masks and sanitizers (18.75%) in their respective working

areas but also made a masks with the support from women oriented Self-Help Groups (SHGs). FPCs also distributed the fruits and vegetables to Corona Warriors (12.50%) to combat the ill effects of the virus. Few FPCs (5.2 %) acted as intermediaries by helping the district administration distribute cooking gas and transferring cash benefits under PM Jan Dhan Yojana (9.38%) bank accounts.

Table 5 : Agencies involved in facilitating provision of essential services during State and Nation-wide lockdown

Sl. No.	Name of Agencies	Frequency (Percentage)
1	District Agricultural Officer (DAO)	4 (12.50)
2	Agricultural Technology Management Agency (ATMA)	9 (28.13)
3	Maharashtra State Agricultural Marketing Board (MSAMB)	7 (21.87)
4	Maharashtra Cooperative Development Corporation (MCDC)	1 (3.12)
5	Other FPCs members	4 (12.50)
6	Promoting Institutions/ NGOs	7 (21.88)

(Source : Primary Survey)

The developmental agencies which supported the work of FPCs in direct marketing during COVID-19 are presented in Table 5. The district level agency i.e. Agricultural Technology Management Agency (ATMA) provided information related to direct marketing to the FPCs (28.13%) followed by Maharashtra State Agricultural Marketing Board (MSAMB) and local NGO's/ promoting institutions (21.88%). The District Agricultural Officer (DAO) and other FPCs members both take equal responsibility i.e. 12.50 per cent in spreading the information related to direct marketing.

Table 6: Working pattern during Lock down

Sl. No.	Working Pattern	Frequency (Percentage)
1	Daily	14 (43.75)
2	Weekly	2 (6.25)
3	Alternate day	5 (15.63)
4	Twice a week	3 (9.38)
5	Stop working during lockdown	8 (25.00)

(Source : Primary Survey)

Table 6 highlights the working pattern of FPCs during lockdown. Most of the FPCs preferred working daily (43.75%) even during the lockdown period followed by alternate day working (15.63%) and twice a week working (9.38%). About 25 % of FPCs couldn't work during lockdown because of anxiety and fear of COVID-19 on one side and lack of internal management on the other.

Lack of labor and equipment's availability disrupted harvesting operations and also brought warehouse operations to a virtual standstill. Regulated markets where farmers sell produce were intermittently closed and village traders and merchants did not show up to make purchases. Our survey of 32 FPC representative farmers found that among those who had harvested some produce of Rabi season, 40 per cent were still holding on to it; 10 per cent had sold the harvests at throwaway prices and about 6 per cent reported that they had to let the produce go waste.

Table 7: Supply-Chain during COVID-19 and Lockdown

Sl. No.	Name of Markets	Frequency (Percentage)
1	Village level market	5 (15.63)
2	Taluka level market	5 (15.63)
3	District market (APMC)	3 (9.38)
4	Stop working during lockdown	8 (25.00)
5	Direct marketing to consumers	11 (34.38)
	(a) Consumer societies in Pune	9 (81.81)
	(b) Consumer societies in Mumbai	5 (45.45)
	(c) Consumer societies in Navi Mumbai	6 (54.55)
	(d) Consumer societies in respective districts	8 (72.73)

(Source : Primary Survey)

Markets where FPCs sold their produce during lockdown are presented in Table 7. It was found that during lockdown 34.38 per cent of FPCs sold their produce directly to the consumers particularly the consumer societies in cities like Pune (81.81%), Mumbai (45.45%), Navi Mumbai (54.55%) and consumer societies in their respective cities (72.73%). The findings are in consonance with Ranadive (2018), where he found that many FPCs explored the direct marketing during COVID-19 and suggested that this trend of direct marketing will exist forever, subjected to FPCs adherence to quality and timely delivery.

In addition the table also highlights that 15.63 per cent of FPCs were selling their produce through village level and Taluka level markets followed by 3.17 per cent who went to local physical markets (mandis) as and when it was open. About 25.00 per cent of FPCs stopped their marketing and other company activities due to fear of COVID-19. It has been observed that consumers preferred to purchase fruit and grocery items directly from FPCs over hawkers or other retailing chains during lockdown. The findings are in agreement with Nikam and Kale (2020) and Paganini et al., (2020), where it was shown that during COVID-19 and lockdown, the farmers worked hard to develop a direct supply chain.

During COVID-19 situation, many consumers were afraid to go out and purchase fruits and vegetables. FPCs took advantage of this situation and tried reaching customers directly through online channels by using safe packaging material. With the extension of lockdown, these enterprises tried to find innovative ways to reach consumers, went mostly online to tap consumers and directly sell their fruit and vegetable produce to housing societies. They focused on convenient and customized packaging of fresh produce depending upon the consumer needs by maintaining hygiene factor and using sanitized vehicle for safe delivery of products. These agri ventures also identified all best possible routes for door-to-door delivery and deployed loading autos and handcart vegetable sellers to cover thousands and lakhs of households. They appointed nodal officers to overlook the working of the system, packaging of foods & quality checks. Before COVID-19, the FPCs sold their produce directly to consumers through weekly farmers' market which was held at a local place and which was easily accessible to consumers. However, many new marketing models emerged during and post the lockdown period (Ramakrishnan, 2020).

Table 8 : Licensing for Direct Marketing during Lockdown

Particulars	1	2	3	4
Agencies issued license for direct marketing of Commodities				
Name of	Taluka Agricultural	District Agricultural	Maharashtra State	Online Pass
Agencies	Officer (TAO)	Officer (DAO)	Agricultural Marke- ting Board (MSAMB)	
No.	6	11	7	8
Percentage	18.75	34.38	21.88	25.00
Agencies issued license for Transporting Commodities				
Name of	Regional Transport	Online Pass	Police Commissioner	Transporting
Agencies	Office (RTO)			Company
No.	6	11	5	10
Percentage	18.75	34.38	15.63	31.25

(Source : Primary Survey)

Agencies which issued license for direct marketing and transporting commodities during lockdown are presented in Table 8. Amongst all, the District Agriculture Officer (DAO) issued license for direct marketing to the interested FPCs (34.38%). Some of them also had an online pass (25.00%) through State governments' application, which was found to be very convenient during lockdown. This was followed by Maharashtra State Agricultural Marketing Board (MSAMB) (21.88%) and Taluka Agriculture Officer (TAO) (8.75%) who also issued licenses for direct marketing. Some FPCs approached the RTO (18.75%) and few of them were permitted by police commissioner (15.63%) to facilitate movement of goods by giving proper licenses for movement during and immediately after the lockdown

Table 9 : Challenges faced during COVID-19 and Lockdown

Sl. No.	Challenges	Frequency (Percentage)
1	Getting Transport permission	8 (25.00)
2	Stoppage of vehicles at multiple check points	15 (46.88)
3	Availability of labour on time for harvesting of Rabi crops	14 (43.75)
4	Higher transportation and labour cost	10 (31.25)
5	Commodity prices has gone down	10 (31.25)
6	Wastage of agro-produce due to lack of demand and labour	29 (90.63)

Note : Multiple responses were made available to the respondents
(Source : Primary Survey)

Challenges faced during COVID19 and lockdown is described in Table 9. During harvesting of rabi crops and its marketing, FPC member faced three major issues as the wastage of agro-produce due to disruption in the supply chain (90.63%), lack of availability of labour for harvesting, loading/unloading and for primary processing, un-availability of inputs for processing of commodities and irregularities in consumer behaviour. , The vehicles transporting agro produce were stopped at multiple checkpoints (46.88%) and about 25.00 per cent farmers could not get transport permission. In addition to this, most of the FPCs faced problem in harvesting and transportation of produce because of non-availability of labour on time for harvesting of Rabi crops (43.75%) and higher transportation and labour cost (31.25%). Many FPCs (31.25%) also highlighted that commodity prices have gone down.

It was also observed that there is difference between the consumers and producers' prices. The overall decline in demand, especially in cities due to closure of hotels, restaurants, and catering services and in part because of the large exodus of migrants—has flowed upstream, leading to a substantial fall in producer prices. At the same time, consumer food prices have risen, because of disruption in the supply chain, limited availability of labour and higher transport costs. This gap between wholesale and retail prices increased sharply during the first phase of the lockdown (March and April 2020) and remains wide.

It has derailed harvest preparation due to lack of agricultural labour and disruption in the transportation of produce. Moreover, farmers who have just harvested crops or about to harvest (especially perishable crops) are most vulnerable due to supply chain disruption. Farmers had to discard tonnes of produce and many left several quintals of crop and fruit to rot.

Table 10: Functional Challenges faced by FPCs

Sl. No.	Challenges	Mean Score	Rank
1	Getting bank credit	57.54	I
2	Financial management and record keeping	55.30	II
3	Lack of farm-gate infrastructure at FPC's level	55.07	III
4	Difficulty in performing online tasks	53.26	IV
5	Participation of members in business activities	51.79	V
6	Increasing membership base	50.65	VI

(Source : Primary Survey)

Functional challenges faced by FPCs are presented in Table 10. The member farmers either have bad credit or existing debt or do not have anything to mortgage due to which majority of FPCs reported that getting bank credit was very difficult. In addition to this, they stated that in general bank officials are reluctant to finance FPCs and in fact most of them reported that the Bank officials were not aware of this concept and its functioning. Further, FPCs also reported the lack of availability of infrastructure (mean score 55.07) to prevent the wastage of agro produce. Almost all respondents stated that '*Development of Agri-Logistics*', is a need of primary processing to create facilities closer to the farm gates to develop the value-chains.

The FPCs are also facing difficulty in record-keeping and documentation of activities (mean score 55.30) which also includes regulatory and statutory compliances. This was followed by difficulty in performing online tasks (53.26 per cent) i.e. online trading, payments and advertisement of products and services, etc. The active participation of members in business activities (mean score 51.79) and increasing membership base (mean score 50.65 per cent) was also a key concern for these enterprises.

It is proposed by the authors that the approach used in forming and promoting such enterprises can create a big difference in the sustainability of the Company. In most of the cases, the FPCs were formed on target driven mode through policy push programmes. The potential of these enterprising models remains unrealized as it needs strong collective action, sense of belongingness with the enterprise, good governance practices and more stable management systems. It was also observed that while most of these enterprises had intricate understanding of local and regional context and could immediately respond to the crisis, they lacked clarity on governance and management. The authors recommend that there is a strong need to evolve a departmental structure whereby *each member farmer may be entrusted with different responsibilities like production, procurement, marketing, advertising & digital marketing, processing and so on. Headed and guided by Board of Directors, this would build necessary responsiveness in decision making and inculcating a sense of belongingness and ownership among member farmers.*

The FPCs representatives have also suggested that ‘*direct finance to FPCs*’ is need of the hour, especially working capital loan. As of now, many financial institutions are hesitant to give credit to these ventures which may limit their pace of work and innovation. Although loan processing by NBFCs is fast, interest rates are typically high as compared to the commercial banking system. So there is a greater need to support the movement by sensitizing external stakeholders like banks and financial institutions as their role is equally important in addressing the present crisis. Further, it is also suggested that these social enterprises can be considered as Micro, Small and Medium Enterprises (MSMEs) by inclusion of FPCs in the definition of MSME. This can additionally open up new avenues for farmer entrepreneurs for raising capital to carry out business operations.

Table 11: Training and Capacity Building of FPCs Post COVID-19

Training Programme Attended						
Sl. No.	1	2	3	4	5	6
Topics	Not attended	FPCs Organization and Management	Export-Import & Marketing of Commodities	Procurement and Processing of Commodities	Sericulture	Hi-tech Floriculture
Frequency Percentage	8 25.00	18 56.25	2 6.25	2 6.25	1 3.13	1 3.13
Training Institutions						

Name of the Institute	Not Attended	NGOs	State Agricultural Universities (SAU's)	ATMA	National Agricultural Bank for Rural Development (NABARD)	National Institutes
Frequency	8	3	3	10	3	5
Percentage	25.00	9.38	9.38	31.25	9.38	15.63
Requirement of Training and Capacity Building						
Topics of Training	Online Trading	FPC Organization and Management	Export-Import and with Traceability	Post-harvest Management	Advertising & Digital Marketing of Commodities	Processing of Commodities
Frequency	5	9	4	4	7	3
Percentage	15.63	28.13	12.50	12.50	21.88	9.38

(Source: Primary Survey)

Post COVID-19, the training and capacity building requirements of FPCs are presented in Table 11. Over the period of time various capacity building initiatives were undertaken by Institutions such as ATMA (31.25%), NGOs (9.38%), State Agricultural Universities (SAU's) (9.38%), National Agricultural Bank for Rural Development (NABARD) (9.38%) and national institutes (15.63%) for member farmers of FPCs. ATMA does not only provide training but also helps with direct marketing and establishment of NGOs at the district level. These institutions have organized programmes mainly on the 'FPC organization & management' (56.25%), Export-import & marketing of commodities (6.25%), Procurement & processing of commodities (6.25%), Sericulture (3.13%) and Hi-tech Floriculture (3.13%).

Table 11 also indicates that these FPCs are still in need of the 'FPC organization & management (28.13%) training programme, particularly on how to run and manage day-to-day business affairs of the company followed by the 'advertising and digital marketing of commodities' (21.88%), online trading (15.63%), Export-import with traceability of products & services (12.50%), Post-harvest management of commodities (12.50%), and Processing of commodities (9.38%).

However, the field level observations on modus operandi of such initiatives, pointed that such activities were executed with strong handholding support by promoting institutions. Operating such businesses in these times require high level of responsiveness which are usually being achieved by bypassing various processes that were set to strengthen FPCs governance capabilities. Board of Director's meetings and their involvement are usually lacking in most of these

activities and thereby weakening of the institution and ownership of the community over their FPCs. There is need to promote design principles which can strengthen governance framework of FPCs while providing necessary responsiveness in the business activities as well.

5. Conclusion

The COVID-19 pandemic has disrupted the existing supply chain in agriculture and food system in many developing countries including India. The outbreak has generated extreme vulnerabilities for rural communities, especially in agriculture and farming space. In the initial phases, India imposed a three-week long lockdown starting from March 25th, 2020, which affected almost every activity of agriculture and created huge socio-economic impacts on Farmers' Producer Companies (FPCs), which is an emergent form of social enterprise, restive on the principles of collective action, ownership and belongingness. Amidst a paradigm shift from agriculture to agribusiness, India has been promoting the FPC model of agripreneurship in a mission mode to relieve farm distress. The emergent role of these community owned enterprises has assumed greater importance in the widespread COVID – 19 crisis. Further this can also be transformed into a great opportunity for Indian farmers, particularly the social enterprises like farmers' producer companies, agri-tech startups, and budding entrepreneurs. The innovative model of FPCs has showcased how social capital blends with appropriate and innovative technology to solve problems across the value chain ranging from production to harvesting to procurement, processing and distributing to ultimate consumers. During COVID-19 and resultant lockdown, the existing marketing system and/or supply chain of agri and allied commodities were dismantled by some inefficiencies such as poor access to marketing channels, inadequate transportation, improper storage, handling and processing, post-harvest losses and information asymmetry.

The FPCs are evolving with time and have a great potential to bring back the rural economy on track. Before COVID-19 they were involved mainly in input business followed by aggregation of produce and collective marketing. However, during COVID-19, they played very crucial role with the support of State level administration, local administration, enabling agencies and promoting institutions. In the process FPCs realized the importance of direct marketing, thereby viewing the farmer as an entrepreneur and not merely a producer. It has also brought about a change in the mindset of consumers as they are better aware about local ventures like FPCs who could serve their needs. The FPC model has a great potential in fostering agripreneurship in the rural space and strengthening domestic agri value chains by reducing dependency on imports.

Amidst these unprecedented times, strong entrepreneurial approach is required to restore back economic activity in agriculture. The government has already created a good ecosystem of social enterprises by encouraging agripreneurship through FPCs. This should be harnessed in order to spur up local food chains and reduce dependency on global food supplies. There is a far greater opportunity to evolve a series of process innovation by connecting directly with consumers and clearing the middle men. The resilience showcased by FPCs as strong social enterprises is a testimony to the fact that agripreneurship is a powerful model for battling the COVID 19 socio-economic crisis. However, it is crucial to explore what skills FPCs have in dealing with a crisis like this, and how can they build resilience to tackle the outbreak effectively.

Acknowledgement

We convey our heartfelt gratitude to all the respondents who have spared their valuable time to discuss their issues, challenges and dovetail the role played by them during these unprecedented times brought by COVID-19.

References :

- Asia. (Available at: <https://www.aesanetwork.org/abhinav-farmers-club-india/>)
- DAC&FW (2018). Agricultural Statistics at a Glance 2018. Department of Agriculture, Cooperation & Farmers Welfare, Directorate of Economics and Statistics, Ministry of Agriculture & Farmers Welfare, Government of India, New Delhi.
- Economic Survey (2019-20). Department of Economic Affairs, Ministry of Finance, Government of India, Economic Division, North Block, New Delhi-110001.
- Gogoi, H. (2020). A review on lockdown due to COVID-19 and its impact on rural economy based on small tea gardens in Tingkhong, Dibrugarh district, Assam, *International Journal of Creative Research Thoughts (IJCRT)*. 8(6): 3587-3593.
- Hanashima, M.; Tomobe, K. (2012). Urbanization, industrialization, and mortality in modern Japan: A spatio-temporal perspective. *Annals of GIS* 18(1): 57-70
- Hwa, E.C., 1988. "The contribution of agriculture to economic growth: some empirical evidence." *World Development* 16 (11): 1329-1339.
- Ivanov, D. (2020). Predicting the impacts of epidemic outbreaks on global supply chains: a simulation based analysis on the coronavirus outbreak (COVID-19/SARS-CoV-2) case. *Transp. Res. Part E*. 136:101922.

- Laborde, D. (2020). International Food Policy Research Institute Food Export Restrictions during the Covid-19 crisis.
- Lai, L. (2020). COVID-19: India's Harvests also Locked Down. Inter Press Service News Agency April 24 2020. <http://www.ipsnews.net/2020/04/covid-19-indias-harvests-also-locked/>.
- Mahapatra, S. K. (2020). Smartphone Apps for Agri-information dissemination during Covid19 lockdown. *Research Today*, 2(5): 116-119.
- McArthur, J. W., & McCord, G. C. (2017). Fertilizing growth: Agricultural inputs and their effects in economic development. *Journal of development economics*, 127, 133–152. <https://doi.org/10.1016/j.jdeveco.2017.02.007>
- Morton J. (2020). On the susceptibility and vulnerability of agricultural value chains to COVID-19. *World development*, 136, 105132. <https://doi.org/10.1016/j.worlddev.2020.105132>
- Narayanan, S. and Saha, S. (2020). Urban food markets and the lockdown in India. Working paper (WP-2020-017), Indira Gandhi Institute of Development Research, Mumbai. Retrieved from <http://www.igidr.ac.in/pdf/publication/WP-2020-017.pdf>
- Nikam, V. and Kale, R. (2020). Unshackling farmer producer organization from the COVID – 19 lockdowns, Agriculture extension in South Asia. Blog 110: April 2020. (Retrieved from: https://www.researchgate.net/publication/340600072_UNSHACKLING_FARMER_PRODUCER_ORGANISATIONS_FROM_THE_COVID_-_19_LOCKDOWN)
- Paganini, N., Adinata, K., Buthelezi, N., Harris, D., Lemke, S., Luis, A., Koppelin, J., Karriem, A., Ncube, F., Nervi Aguirre, E., Ramba, T., Raimundo, I., Sulejmanovic, N., Swanby, H., Tevera, D., Stöber, S. (2020). Growing and Eating Food during the COVID-19 Pandemic: Farmers' Perspectives on Local Food System Resilience to Shocks in Southern Africa and Indonesia. *Sustainability* 2020, 12, 8556. (Retrieved from: <https://www.mdpi.com/2071-1050/12/20/8556/htm>).
- Ramakrishnan, T. (2020). Lockdown brings out best in farmers producer's organizations in Tamil Nadu. April 19, 2020. (Retrieved from: <https://www.thehindu.com/news/national/tamil-nadu/lockdown-brings-out-the-best-in-farmers-producers-organisations-in-tamil-nadu/article31380528.ece>)
- Ramakumar, R. (2020) Farmers are at their wit's end, *The Hindu*, April 7, 2020.

- Ranadiva, S. (2018). Abhinav farmers club, India AESA face to face. Agriculture extension in South Asia. Retrieved from: <https://www.aesanetwork.org/abhinav-farmers-club-india/>
- Rawal, Vikas and Kumar, Ankit (2020). Agricultural Supply Chains during the COVID-19 Lockdown: A Study of Market Arrivals of Seven Key Food Commodities in India, SSER Monograph 20/1, Society for Social and Economic Research.
- Timmer, C. Peter, 1992. Agriculture and Economic Development Revisited. In: Teng, Paul, Penning de Vries, Frits (Eds.), Special Issue of Agricultural Systems, vol. 40. Elsevier Science Publishers, England, pp. 21–58.
- Torero M. Without food, there can be no exit from the pandemic. Countries must join forces to avert a global food crisis from COVID-19. Nature. 2020;580:588–589. doi: 10.1038/d41586-020-01181
- Ranadive S. 2018. Abhinav Farmers’ Club, India. AESA Face to face. Agriculture Extension in South Asia. (Available at: <https://www.aesanetwork.org/abhinav-farmers-club-india/>)
- Ranadive S. 2018. Abhinav Farmers’ Club, India. AESA Face to face. Agriculture Extension in South Asia. (Available at: <https://www.aesanetwork.org/abhinav-farmers-club-india/>)
- Ranadive S. 2018. Abhinav Farmers’ Club, India. AESA Face to face. Agriculture Extension in South Asia. (Available at: <https://www.aesanetwork.org/abhinav-farmers-club-india/>)

- ⁱ FPCs is one of the forms of producers collectives formed by primary producers, voluntarily coming together to enhance and expand their livelihood opportunities. This form of collectives gets registered under the Indian Companies Act 1956 as amended in 2002 and 2013.
- ⁱⁱ NAFED - National Agricultural Cooperative Marketing Federation of India was set up in 1958 “with the object to promote Co-operative marketing of Agricultural Produce to benefit the farmers. Agricultural farmers are the main members of Nafed, who have the authority to say in the form of members of the General Body in the working of Nafed.” Retrieved from <http://www.nafed-india.com/>
- ⁱⁱⁱ MAHA-FPC is a state Level Producer Company (SLPC) which is federation of farmer producer companies registered under the Company Act 1956, and was established in the year 2014 in the state of Maharashtra. “It is only multi-

commodity growers, for profit making association registered under the Company Act. The MAHA-FPC is working directly with Farmer producer companies to help mitigate the difficulty of farmers through Institutional Development services, capacity building services, system and process integration, technical training dissemination, financial intermediation, Market linkage development, policy advocacy and facilitating social security and economic development.”

- iv ATMA is a society of key stakeholders involved in agricultural activities for sustainable agricultural development in a district.
- v The Maharashtra State Agricultural Marketing Board (MSAMB), was established in Pune in the year 1984 under section 39A of Maharashtra Agricultural Produce Marketing (Development & Regulation) Act, 1963. “MSAMB has done pioneering work in the field of Agricultural Marketing in the State and achieved success in various areas. MSAMB is having an important role in developing and coordinating agricultural marketing system in the State of Maharashtra”. Retrieved from <https://www.msambp.com/>
- vi Maharashtra Cooperative Development Corporation Limited was “incorporated under Companies Act, 1956 by the State Government in year 2000. It is registered and head quartered in Pune and incorporated as NBFC under the loan company class category.” Retrieved from <http://www.mahamcdc.com/index.html>

