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A glimpse on farmer producer organizations: Retrospects and prospects

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Abstract

In India, small and marginal holdings constituted 86.08% with 46.94% of operational area according to Agriculture Census 2015-16 as against the corresponding figure of 85.01% with 44.58% operational area in 2010-11. Farmer Producer Organizations (FPO) can help farmers tackle productivity problems resulting from small farm sizes and encourage collective farming. These are also one means of entrepreneurial options in shifting from traditional to commercial agriculture. In recent years, there has been an increase in support for the establishment of FPOs though various institutions. However, the present problem is to make the FPOs long-term sustainable, viable, and successful. With this back ground, the present review paper attempts to delineate the role of FPOs with respect to technical support, market access and the empowerment of small and marginal farmers in India. It focusses on evolution, institutionalization and status of the Central Sector Scheme (CSS) for formation and promotion of 10,000 FPOs. This study insights into the region wise analysis of number of FPOs promoted by implementing agencies in India. The paper intends to analyze the impact created by FPOs at grass root level, convergence with KVKs, transformation into Farmer Producer Companies (FPCs) and challenges faced. As the FPO has been the way forward for entrepreneurship, future strategies for scaling up of FPO promotion by various stakeholders should focus on intense capacity building, forging linkages with the ecosystem, large scale impact assessment of FPOs, branding, replication of successful models, continuous monitoring and visibility promotion through social network platforms.

Keywords: Central sector scheme, entrepreneurship, FPO, impact, NABARD, SFAC

Introduction

India emerged as the top most population billionaire (1.429 billion) surpassed China (1.426 billion) according to World population prospects of 2023. The projections from the United Nations (2023) [55] revealed that, this trend is further expected to reach 1.67 billion in India and 1.31 billion in China by 2050. This growing population creates inequity between food supply and demand as it creates a gap which widens over the years. In order to feed this rapidly

expanding population, Indian farmers should start thinking like entrepreneurs and engage in commercial farming for long-term growth. This shift from traditional to commercial farming is the subject of current government programs as well. To achieve this, a greater focus on value addition is necessary as commercial farming is mostly focused on secondary agriculture. As this requires a more holistic approach, Farmer Producer Organizations (FPOs) can act as entrepreneurial vehicles, enabling farmers to collectively

thrive and contribute to feeding India's growing population. The Producer Organisation (PO) is a legal entity formed by primary producers, viz., farmers, milk producers, fishermen, rural artisans, weavers and craftsmen. One kind of producer organization in which farmers are members is the Farmer Producer Organization and the primary goal is to increase income and surplus for its members and producers (NABARD 2015). By creating an FPO, primary producers can benefit from the aggregation process and take advantage of economies of scale due to increased negotiating power while obtaining inputs and selling their produce. Department of Agriculture and Farmers Welfare (DA&FW), GoI, has defined, FPO registered under the special provisions of the Companies Act, 1956 are the best institutional structures for organizing farmers strengthening their ability to use their combined production and marketing power. FPOs are regarded to be one of the most effective intervention strategies to improve the situation of Indian farmers particularly small and marginal land holding groups (Ranjit Kumar et al. 2022) [38]. These are innovative institutions for small farmers upliftment and maintain effective backward and forward linkages according to Nikam. FPOs provides a platform for members to exchange knowledge, coordinate actions and reach decisions as a group and save transaction costs (Paty et al. 2018) [30]. The objective of the present review paper is an attempt to understand the status of FPOs, impact on empowerment, reasons for slow pace and relevance of these grass root institutions in entrepreneurship. The data is collected from secondary sources viz., NABARD, SFAC, MoA&FW, PIB websites and policy papers published in the last ten years.

Current research on FPOs and gaps identified

As FPOs became buzz word, researchers, implementing agencies, academicians, policy makers attempted various studies on FPOs. Based on the existing literature, some instances are mentioned. In the comprehensive literature review conducted by Nikam et al. (2024) [27], most of the published papers on FPOs were general articles (20%) and case studies (14%). It was followed by impact studies (12%), performance analysis (10%), perception/attitude measurement (7%), constraint analysis (6%), market & value chain analysis (6%), report & review (6%), determinant studies (2%) and others (17%). NABARD (2021) [21] rigorously attempted various case study analysis of FPOs in which 20 case studies from 14 different states around the nation, were assessed on different parameters viz., amount of procurement, amount of business from sale of consumables, service fee earned, marketing costs, net savings etc. SFAC (2019) [45] made critical analysis on its interventions like providing custom hiring centres, volume supply of commodities, e-Nam platforms etc. Determinants of performance and sustainability were reported by Kumar et al. (2023) [12] and systematic studies conducted by Jayashree et al. (2023) [8] on analyzing constraints in functioning of FPOs by members. In the study conducted by Ranjit Kumar et al. (2022) [38], current status of FPOs and policy ecosystem towards promotion of FPOs were highlighted. Systematic compilation on Directory of FPOs of India were attempted by Mathur (2021) [13]. Status papers reported by Toillier (2015) [5] of Global Forum for Rural Advisory Services (GFRAS) indicated the role of FPOs fitting in rural advisory services and agricultural innovation systems. Similar studies were attempted by different researchers in this direction.

Based on review conducted on FPOs, there are certain gaps identified. According to Singh et al. (2023) [47], there is a huge gap in the role of FPOs in tapping the potential of agriculture through skill development, secondary establishment of processing units, value addition, organic products, certification etc. Very limited studies conducted on organizational capacity, multi-stake holder decision making pattern, awareness on e-NAM services, periodical performance assessment etc. As small and marginal farmers continue to lose the battle in the market and exploited by intermediaries, numerous studies have investigated the overall role that FPOs play in ensuring the welfare of small and marginal farmers in the country in recent years. The present review paper sheds light on various aspects related to farmer producer organizations on the existing literature of secondary data from implementing agencies, organizations, research institutes, policy making bodies and academicians. The paper is organized into different sections viz., FPOs evolution, institutionalization, status of FPOs in India, Central Sector Scheme (CSS) for formation and promotion of 10,000 FPOs, highlights the best practices of FPOs across the country and their impact. The paper also listed major challenges faced by members and suggestions were made to strengthen FPOs and to bring prosperity to the last mile connectivity in the country.

Evolution and institutionalization of FPOs

In the past, cooperatives were formed by farmers to address some of the issues arising due to collectivization and aggregation of inputs. These cooperatives are formed in various two or three tier structures and differ from state to state. The primary goals of these cooperatives were to give their farmer members easy access to loans and/or inputs like seeds and fertilizer. Gradually, cooperative marketing societies developed in the due course of time. Although cooperatives have been quite successful in Gujarat (milk) and Maharashtra (sugar), their performance in most other states has been lackluster, and farmer collectives have been entangled in local politics and undue state interventions. Infrastructure creation is another major challenge faced by members due to lack of capital. These societies are susceptible to shifts in the external support system since they frequently depend on outside organizations and government schemes for financial assistance. According to the study conducted on state-wise success and failure analysis showed that, among the cooperative marketing societies in India, majority of members (47%) were engaged in social service activities followed by productive enterprises (25%), agricultural credit activities (13%), nonagricultural credit activities (14%) and only meagre 0.63 per cent in marketing activities. Although farmers are involved in agricultural marketing, their involvement is typically unfocused, which has resulted in the collapse of cooperatives. Then, following the recommendations of the Alagh Committee in 1999, which was set up with a mandate to frame a legislation that would 'accommodate the spirit of a cooperative with the operational flexibility,' Farmer Producer Companies (FPCs) have emerged as an alternative

to state-sponsored or state-led cooperatives.

In India, farmer organizations currently operate under different legal structures, including Producer Companies under the Companies Act of 2013, Cooperative Societies Act of 2013, Non-Profit Entity under the Companies Act of 2013, and Trusts under the Indian Trusts Act of 1882. In 2002, the Companies Act of 1956 was amended and a new section 'Part IXA' was added for 'Producer Companies', a new form of corporate entity (Ranjit Kumar et al. 2022) [38]. The initial concept of producer companies was introduced in 2002 based on mutual assistance and patronage. Guidelines for the expansion of FPOs were developed in 2013 through the Small Farmers Agribusiness Consortium (SFAC), Ministry of Agriculture, GoI (Prasad 2019) [33]. To popularize the concept of FPOs, Ministry of Agriculture, GoI declared 2014 as "Year of Farmer Producer Organizations (FPOs)" (SFAC 2014) [44]. Numerous FPOs have been fostered nationwide since 2014 through NABARD-managed Producers' Organization Development and Upliftment Corpus (PRODUCE Fund INR 200 crore). Other programs and organizations, such the World Banksupported Rural Livelihood Missions and state-specific laws in addition to donor and corporate social responsibility funds provided driving force to this initiative. In 2017, the idea of uniform "National Policy Framework for FPOs" was formulated by Ministry of Agriculture, GoI. In 2020, the major mile stone was formation of Central Sector Scheme (CSS) for Formation and Promotion of 10,000 FPOs.

Central Sector Scheme (CSS) for formation and promotion of 10,000 FPOs

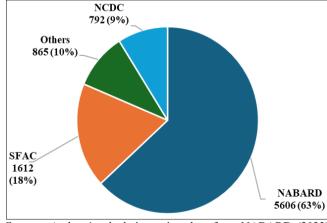
As a result of the PRODUCE Fund FPOs success of NABARD, the Central Sector Scheme for "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" was introduced by the Indian government in 2020, with a total budgetary outlay of Rs. 6865 crores. With a greater emphasis on farmer-producer organizations, the Indian government sought creative solutions for the collectivization of producers to improve system efficiency and effectiveness. After the introduction of the central sector scheme for promotion of 10,000 FPOs in the country, the wheels got geared up further. This initiative helped farmers in bargaining, take advantage of economies of scale, lower production costs and increase their income by collectivizing their agricultural produce. Financial support up to Rs. 18.00 lakh per FPO for a period of three years is being given to FPOs under the initiative. To guarantee institutional credit accessibility to FPOs, provisions have also been made for matching equity grants up to Rs. 2,000/farmer member of the FPO, with a cap of Rs. 15.00 lakh per FPO, and a credit guarantee facility up to Rs. 2 crore of project loan per FPO from qualified lending institutions. In addition, CBBOs receive Rs. 25 lakhs for managing each FPO for a duration of five years.

The Ministry of Agriculture and Farmers' Welfare has identified that there are 14 Implementing Agencies (IAs) under the scheme *viz.*, Small Farmers' Agri-Business Consortium (SFAC), National Bank for Agriculture and Rural Development (NABARD), National Cooperative Development Corporation (NCDC), National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) etc. for formation and promotion of FPOs either under

Companies Act or Co-operative Societies Act of the concerned States. Among them, mainly three Implementing Agencies, viz., SFAC, NABARD and NCDC shall be responsible to form and promote FPOs. In addition, the majority of state agriculture departments showed a strong interest in coordinating their programs with the help of FPOs. Besides, agriculture departments of most of the states also took keen interest in aligning their schemes through FPOs. The agriculture and allied departments are encouraging in FPOs formation. Some of the FPOs are selfpromoted by progressive rural youth or NGOs. Many State Agricultural Universities (SAUs) and some ICAR institutes are also mobilizing the farmers for FPO formation through their Krishi Vigan Kendras (KVKs). Registered non-profit bodies like National Association for Farmer Producer Organisations (NAFPO) also supports institutional development and business stabilization for Farmer Producer Organizations in India. It reflects the interests of small and marginal farmers and attempts to strengthen FPOs for farmer success.

Status of FPOs in India

The main supporting agencies of farmer producer organizations are NABARD, SFAC and NCDC. The FPOs formed by SFAC are incorporated under Part IX A of the Companies Act. Those FPOs formed and promoted by NCDC are under any Cooperative Societies Act of the States. NABARD form and promote those FPOs which are registered either under Part IX A of the Companies Act or registered under any Co-operative Societies Act of States). As per draft National policy on FPOs reports of Ministry of Agriculture and Farmers Welfare, GoI, there are more than 31000 FPOs existing in the country including active and inactive both. As the support under Central Government's central sector scheme of Formation and Promotion of 10,000 FPOs is till 2027-28, the total number of FPOs registered across the country was 8875 under 10000 FPOs' scheme as on 30.06.2024 (MoA&FW 2024) [14]. The total number of FPOs registered under different organizations under 10000 FPOs' scheme in India is given below in figure

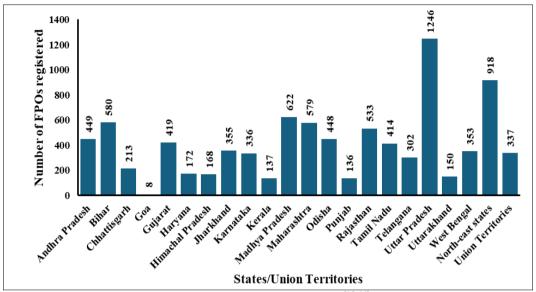


Source: Authors' calculation using data from NABARD (2023) [17]; SFAC (2023) [46]; MoC (2023) [16], MoA&FW (2024) [14]
Data accessed on 4 August 2024

Fig 1: Total Number of Registered FPOs under 10,000 FPOs scheme in India

Till date, NABARD supported 5606 FPOs contributing to lion share (63%). It is followed by SFAC with 1612 number of FPOs (18%) and NCDC 792 FPOs (9%). Other implementing agencies include NAFED, state governments, NGOs, trusts, foundations and other organizations (10%).

The distribution of these total 8875 FPOs under 10000 FPOs' scheme across states is depicted in figure 2. A large number of FPOs registered in Uttar Pradesh (1246), Northeast states (918), Madhya Pradesh (622) and Bihar (580).



Source: Authors' calculation using data from MoA&FW (2022, 2024) [15, 14], Data accessed on 4 August 2024

Fig 2: State-wise number of FPOs under 10000 FPO scheme registered in India

Region wise FPOs (10000 FPO scheme) supported by Implementing Agencies

Disparate number of registered FPOs across regions and states was noticed based on the secondary data available. It is quite understandable from the below mentioned Table 1 that NABARD is taking the lead in the southern region (31%) of the country. The share of different states in number of FPOs registered in southern region are Tamil Nadu (416), Andhra Pradesh (410), Karnataka (384), Telangana (377) and Kerala (173).

However, it is interesting to observe that SFAC intensified efforts in Central region (29%), in which the number of

FPOs in this region states are Uttar Pradesh (240), Madhya Pradesh (187) and Chhattisgarh (44). Similarly, NCDC role is majorly witnessed in southern part (25%) of the country and the number of FPOs in this region states are Andhra Pradesh (67), Tamil Nadu (49), Karnataka (34), Telangana (31) and Kerala (16). Union Territories are lagging behind the number of FPOs registered. Although, North-east states account for 918 FPOs and second position in the total number of FPOs (figure 2), there are less registered FPOs from NABARD, SFAC, and NCDC in these areas, and other implementing agencies may take their place.

Table 1: Number of FPOs at Region level

Region	Number of Farmer Producer Organizations supported			
	NABARD	SFAC	NCDC	
Northern	719 (13%)	310 (19%)	117 (15%)	
Southern	1760 (31%)	211 (13%)	197 (25%)	
Western	748 (13%)	222 (14%)	75 (9%)	
Eastern	1222 (22%)	262 (16%)	138 (17%)	
Central	850 (15%)	471 (29%)	125 (16%)	
North-east	236 (4%)	100 (6%)	90 (11%)	
Union Territories	71 (1%)	36 (2%)	50 (6%)	
Total	5606	1612	792	

Source: Authors estimation using data from NABARD (2023) ^[23] FPOs as on 31 March 2023; SFAC (2023) ^[47] as on 31 January 2023; NCDC (2023) ^[25] as on 19 December 2023; Figures in parenthesis indicate per cent share

Based on the increasing number of FPOs registration through CSS scheme, Farmer Producer Companies (FPCs), are emerging to cater to the needs of farmers at the grass root level. Farmer Producer Company (FPC), registered under Companies Act, is emerging as the most effective means of Farmer Producer Organization (Paty *et al.* 2018) [30]

Farmer Producer Companies (FPCs)

A Producer Company is essentially a corporate body that has been registered as a private limited company under Part IX-A of the Companies Act 1956, now 2013 (as amended in 2002). The Companies Act of 2002 was amended based on the Y. K. Alagh Committee's recommendations to give cooperatives more corporate clout in order to enable efficient management and good governance. When a Farmer Producer Organization is formed and registered as a company, it is known as Farmer Producer Company or FPC. The primary goal of FPC's establishment is not just to assist

in not just to double farmers' revenue but also to instill fundamental economic concepts in farming. In essence, the FPC model leverages common interest groups as the fundamental building block for aggregate, without any restrictions on the number of members or the extent of the operational region. There were 15,948 registered Farmer Producer Companies (FPCs) in India as on March 31, 2021, according to Neti *et al.* (2022) [26]. The year wise registered number of FPCs of the total 15,948 FPCs, is given below in figure 3.

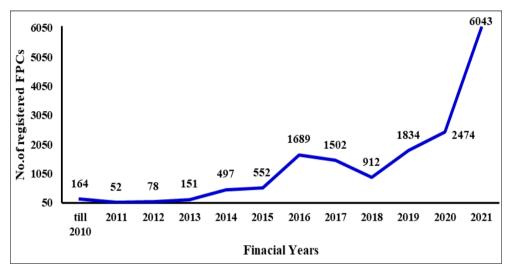


Fig 3: Number of registered FPCs in India

Impact of Farmer Producer Organizations or Empowerment

Small family farms account for 85% of all farms worldwide, and the people who live on them comprise majority are rural poor. Literature probe into impact created by successful FPOs in case studies of World showed that membership of these rural poor in various FPO groups created bigger impact across regions. Research studies conducted by experts on FPOs in India indicated that FPO membership have a positive and significant impact on net returns, return on investment and profit margin (Subha Laxmi et al. 2023 and Rajiv et al. 2023) [50, 37]. Subhashree et al. (2021) [52] stressed that adoption of modern infrastructure, improved technology, timely input availability, institutionalized credit, and direct market access without the need for middlemen were all crucial success factors for Udaipur Agro Producer Company Limited, Rajasthan. Improving small and marginal farmers bargaining power lowers their barrier to enter into markets according to Kherallah et al. (2002) [11] and Thorp et al. (2005) [53]. The membership holding decreased frequent visits to banks (16%) less reliance on unofficial sources (4%) and lowered (20%) working capital constraints (Verma et al. 2019, 2020) [57, 56]. Few studies on heterogeneity analysis indicates that FPO participation benefits comparatively larger farms and households headed

by women more. FPOs significantly lessen the need for middlemen, (Fafchamps *et al.* 2005) [4] empower farmers, advance social and gender inclusion, and strengthen ties between smallholders and engage in markets in a more efficient manner (Stockbridge *et al.* 2003a) [49]. Few inspiring success stories of farmer producer organizations in India highlight the positive impact of FPOs on farmers' livelihoods, market access and overall well-being.

Dharani FPO based in Anantapur district, Andhra Pradesh transformed the lives of smallholder farmers by obtaining machinery, seeds, and fertilizers jointly, lowering input costs, increasing production, and creating a market connection for organic produce, which raised farmer prices (Sarika 2019) [40]. Kisan Mitra FPO, Uttar Pradesh uses social media platforms to support farmers. The success of Sahaja Samrudha, an organic FPO in Karnataka is based on fostering customer trust and providing farmers with fair prices though facilitating direct transactions between farmers and urban consumers. Through the establishment of cooperative dairy farms Madmaheshwar Valley Association FPO, Uttarakhand achieved social and economic empowerment of women. Table 2 provides the quantitative impact change achieved through farmer producer organizations in different commodities.

Table 2: Farmer Producer Organizations and Impact

State (Name of FPO)	No. of farmers surveyed	Product	Major Impact
			Individual FPO members' net annual income grew from Rs. 20,000 to Rs. 45,000.
Chhattisgarh (Harit Kranti Adivasi Co-operative Society)	803	Chillies	The expertise convergence needed to stabilize the FPO's operations: 5. namely, the departments of horticulture, KVK, agriculture, MGNAREGA, and CREDA
Jharkhand (Amrapali Phalsabji Utpadak Producer Company Ltd)	515	Fruits and Vegetables	FPO's yearly sales revenue from a variety of services (5% growth) Ten percent of retail sales are made at the district and block level markets.
Telanagana (Suraksha Farmer Producer Company Ltd	525	Paddy	The amount of money received (in Rs.) from the selling of rice to members: Rs 3,300 to Rs 61,825 FPO members receive a commission of 10% above their sale price
Tamil Nadu (Ramanar Millets Farmer Producer Company Limited)	2943	Millets	5%–20% of savings by lowering the cost of certain services Due to farm gate procurement, there was only 5% waste
Maharashtra (Devnadi Valley Agricultural Producer Company Ltd.)	837	Agricultural & NTFP Products	Increase in net annual income to individual members of FPO Rs 50000- 1akh/annum 30% increase in annual revenues from sale of various services by FPO
Odisha (Jaivik SRI Farmers Producer Company Ltd.)	551	Agricultural & NTFP Products	Block-level seed banks are accessible, where seeds are purchased and supplied. Social empowerment: As a result of the advantages they have received from being members of the Company, the farmers have grown in mutual trust and cooperation.
Madhya Pradesh (Maa Machna Crop Producer Company Ltd.)	1160	Agricultural & NTFP Products	FPO revenue generating established custom recruiting services that amount to Rs. 12,400 per month. In the village, FPO's social service initiatives established reputation and confidence.
Kerala (Panachery Farmers Producer Company Limited)	148	Banana (fruits), & Vegetables	Total Annual Turnover is very high (in Rs.) 23,000,000 Community Seed Bank established
AP (Pragati Yuva Kendram PCL)	1028	Flowers, Vegetables, fruits, & various services	Infrastructure built: pump sets controlled by a mobile phone, solar-powered insect light traps, and portable cold storage Ninety percent of farmer members use an integrated sustainable farming system
West Bengal (Tarashankar Panchagram Producer Company Ltd.)	1000	Vegetables & cereals, Grocery retailing, & Agri- Inputs	FPO serves household consumers through its five retail locations. About 10% of its sales go toward midday meal supply, while 90% of its sales go to the retail sector. Offering over forty different types of vegetables, cereals, pulses, fragrant rice, bananas, and fish, its business basket is diverse and includes a sizable amount of groceries
Sikkim (Organic FPC)	280	Spices	Higher annual net returns Rs. 7,254–8,133, higher ROI 4.6–4.8% and Profit margin 8–8.4%
Bihar (Rural Livelihoods Promotion Society – JEEVIKA)	274	Paddy	Crop management technologies adoption 78% Safety chemical application 16% Integrated Pest Management practices11% Water management measures 7.7.% Improved post-harvest techniques 2.9%
Maharastra (Vanashree Farmer Producer Company Ltd)	300	Pulses	Skill development 43.33% Better bargaining for small holders 41.5% Record keeping by the grower 39% Opening of new markets 37% Income stability due to assured price 38.17% Initiation of growers welfare fund 36.67%

Sources: NABARD (2021); Verma et al. (2019) [57] and Gummagolmath et al. (2021) [6]

In the context of international successful models, FPOs are playing versatile roles in pooling small farmers, improved bargaining power, gain access to technical assistance, credit, marketing the produce to obtain fair prices. AgriPro Focus is an international network of several countries that encourages cooperation and knowledge exchange between

various agricultural sector stakeholders, such as enterprises, governments, NGOs, and farmer producer organizations. The network enables smallholders to learn, grow their businesses, and get access to markets and financing. Few successful models at global level are mentioned in Table 3.

Table 3: Successful International FPO models

Country	Name of FPO	Key activities	
Brazil	CAFPFR (Cooperativa dos Agricultores Familiares de Poco	Value addition; and members social and economic	
Drazii	Fundo e Regiao)	development	
C	SOPACDI (Solidarite Paysanne pour la Promotion des Actions	Connecting coffee farmers to specific markets to gain access	
Congo	Café et Development Integral)	to international buyers	
Costa Rica	COOCAFE (Cooperativa Cafetalera de Tarrazu)	Sustainable practices and environment friendly production	
Mali	UCOSECAM (Union des Cooperatives du Secteur Cotonnier	Duo cossing and montrating	
Maii	au Mali)	Processing and marketing	
Ethiopia	HARENNA (name of forest region)	Organic and shade-grown farming techniques	

KVKs integration with FPOs

Review studies revealed that in certain FPOs, Krishi Vigyan Kendras (KVKs) are also crucial in fostering farmers' enthusiasm and expertise by providing technological support. NCDC has roped in ICAR's institutes and KVKs in 116 blocks for formation and promotion of Farmer Producer Organisations (FPOs) in the country under a central scheme for 10000 FPOs (NCDC, 2021) [25]. There are few KVKs collaborating with FPOs and involved in their activities. ICAR-CTRI, KVK at Kalavacharla, Andhra Pradesh formed two FPOs and providing technical knowledge, interaction meetings with experts, online linkage of FPOs to the eprocurement sites etc. Hiregoudar (2021) [7] stated that ICAR-K.H. PATIL KVK, Hulkoti, Gadag district of Karnataka developed business plans for FPOs and involved in arranging melas and exhibitions, and facilitating with other organizations connections to infrastructure, marketing assistance, and incentives. According to Raghav et al. (2022) [35], KVK, Ramgarh, Jharkhand showed initiative by creating WhatsApp groups to FPO groups. Deals and supply were made in accordance with phone calls, produce videos, and the amount and quality of the product. Due to the direct linkage and value addition of produce, the farmers received an additional 15-25% in price. Both consumers and farmers, producers, and suppliers benefit from this scenario. KVK, Kodagu, Karnataka established retail outlets, ongoing training programs for its members, exposure visits and support for aspiring farmers to steer them toward uniform, scientific agricultural methods.

It is evident that Farmer Producer Organizations (FPOs) with the linkage of different institutions including grass root level KVKs offer small farmers comprehensive services and support, encompassing marketing, technical help, growing inputs, processing etc. Any policy intervention will have some problems or consequences in addition to its advantages, which will aid in determining the difference between the desired and actual states. In this context, a few issues that farmers encountered when conducting business with FPOs were brought up and listed based on different studies conducted by researchers.

Reasons for Slow Pace of FPOs Scaling Up

Farmer producer organizations play a crucial role in empowering small farmers and enhancing their market participation; however, they also encounter constraints. A constraint is anything, whether internal or external, that stops an organization from progressing or that inhibits it from reaching its objective. Various studies categorized constraints into different groups and the major bottlenecks mentioned in most research reviews were inadequate

funding, inappropriate government pricing policies, farmer mobilization, ignorance of credit options, lack of connections to financial institutions and inadequate market intelligence.

Personal constraints

success and long-term viability of farmers' organizations depend on the active participation of farmers at all levels and on their voluntary involvement willingness in group activities. According to Subhashree et al. (2020) [51], divergent opinions during group meetings (Mean rank = 7.50) was the main impediment, preventing members from coming to an agreement and causing conflict over the choice of activity. The other problems faced by group members are lack of co-operation and teamwork among group members, in effective group leadership, lack of training in group unequal delegation of work. formation. mismanagement and discontinuance of internal lending. Jayashree et al. (2023) [8] examined various personal obstacles of FPOs. The members lack of initiative (Rank Based Quotient (RBQ) Score 83.83) is primarily caused by their ignorance of the FPO roles, which is followed by their increased workload (RBQ 70.33), lack of time (RBQ 63.33), lack of cooperation (RBQ 53.67), lack of support from their families (RBQ 45.17), and lack of interest in attending meetings (RBQ score of 41.17). According to Jitendra Kumar et al. (2021) [9], lack of computer literacy (RBQ 70), prevents them from taking advantage of the Information and Communication Technology (ICT) tools that are accessible. Other challenges include a lack of technical expertise, conflicting interests, inadequate training, and limited leadership rotation (Nikam et al. 2019) [28].

Operational constraints

FPOs face operational constraints as the majority are still in the early stages of growth and development, SFAC (2019) [45] reports showed that 20 per cent of the FPOs are still fighting for survival, and at most 30 per cent of them are currently running profitably. About half are still in the stages of business planning, equity gathering, mobilization, and other developmental phases connected to management. Each FPO has a single promoting agency as well as its own resource institution. Due to their respective problems with employee turnover, fewer farmers are being mobilized into FPOs, which is a result of their difficulties in forming FPOs. Because fewer farmers are being mobilized, FPOs' share capital is lower than anticipated, which causes a number of additional issues. In their study (Chopade et al. 2019) [2] on challenges faced by FPOs respondents stated that no cooperation as local leaders were not included as members (72.86%), lack of coordination for various group activities

(60.28%) and lack of support from the government department for the organizations (55.00%).

Resource constraints

Systematic study conducted by Verma *et al.* (2020) ^[56] summarized that the board of members faced several major challenges, including the length of time it took to obtain licenses for inputs with a weighted mean score of 3 (WMS), the dealership for fertilizer being expensive (WMS, 2.82); paying for inputs in advance cash (WMS, 2.62); an unexpected spike in demand for inputs at the start of the monsoon (WMS, 1.91); and a lack of ownership by the members (WMS, 1.88). According to Subhashree *et al.* (2020) ^[51], no license at appropriate time and lack of literature are the severe hindrances.

Financial constraints

Economic grants and the ability to obtain quick loans have always been essential to an organization's success as reported by Subhashree et al. (2021) [52]. But lack of collateral and credit history prevents FPOs from accessing credit facilities, which is one of their main current challenges. External dependencies often affect the financing and support as the FPOs frequently rely on outside organizations, government programs, or non-governmental organizations for monetary assistance. FPOs are susceptible to price fluctuations of their products, which can affect their net income and profitability. According to Nithya et al. (2022) [29] major constraints related to finance were not able to raise funds from farmers (Mean Value 0.82); cumbersome process of registration by FPOs (MV 0.77) followed by no waiving of license fee and problem with obtaining bank loan with values 0.73 and 0.60 respectively.

Organizational constraints

The identification and documentation of FPOs is a challenging task as it requires a more methodical evaluation than conventional methods. There are many promoting agencies of FPOs in the country. NABARD has the largest percentage share of all FPOs promoted, followed by other organizations, trusts, and foundations *viz.*, Bill & Melinda Gates Foundation, TATA Trust, Ambuja Cement Foundation, HDFC Foundation, Reliance Foundation, C&A Foundation, HSBC CSR, Axis Bank Foundation, Jindal Steel &Power Ltd. and Syngenta foundation (27%). SFAC is third highest contribution, State Governments have a low share, and National Rural Livelihood Mission, which is supported by the Ministry of Rural Development, comes in last (Rajesh Kumar *et al.* 2020) [36].

Infrastructural constraints

A lot of FPOs focus mostly on primary agriculture, losing out on chances for processing and value addition. Bottlenecks in the infrastructure are another obstacle facing FPOs. It is challenging to advance in the agricultural value chain and access markets in the lack of transportation and storage facilities. The basic infrastructure needed for aggregation such as transportation, storage, value addition (cleaning, grading, sorting, etc.) and processing, brand development, and marketing is not sufficiently accessible to the producers' collectives (NABARD 2018 and 2020). Studies conducted by Priyanka *et al.* (2022) [34] reported that

lack of well-developed and storage facilities (10%), lack of proper infrastructure *viz.*, training hall, electricity etc., (9%) are the challenges. Subhashree *et al.* (2021) ^[52] reported that the present number of godowns should be raised to 6-7 fold to store all of the produce without experiencing any quality losses. The existing storage buildings lacked hermetically sealed airtight construction, therefore redesigning of prevailing ones is also necessary to prolong the product's quality.

Marketing constraints

These challenges refer to factors that hinder the organization's ability to achieve its marketing goals. Attaining certification for their produce and meeting quality requirements can be a difficult and expensive process, particularly for small and resource-constrained FPOs. The FPO members encountered various marketing constraints (Tiwari et al. 2021) [54], including lower produce prices (Mean percent Score (MPS) 87.5), distant markets (MPS 84.5), lack of up-to-date market information (MPS 82.7), high transportation costs (MPS 63.96), perishable product nature (MPS 22.17), delayed payment (MPS 16.88), and middleman exploitation (MPS 14.58). Inadequate promotional activities due to lack of proper packaging infrastructure, lack of computers and poor internal communication system are the weakness of the FPOs (Nikam et al. 2019) [28]. According to research by Navaneetham *et al.* (2019) [24] on the analysis of hindrances for FPOs in Tamil Nadu to enhance their performance. capturing the market for selling the produce with a value of 0.93 was the biggest bottleneck. According to Singh et al. (2023) [48] heavy competition with the products existing in the market ranked as the foremost constraint with an average mean score of 97.37 followed by distant market and high transportation cost (96.56), diverse needs of individual members' (77.37) were the major constraints encountered by the FPO members.

Relevance of FPOs in Entrepreneurship

Entrepreneurial FPOs are the pathways for commercial success of the farmer groups Farmer Producer Organizations can bring about vertical integration in the conventionally fragmented supply chains with business plans (Paty et al. 2018) [30]. Although the concepts of FPO and entrepreneurship are distinct, there are a number of subtle connections between them. An FPO must possess entrepreneurial qualities in order to endure, prosper, and expand into a profitable business venture (Jose et al. 2023) [10]. Numerous studies have examined the effectiveness of input based working Farmer Producer Organizations in various agricultural and allied sectors till date. Nonetheless, there is still a sizable research vacuum when it comes to evaluating the efficacy of FPOs functioning in secondary agriculture at various phases of growth in commercial mode. Saumyesh $et\ al.\ (2023)^{[41,\ 42]}$ mentioned that Farmer Organizations Producer act as lighthouses entrepreneurial revolution in the agriculture sector. It creates an excellent platform in winning accurate decisions to transform their farm enterprises in an institutionalized manner. Sankar et al. (2024) [39] highlighted that farmer producer organisations are the emerging means for making benefits of value addition through branding of farm produce.

Branding also helps in accelerating entrepreneurial growth and business communication at the farmer's level. Value addition is an integral part of entrepreneurial growth and dynamics and this grassroot institutions paves the way to neo-institutional approach in business ecosystem of Indian agriculture. Thinking like an entrepreneur means looking for unmet needs and new opportunities in the mark*et all* the time. With this kind of thinking, FPOs can discover new markets for their goods, investigate new product categories, and even devise fresh approaches to working in tandem with other organizations to broaden their scope.

Although the extent to which Farmer Producer Organizations effectively facilitate the transition to entrepreneurship has not been extensively studied but a very

few studies in the literature have shown that successful FPOs have been working in the commercial mode. Entrepreneurial activities are the opening of new markets, the development of novel goods or services, and/or the innovation connected to various commercial endeavors. Table 4 highlighted different entrepreneurial activities taken up by different Farmer Producer Organizations were value addition, establishment of processing units, innovative packing, branding, opening of new market outlets, establishment of custom hiring centers for renting of farm equipments, record maintenance etc. This shows entrepreneurial traits like strong leadership qualities, commitment, highly self-motivated, innovativeness, risk taking and establishment of strong local networks.

Table 4: Successful case studies of collective action by FPOs in entrepreneurship mode

Name of FPO	Category	Entrepreneurial activities	No. of farmers benefitted
Akola Soy and Cotton Producer Company Limited., Maharashtra	Income enhancement through value addition in Tur	Processing machinery established (Dall mill) Value addition (edible oils are used to polish Tur).	336 farmers
Vrindavan Pushpa Utpadak Sangh, Maharashtra	Adopted floriculture as an alternative source of livelihood	Innovative packing (natural jute) New market outlet (common interest groups i.e village level collection centres	3,000 tribal families
Shri. Laxmi Rythu Vyaparkendram, Andhra Pradesh	Achieving economies of scale through establishment of Agri Business Centers	Collective marketing Custom hiring centres established	1,285 members
Warana Agriculture Commodities Consumer Super Market Cooperative, Maharashtra	Mini super market for rural consumers	Consumer cooperative store established Employment creation: Every year, a month-long salesman training programme is conducted at the centre. The top five students of every batch are absorbed by Warana Agriculture Commodities Consumer Super Market Cooperative	20,111 members
Nachalur Farmer Producer Company Limited, Tamil Nadu	Farmers are turned into traders	Input supply shop opened Information and Communication Technology platform: weather and commodity prices are sent	100 farmers
Koutla- B Mutually Aided Cooperative Society, Andhra Pradesh	Achieving sustainability through collective action of memebers	Backward-forward linkage established Village development funds were allocated by the villagers to FPO members due to establishment of credibility	100 farmers
Babpur Krishak Sangh, West Bengal	Leveraging the power of collective marketing	Own motorized vending cart purchased Direct selling method opted and opened retail outlets	500 farmers

Source: SFAC (2013) [43]

Prospects of Farmer Producer Organizations

The new draft National Policy of MoA&FW (2024) [14] on Farmer Producer Organizations (FPOs) recognized the necessity of combining already-existing FPOs, forming and promoting new FPOs. To achieve this there is a need to create a better ecosystem in which FPOs thrive gradually and sustainably to support profitable farming that is both vibrant and sustainable for farmers' overall well-being. The proposed guiding principles of this new policy are viewing FPO as agri enterprise unit/startup, market-oriented value addition, packaging, branding, simplifying bureaucratic processes, emulation of successful models etc. Several studies suggested recommendations for the effective functioning of FPOs. Important recommendations for policy execution were outlined by NABARD (2021, 2022) on the necessity for multi-functionality, autonomous governance, holistic development, ideal group size, satisfying credit demands, etc. Funding is required for FPOs to engage in capacity-building and infrastructure development projects (Ankit et al. 2023) [1]. Financial instruments are also necessary to draw investments and reduce risk. In order to

meet these needs, SFAC offers FPOs loan facilities and equity grants. In the strategy paper mentioned by SFAC (2019) [45] for promotion of 10,000 FPOs, it is crucial to develop the capacity and train the CEOs, managers, and BoDs of FPOs. Institutions may develop diploma and certificate programs for FPO members. Institutions that are involved, such as agricultural universities, entrepreneurship development centers, National Institute Of Agricultural Marketing (NIAM), The Bankers Institute of Rural Development (BIRD), National Institute of Food Technology Entrepreneurship and Management (NIFTEM), National Institute of Agricultural Extension Management (MANAGE), Vaikunth Mehta National Institute of Cooperative Management (VAMNICOM) etc., must institutionalize and develop these courses and accredit them with the Sector Skill Council. As reported by Subhashree et al. (2021) [52], it is imperative that FPOs must implement technical modifications to diversify their strategies and ensure the longevity of their product offerings. Products with the potential to add value should be investigated for marketing and export. Fruits and vegetables should be

grown organically, and the organizations should include them in their list of products. The Ministry of Agriculture and Farmers' Welfare, Government of India initiative where SFAC is the lead agency to establish a single national market for agricultural commodities is National Agriculture Market (eNAM), an electronic trading site. It links the current Agricultural Produce & Livestock Market Committee (APMC) mandis and onboarded 3366 FPOs on the e-NAM platform till date (DAC&FW 2024) [3]. Nearly 5,000 FPOs have registered on the Open Network for Digital Commerce (ONDC) site in order to sell their produce online to customers all across the nation (PIB, 2024) [32]. Capacity building programmes need to be intensified in this direction to encourage large number of FPOs to provide direct access to online payment processing, digital marketing, and business-to-business and business-toconsumer transactions.

Conclusion

The present review article outlined the overview of FPOs in India. To promote these organizations, the initiatives like national advisory committee, digitization of FPO data, development of performance measurement tool, holistic development through aspirational districts, finance schemes were already initiated separately by various implementing agencies. Several external players, including implementing agencies, educational institutions, charitable organizations, and financial institutions are involved in FPO promotion, therefore convergence approach is the need of the hour to fortify the FPO ecosystem. The precise number of FPOs operating in the nation is not clear as several databases provide inconsistent data. A single national database that aggregates information from all organizations should be maintained up to date to streamline this process, and policy suggestions should be based on this strictly. Though the existing database indicates sterling progress in the number of FPOs and has been growing over time, attention should be given to the number of FPOs that are currently operational, and which have created serious impact at grass root level. National level agencies must prioritize funding projects that examine the effects of Farmer Producer organizations on scale economies, supply chain integration, input supply, market information access, technology adoption, income, and profitability. The FPOs engaged in value addition and enterprise development need to be closely examined, since commercial agriculture is currently experiencing a boom. All the ICAR institutes and state agricultural universities should have FPO adoption scheme without any duplicate efforts by other organizations and for this nodal agency at national level should monitor for effective operation. These institutions should provide clear information on government initiatives for FPOs, assist in forging linkages with financial institutions, market players for commercialization, packing, branding and marketing strategies. The FPOs that succeeded should be recognized to encourage the achievements. Pooling of resources to establish custom hiring centres for the benefit of members as well as farm level infrastructure at the FPO level for the cleaning, grading, sorting, processing, branding, and transportation of agricultural commodities delivery/market centres. Under the Government of India's current initiatives, specific budget allotment may be set aside for this purpose every time. National level FPO melas should be conducted regularly to create a platform for access to the international market and for building public-private partnerships. Summing up, youth should be involved, and social media platforms can be best utilized to emulate the successful FPOs across the country to make FPOs flourish in commercial perspective which paves the way for entrepreneurship.

References

- Ankit M, Nikam V, Mrinmoy R, Girijesh Singh M. Farmer Producer Organization for Turmeric Growers in Tribal Region of Odisha: Success Factors and Constraints. Indian Res J Ext Educ. 2023;23(2):96-101.
- 2. Chopade SL, Kapse PS, Dhulgand VG. Constraints faced by the members of farmer producer company. Int J Curr Microbiol Appl Sci. 2019;8(8):2358-2361.
- 3. DAC&FW, MoA. Draft: National policy on Farmer Producer Organizations. [cited 2024 Jun 18]. Available from:
 - https://agriwelfare.gov.in/Documents/RecentInitiative/National_policy_onFPOs_18Jun2024.pdf
- Fafchamps M, Hill RV. Selling at the farmgate or traveling to market. Am J Agric Econ. 2005;87(3):717-734
- Toillier A, Chander M, Faure G, Some P, Havard M. The Role of Producer Organisations in Rural Advisory Services. Note 12. GFRAS Good Practice Notes for Extension and Advisory Services, pp 1-45. Lindau, Switzerland: A Global Forum for Rural Advisory Services publication; 2015.
- Gummagolmath KC, Ramya Lakshmi SB, Krushna K. Impact Assessment of Farmer Producer Companies (FPCs) in Maharashtra - A Case Study. Hyderabad: National Institute of Agricultural Extension Management (MANAGE) publication; 2021. p. 1-53.
- Hiregoudar LG. Impact of KVK's role in mobilizing farmers for group action and development. In: Advances in Agricultural Marketing and Value Chain Management. International Books & Periodical Supply Service; 2021. p. 199-207.
- 8. Jayashree A, Janaki Rani A, Karthikeyan C, Malarkodi M, Gangai Selvi R. Sustainability of Farmer Producer Organisations Major constraints in functioning of FPO in Tamil Nadu, India. Asian J Agric Ext Econ Sociol. 2023;41(9):861-868.
- 9. Jitendra Kumar C, Adhikary A, Pradhan K. Identification of constraints associated with Farmers' Producer Organisations (FPOs). Int J Curr Microbiol Appl Sci. 2021;10(1):1859-1864.
- 10. Jose AE, Jayalekshmi G, Ashish Homraj L, Rohit KD. Entrepreneurial Behaviour of Farmer Producer Organization Members: An Empirical Investigation. Asian J Agric Ext Econ Sociol. 2023;41(9):175-189.
- 11. Kherallah M, Delgado CL, Gabre Madhin EZ, Minot M, Johnson M. Reforming agricultural markets in Africa: achievements and challenges. Washington, DC: The International Food Policy Research Institute; 2002.
- 12. Kumar S, Kumar R, Meena PC, Kumar A. Determinants of Performance and Constraints faced by Farmer Producer Organizations (FPOs) in India. Indian J Ext Educ. 2023;59(2):1-5.

- 13. Mathur S. Directory of Farmer Producer Organizations of India. Jaipur: CCS National Institute of Agricultural Marketing; 2021. p. 1-165.
- 14. MoA&FW (Ministry of Agriculture & Farmers Welfare). 8875 Farmer Producer Organizations have been registered across the country. [cited 2024 Jun 30]. Available from: https://pib.gov.in/PressReleasePage.aspx?PRID=20408 45#:~:text=As%20on%2030.06.2024%2C%208875,FP Os%20is%20Rs.630.3%20Crore
- 15. MoA&FW (Ministry of Agriculture & Farmers Welfare). PIB (Press Information Bureau). National Conference of Cluster Based Business Organisations (CBBOs) under Central Sector Scheme of Formation and Promotion of 10,000 FPOs. [cited 2022]. Available from:
 - https://pib.gov.in/PressReleasePage.aspx?PRID=1818764
- MoC (Ministry of Co-operation). Farmer Producer Organizations in Cooperative Sector. [cited 2023]. Available from: https://pib.gov.in/PressReleseDetail.aspx?PRID=19883
- 17. NABARD (National Bank for Agriculture and Rural Development). Impact Evaluation Study (IES) 2020-21 of NABARD Promoted FPOs. Mumbai: NABARD publication; 2023. p. 1-108.
- 18. NABARD. Farmer Producer Organizations-Frequently Asked Questions. Mumbai: NABARD publication; 2015. p. 1-158.
- NABARD. Handbook on Maintenance of Accounts & Preparation of Financial Statements for Farmer Producer Organisations. Dehradun: National Bank for Agriculture and Rural Development publication; 2018. p. 1-75.
- 20. NABARD. Farmer Producers' Organizations (FPOs): Status, Issues & Suggested Policy Reforms. Mumbai: NABARD publication; 2020. p. 1-10.
- 21. NABARD. Case Studies of FPOs in India 2019-2021. Mumbai: NABARD publication; 2021. p. 1-391.
- 22. NABARD. Annual report (2021-22). Mumbai: NABARD publication; 2022. p. 1-140.
- 23. NABARD. Farmer Producers' Organisations supported by NABARD. [cited 2023 Mar 31]. Available from: https://www.nabard.org/auth/writereaddata/File/farmer-producers-organisations-supported-by-nabard-as-on-31-march-2023-fpo.pdf
- 24. Navaneetham B, Mahendran K, Sivakumar SD. Analysis of constraints for performance improvement of FPCs in Tamil Nadu. Int J Farm Sci. 2019;9(2):12-18.
- 25. NCDC. NCDC ropes in ICAR institutes and KVKs to set up FPOs. [cited 2023]. Available from: https://eng.ruralvoice.in/agribusiness/ncdc-ropes-in-icar-institutes-and-kvks-to-set-up-fpos.html
- 26. Neti A, Richa G. Farmer Producer Companies: Report II, Inclusion, Capitalisation and Incubation. Bangalore: Azim Premji University publication; 2022. p. 1-48.
- 27. Nikam V, Haripriya V, Kiran Kumara TM, Prem C. How Are Farmer Producer Organisations Functioning in India? An Empirical Evidence from a Mixed Methods Research Synthesis. Econ Polit Wkly.

- 2024;1(22):62-68.
- 28. Nikam V, Premlata S, Ashok A, Kumar S. Farmer producer organisations: Innovative institutions for upliftment of small farmers. Indian J Agric Sci. 2019;89(9):1383-92.
- 29. Nithya SD, Vaishnavi P. Challenges faced by Farmer Producer Organisations (FPOs) A Review. J Agric Ext Manag. 2022;23(1):131-140.
- 30. Paty BK, Gummagolmath KC. Farmer Producer Companies Issues and Challenges. Hyderabad: National Institute of Agricultural Extension Management publication; 2018. p. 1-36.
- 31. PIB (Press Information Bureau). Constitution of FPOs. Ministry of Agriculture & Farmers Welfare. [cited 2023]. Available from: https://www.pib.gov.in/PressReleasePage.aspx?PRID= 1942484
- 32. PIB (Press Information Bureau), MoA&FW. Government of India. Around 5,000 Farmer Producer Organizations (FPOs) registered on ONDC platform. [cited 2024]. Available from: https://pib.gov.in/Pressreleaseshare.aspx?PRID=201060
- 33. Prasad S. Farming as an Enterprise Ten Years of FPO Movement in India. State of India's Livelihoods Report. 2019;37-48.
- 34. Priyanka R, Jayasankar R. Constraints faced by the beneficiaries of Farmer Producer Organisations in Tamil Nadu (India). Bull Environ Pharmacol Life Sci. 2022;11(12):37-42.
- 35. Raghav DK, Anirban M, Yadav VK, Bikas D, Ujjwal K. FPO Based Market Linkage Model Through KVK: A Case of Ramgarh. In: Advances in Agricultural Marketing and Value Chain Management. International Books & Periodical Supply Service; 2022. p. 199-207.
- 36. Rajesh Kumar B, Shivani K. Challenges faced by FPOs and strategies to overcome: A Review. Int J Adv Agric Sci Technol. 2020;7(6):25-33.
- 37. Rajiv G, Manesh C, Rai R. Economic impact of Farmer Producer Organisation (FPO) membership: empirical evidence from India. Int J Soc Econ. 2023;51(8):1-12.
- 38. Ranjit Kumar, Sanjiv Kumar, Pundir RS, Surjit V, Srinivasa Rao Ch. FPOs in India: Creating Enabling Ecosystem for their Sustainability. Hyderabad: ICAR-National Academy of Agricultural Research Management publication; 2022. p. 1-22.
- 39. Sankar A, Saumyesh A, Tapan M. Farmer Producer Organization (FPO): The Neo-Institutional Revolution in Indian Farming. ISBN: 9789361342622. [cited 2024]. Available from: https://www.researchgate.net/publication/379987992_F
 - armer_Producer_Organization_FPO_The_Neo-Institutional_Revolution_in_Indian_Farming
- 40. Sarika S. Case study of Dharani Farmer Producer Organisation. Mahila Abhivuruddhi Society (APMAS). [cited 2019]. Available from: https://www.apmas.org/pdf/fpo-csaestudy-long.pdf
- 41. Saumyesh A, Sankar KA, Mandal T, Mohanty B. Farmer Producer Organisation (FPO): the lighthouse for entrepreneurial revolution in farm sector. Proceedings of the Second Indian Rice Congress. ICAR-NRRI,

- Cuttack, Odisha; 2023. p. 454-455.
- 42. Saumyesh A, Acharya SK, Mandal TK, Mohanty BK. Value generation through mobility and transshipment along the value chains: The Farmer Producer Organisation (FPO) reality and ecosystem. J Commun Mobil Sustain Dev. 2023;18(1):213-218.
- 43. SFAC. Krishi Sutra (Version 2) Success stories of Farmer Producer Organisations. New Delhi: SFAC publication; 2013. p. 1-100.
- 44. SFAC. Year of Farmer Producer Organizations. New Delhi: SFAC publication; 2014. p. 1-2.
- 45. SFAC. Strategy Paper for promotion of 10,000 Farmer Producer Organisations (FPOs). New Delhi: SFAC publication; 2019. p. 1-32.
- 46. SFAC. State wise details of Farmer Producer Organizations under Central Sector Scheme for Formation and Promotion of 10,000 Farmer Producer Organizations. [cited 2023 Jan 31]. Available from: https://sfacindia.com/UploadFile/Statistics/State% 20wi se% 20details% 20of% 20FPOs% 20under% 20Central% 2 0Sector% 20Scheme% 20for% 20Formation% 20and% 20 Promotion% 20of% 2010,000% 20FPOs% 20by% 20SFA C% 20as% 20on% 2031-01-2023.pdf
- 47. Singh M, Devinder T, Anil S, Rajesh KR. Constraints in Operationalizing FPOs in Punjab and Strategies to Mitigate Them. Agric Sci Dig. 2023;43(1):530-535.
- 48. Singh P, Shukla G, Shelar R. Exploring the role of Farmer Producer Organizations in unlocking the potential of secondary agriculture. New Era Agric Mag. 2023;2(2):63-66.
- 49. Stockbridge M, Dorward A, Kydd J. Farmer organizations for market access: a briefing paper. Wye Campus, Kent, England: Imperial College, London; 2003.
- 50. Subha Laxmi S, Sarbani D, Biswajit S. Impact of Farmer Producer Organization (FPOs) on Economic Empowerment of the Member Farmers. Indian Res J Ext Educ. 2023;22(2):59-64.
- 51. Subhashree S, Sharma JP, Burman RR, Reshma G. Constraint Analysis and Strategic Suggestions for Better Functioning of Farms Produce Promotion Society (FAPRO) in Hoshiarpur, Punjab. J Commun Mobil Sustain Dev. 2020;15(3):775-779.
- 52. Subhashree S, Sharma JP, Burman RR, Reshma G. Assessment of the Critical Success Factors and Sustainability of Udaipur Agro Producer Company Limited (UAPCL) of Rajasthan. Indian J Ext Educ. 2021;57(1):49-53.
- 53. Thorp R, Stewart F, Heyer A. When and how far is group formation a route out of chronic poverty? World Dev. 2005;33(6):907-920.
- 54. Tiwari N, Rajshree U. Constraints faced by the members of the farmer producer organizations in Udaipur district of Rajasthan. The Pharma Innovation J. 2021;10(12):320-324.
- 55. UN (United Nations). India overtakes China as the world's most populous country. World Population prospects. UN DESA Policy Brief No. 153. [cited 2023]. Available from: https://www.un.org/development/desa/pd/sites/www.un
 - https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/undesa_pd_2023_policy-brief-153.pdf

- 56. Verma A, Anil Kumar S, Shantanu D, Singh O, Doharey R, Vikas B. Constraints faced by board of members of farmer producer organizations. Indian J Ext Educ. 2020;56(3):75-78.
- 57. Verma S, Vinay K, Anjani K, Devesh R. Are farmer producer organizations a boon to farmers? the evidence from Bihar, India. Agric Econ Res Rev. 2019;32(1):123-137.