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Unlocking the Potential of Collective Action and Co-production: An Analysis of Farmer Producer Organisations in India

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Abstract

Farmer producer organisations (FPOs) are not new to the agricultural ecosystem of India with pronounced benefits of collective action to farmers with increased returns, reduced risk through better access to inputs, technology, and information. Complexities and challenges such as free riding, limited trust, and access to government support exist in the success of such collective efforts requiring adequate institutional support. In previous studies of agriculture development policies, an urban bias has been found to persist whereas in this case the government of India plays an active role in pursuing agricultural and rural development by adopting laws and policies that create an enabling environment for FPOs to thrive. Such a synergy between the government and farmers is important for co-production which is fostered by the presence of an FPO creating an important link between the two to address the challenges of co-production. This thesis examines the dynamics of collective action within FPOs in India through the analysis of two successful case studies, namely Sahyadri Farmers Producer Company Limited and Vasundhara Agri-Horti Producer Company Limited (VAPCOL). These case studies shed light on the effective interplay between state regulation and FPOs in fostering collective action and co-production for the advancement of agricultural development and farmer livelihoods. The analysis reveals the presence of a top-down nature of organisation for realising the benefits of collective action and does not find evidence of a bottom-up approach of farmers effectively organising themselves for collective efforts.

Keywords: Producer organisations, Collective action, Co-production, Institutional support, State Regulation

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List of Acronyms

CA	Collective Action
CBBO	Cluster Based Business Organisation
FAO	Food and Agriculture Organization
FPC	Farmer Producer Company
FPO	Farmer Producer Organisation
GOI	Government of India
KII	Key Informant Interview
MAFW	Ministry of Agriculture and Farmers' Welfare
MCA	Ministry of Corporate Affairs
NABARD	National Bank of Agriculture and Rural Development
NAFPO	National Association for Farmer Producer Organisations
SF	Sahyadri Farms
SFAC	Small Famers' Agribusiness Consortium
SHG	Self-Help Groups
VAPCOL	Vasundhara Agri-Horti Producer Company Limited

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1. Introduction

Agriculture and food production stands at a crucial juncture, at the nexus of escalating global demand and worsening threats posed by climate change. The agricultural sector plays a pivotal role in the economic development and food security of a nation. In India, where agriculture is a key source of livelihood for a significant portion of the population, initiatives such as farmer producer organisations (FPOs) have gained prominence with the Government of India creating an ambitious goal of promoting 10,000 FPOs by the year 2024 (Government of India, 2021). This is largely due to institutional and structural reforms which encourage the formation of FPOs such as availability of credit and other financial mechanisms, various subsidies, increased fertilizer production among others although this research is not concerned with these factors. Farmer producer organisations and farmer producer companies (FPCs)[1] are collective entities formed by farmers to collectively undertake agricultural production, marketing, and other related activities (Government of India, 2021). These organisations hold the potential to empower farmers, improve their market access, and enhance their bargaining power as a link between the farmers at the bottom and the government at the top of this chain of agricultural development. However, the successful functioning of FPOs is contingent upon effective collective action among their members, as well as the regulatory environment in which they operate.

Collective action is driven by the fundamental idea of the power of a group being greater than the power of an individual to actualise increased benefits. Farmer cooperatives is not a novel concept and has been around ever since people learnt the advantages of cooperation for increased returns with reduced efforts. Farmer cooperatives or farmer collectives have many advantages to the farmers that are involved as they can practice collective investment in the process of planting, harvesting, as well as marketing to receive increased returns, giving them a better livelihood (Kumar et al., 2015). Collectives enable the facilitation of access to information, skills, technology, financial resources and are beneficial for minimising risk as well as losses. When farmers come together in a group to promote and advocate their rights and needs, they hold a better chance of negotiation and have a higher bargaining power.

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[1] The term FPO and FPC will be used interchangeably in this thesis unless specified otherwise. The reason for the same will be explained in Chapter 1 where the I delve into the details of the structure of FPOs and FPCs and provide the context of their formation.

In this research, the aim is to explore the dynamics and intricacies of collective action (CA) and the role of state regulation within the context of Farmer Producer Organisations/Companies (FPO/Cs), focusing on two successful case studies: Sahyadri Farmers Producer Company Limited[2] and Vasundhara Agri-Horti Producer Company Limited (VAPCOL). Specifically, the study aims to understand how collective action functions to influence the performance of FPOs. Furthermore, it seeks to explore the top-down and bottom-up institutional mechanism in which state regulation and support mechanisms impact the collective action within such organisations to foster an environment of co-production between the private and the public. While comparing successful cases presents unique challenges in formulating a research puzzle, I begin by acknowledging the inherent difficulties in accomplishing effective collective action among farmers. Selecting two successful cases would enable us to analyse the presence of a top-down (through the work or initiative of leaders) or bottom-up (through farmers organising themselves for advocating their needs) approach has been a factor in their success and if this was realised through synergy between the FPOs and the government. Collective action in agriculture faces numerous obstacles, including but not limited to problems of free riding, and political obstructions.

The research puzzle arises from the observation that collective action can be inherently difficult to achieve, particularly in rural settings, where political complexities and informal institutions pose substantial hurdles. According to the theory of urban bias (Bezemer & Headey, 2008; Lipton, 2022), government support for agriculture has always been found to be minimal with urban areas receiving greater attention for development in developing and under-developed countries. Traditionally, free riding has been cited as a common obstacle to effective collective action (Naziri et al., 2014; Ochieng et al., 2018). Several studies on FPOs and collective action within FPOs have been conducted which analyse the financial performance of the FPOs to provide increasing returns to farmer as a result of collective action (Desai & Joshi, 2014; Govil et al., 2020; Kakati & Roy, 2021; Mukherjee et al., 2018; Neti et al., 2019; Vatta & Budhiraja, 2020), or FPOs with a specific crop in a state (Deka et al., 2020), or FPOs engaging in processes such as marketing, post-harvest management (BH et al., 2019; Naziri et al., 2014). Little (Trebbin & Hassler, 2012) to no research has been conducted on the fundamental nature of collective action and provision of state support among FPOs in India.

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[2] From here onwards, this will be addressed as Sahyadri Farms.

The main theoretical framework for this research mainly draws upon the concepts of collective action theory (Ayer, 1997; Markelova et al., 2009; Narrod et al., 2009; Ochieng et al., 2018; Orsi et al., 2017; Trebbin & Hassler, 2012). Concepts from the co-production theory of Ostrom (1996) and theory of informal institutions of Helmke & Levitsky (2004) also shape the theoretical understanding of this research and provide a strong foundation for conducting the comparative analysis. Ostrom's work was instrumental in understanding the challenges that governments and citizens face in their coordination although leaving a question as to how such a synergy is possible. Studying FPOs, which create a connection between these two types of actors, therefore acting as a middleman between the government and the farmers enables us to development our understanding of collective action using co-production.

Collective action theory provides a lens to understand the motivations, incentives, and challenges that influence farmers' participation in collective endeavours both from a top-down or formal institutional mechanism and a bottom-up or an informal institutional mechanism. On the other hand, the examination of state regulations allows for an assessment of the enabling or constraining role played by government policies in shaping the functioning and outcomes of FPOs. Additionally, the examination of co-production sheds light on the collaborative efforts between the government and farmers, recognizing the potential benefits and challenges inherent in the joint production of agricultural goods and services. Furthermore, an institutional analysis of formal and informal norms allows for an assessment of the role played by regulatory frameworks, policies, and social structures in influencing collective action among members of an FPO to shape its functioning and outcomes.

The research methodology employed for this study is qualitative in nature, relying on government documents and reports, previous research, FPO analysis and reports as secondary sources of data and key informant interviews as primary sources of data. Case studies were selected based on the availability of information, focusing on successful cases to serve as guiding examples for drawing conclusions about their experiences with collective action. Key informant interviews were conducted with agricultural and rural development professionals, policymakers, and representatives from FPOs to gather insights into the collective action dynamics, state regulations, and the experiences of FPO members.

Drawing upon theoretical perspectives and empirical evidence, this research aims to critically examine the dynamics of collective action and by exploring the role of the government in shaping the institutional environment, the study seeks to provide nuanced insights into the

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facilitators and barriers of successful collective action. The analysis will investigate the interplay between formal regulations, such as legal frameworks, and informal practices, including social capital, trust, and cooperation. The findings reveal that there is no urban-bias and state support is indeed present as an important factor in the success of the FPOs with minimal bottom-up efforts of cooperation among farmers. There exists a synergetic relationship between the government and FPOs to facilitate co-production.

In summary, this thesis situates itself within the overarching goal of the government's FPO promotion program and attempts to advance the scholarly discourse on co-production and collective action within producer organisations. The following section discusses the literature and theories to set the foundation for the designing the research methodology in Chapter 3. Chapter 4 lays the background and policy context for the findings (Chapter 5) following the discussion (Chapter 6) before drawing conclusions in the final chapter (Chapter 7).

2. Literature Review and Theoretical Framework

This section begins with the theoretical understanding of collective action in the context of farmer producer organisations. The concept of coproduction along with institutional analysis is utilised to develop the theoretical framework for this study. The chapter builds on these theoretical concepts with an aim to provide a comprehensive understanding of the theory for this research before diving in the policy context of India thereafter setting the stage for the analysis of collective action among the members of a producer organisation.

2.1. Collective Action

The formation of farmer producer organizations (FPOs) and farmer producer companies (FPCs) has gained significant attention in the agricultural landscape of India. These collective entities aim to empower smallholder farmers, enhance their market access, and promote inclusive agricultural development. Collective action within FPOs offers numerous advantages to farmers, such as reduced production and marketing costs, access to resources and information, risk mitigation, and increased bargaining power. The success of these collective initiatives is influenced by a complex interaction of social dynamics, institutional arrangements, and external support mechanisms. Understanding the dynamics of collective action within FPOs is crucial for devising effective strategies to enhance their functioning and promote sustainable agricultural development. In this chapter, we explore the contextual factors, institutional dynamics, and the role of government support in facilitating collective action within FPOs.

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Collective action has long been recognized as a powerful catalyst for agricultural development and rural transformation. When farmers come together to pool resources, knowledge, and efforts, they can overcome common challenges, leverage their collective strength, and create sustainable change. CA offers numerous benefits to smallholder farmers, placing them in a stronger position within agricultural markets. By pooling resources and efforts, smallholders can reduce transaction costs, gain access to necessary inputs and market information, adopt new technologies, and tap into high-value markets (Markelova et al., 2009). This enables them to compete more effectively with larger farmers and businesses. Additionally, collective action fills the gaps in terms of services, information, and resources in market systems. It facilitates capacity building, improves marketing strategies, and enhances access to markets that smallholders often struggle to reach, such as national or export markets (Markelova et al., 2009; Trebbin & Hassler, 2012; Vanni, 2014).

Farmer collectives offer a wide range of benefits that enhance the agricultural landscape and improve the livelihoods of farmers. These collectives enable cost savings in production and marketing activities, leading to increased profitability for farmers. By leveraging economies of scale, farmers can achieve efficiencies in their operations with increased access to valuable resources and support systems resulting in reduced costs. (NABARD, 2021 & Kumar et al., 2015). They facilitate the exchange of information, technology, and skills among members, promoting innovation, and knowledge-sharing. Access to information and training on good agricultural practices is another key advantage of FPOs. Through capacity-building initiatives, farmers gain valuable knowledge about modern farming techniques, new technology, sustainable practices, and market trends (SFAC, 2019) enhancing their productivity, quality of produce, and competitiveness in the market. Through collective action, farmers gain improved access to financial resources and funds, enabling them to invest in their farms and enhance productivity.

Within a farmer collective, small farmers have marketing networks and safety nets. Pooling their resources not only benefits them during the production phase but also extends to the post-harvest stage for the sale of their produce. One significant advantage is that a collective group has access to a larger market network, which includes a wide range of buyers such as retailers and wholesale distributors as well as physical markets catering to individual consumers. Individual farmers may not necessarily have this access or the resources to build this market base and so this expanded network increases their market reach and potential consumer base. In addition to enhanced marketing opportunities, collective action efforts also provide valuable

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safety nets to farmers, particularly during unfavourable situations. Through their collective efforts, farmers can access insurance programmes (*AIC OF INDIA LTD.*, n.d.; Mahul et al., 2012) that safeguard them against unforeseen risks and losses. Moreover, by collectively engaging in bulk buying practices, farmers can secure the cost advantages and negotiate better and fairer prices for their inputs, leading to greater profitability (SFAC, 2019). Another benefit is the possibility of establishing fixed contracts with market agents, ensuring a more predictable and stable market for their crops and other agricultural outputs. These contractual arrangements provide assurances of returns, reducing uncertainties and offering financial security to farmers (Vatta & Budhiraja, 2020). Lastly, farmer collectives provide access to institutional credit as they can facilitate easier access to financial services and credit facilities for their members (SFAC, 2019; Mukherjee et al., 2018; Vatta & Budhiraja, 2020). This enables farmers to invest in their farms, purchase necessary inputs, and expand their operations.

According to Narrod et al. (2009), the main focus of collective action studies has been to analyse the ways in which collective action has facilitated the success of small farmers in providing them access to more competitive markets and therefore provided safety in terms of their livelihoods. Government support plays a vital role in fostering the success of farmer collectives by creating a conducive policy environment and offering diverse forms of assistance. These collectives can leverage government programs, subsidies, and incentives to enhance their operational capabilities and overcome obstacles. The provision of such support contributes to the resilience of farmer collectives, enabling them to effectively address challenges and capitalize on emerging opportunities in the agricultural sector. One notable benefit of government support is the risk mitigation and price stability achieved through the collective action of farmers (NABARD, 2021). By adopting sound management practices and working collaboratively, farmer collectives can minimize post-harvest losses and reduce the shocks caused by volatility of prices (SFAC, 2019). This, in turn, ensures a more consistent and reliable supply of agricultural products, meeting the demands of both domestic and external markets.

Furthermore, the collective bargaining power of farmers within these groups is strengthened with government support. Empowered by their collective representation, farmers can negotiate more effectively with buyers, processors, and other market intermediaries which then enables them to secure fair prices for their produce and obtain favourable market outcomes, improving their economic prospects and livelihoods. The symbiotic relationship between farmer collectives and government support creates a mutually beneficial dynamic. The government's

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commitment to providing an enabling environment and targeted assistance reinforces the collective efforts of farmers, leading to a more sustainable and equitable agricultural system.

2.2. Co-production

Coproduction, characterized by collaborative efforts between the government and citizens, has gained prominence as a relevant framework across different domains. Collective action for the production of a good or service requires effective organisational coordination at different organisational levels. Ostrom (1996) in her article titled "Crossing the Great Divide" discussed three difficult challenges faced during the co-production of a service – (1) organisation of citizens i.e., social capital outside the government, (2) organisation of public agents i.e., social capital within the government, and (3) coordination between the citizens and the public agents. It acknowledges that the optimal production process can be achieved through the synergy of both entities, leveraging their respective strengths and resources (Ostrom, 1996). Conventionally, production involves organizing factors of production by a principal, such as an entrepreneur or bureau chief, to transform inputs into outputs. However, coproduction recognizes that joint efforts between the government and citizens can yield improved outcomes. Nevertheless, it is essential to consider that coproduction is not universally advantageous (Ostrom, 1996), and its effectiveness depends on specific conditions. By promoting collaboration, coproduction offers potential benefits in addressing complex challenges and improving production efficiency and outcomes.

The concept of complementarity emerges as a crucial prerequisite for coproduction to thrive (Evans, 1996). The effective collaboration between the government and farmers relies on the mutually reinforcing relationship between public and private actors, where the provision of public goods by the state complements the efforts of farmers in organizing themselves and pursuing collective action. This understanding emphasizes the importance of recognizing the interaction between government programs, social capital formation, and the complementary roles of the state and farmers in fostering successful collective action initiatives. By acknowledging and nurturing this complementarity, the potential for coproduction to yield sustainable and inclusive outcomes can be maximized. The government's agenda for agriculture and rural development is an important characteristic towards the provision of public goods in creating and nurturing this complementary. The equity-efficiency trade-off defined by Lipton (1977) in his book "Why poor people stay poor" states that the development agenda of less developed countries focuses on problems that are more 'urban' such as water, energy, sanitation with an uneven distribution of resources away from the rural creating an urban bias.

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More recent studies (Bezemer & Headey, 2008; Sechele, 2016) have found this theoretical understanding presented by Lipton (1997) to be persistent with higher resource allocation towards the urban areas creating a structural bias against rural areas in areas such as agricultural development. Government is perceived as having little interest in uplifting the rural areas and therefore provides minimal support for agricultural development.

The presence of government policies creating an enabling environment to cultivate agriculture therefore becomes significant for facilitating the development of entities such as producer organisations and farmer associations when examining the dynamics of farmer collective action. This perspective goes beyond the traditional analysis of public goods, recognizing that the provision of such goods not only supports the production of tangible goods, such as crops, but also enhances farmers' capacity and willingness to collaborate and work together (Ayer, 1997; Vanni, 2014). Farmers often require inputs that they cannot individually supply, making it necessary for them to organize collectively. In this context, the state plays a significant role by providing intangible collective goods, such as legal recognition of local farmers' groups. The state's involvement proves beneficial (Bezemer & Headey, 2008) as long as it avoids excessive intervention in the day-to-day operation of local irrigation systems (Evans, 1996), allowing farmers to maintain their autonomy and decision-making authority.

2.3. Institutions

In the context of this study, institutions are defined (Helmke & Levitsky, 2004; Polski & Ostrom, 2017) as widely understood rules, norms, or strategies that incentivize behaviour in repetitive situations. These institutions can take formal forms such as laws, policies, or procedures, or they can emerge informally as norms, standard operating procedures, or habits. Acting alone or in a set of related arrangements, institutions serve as mechanisms for coordinating behaviour among individuals or groups faced with situations requiring coordination. Simultaneously, an organization can be viewed (Polski & Ostrom, 2017) as a collection of institutional arrangements and participants who share common goals and purposes, interacting across multiple action situations at various levels of activity. Organizations emerge because of human efforts to establish order and reduce uncertainty in repetitive interactions.

Defining institutions and organisations is necessary to analyse collective action among the members of a farmer producer organisations. These institutions can take the form of formal regulations, policies, or informal norms that govern the functioning of farmer producer

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organizations (FPOs) because within such a group, several societal norms, values, and habits are present that influence the actions of its individual members eventually affecting the group. The study recognizes that FPOs are not solely organisational entities but are embedded within broader institutional frameworks that encompass both formal and informal rules and practices.

In the context of farmer producer organizations (FPOs), institutions play a critical role in shaping the behaviour and decision-making processes of its members. For instance, formal regulations and policies governing FPOs determine their legal status, governance structure, and operational requirements. The formal institution of registration requirements (SFAC, 2019; NABARD, 2019) for FPO and FPCs mandated by government authorities ensure that these entities comply with legal obligations, maintain proper documentation, and meet necessary standards of procedure (SOPs). This institutional framework provides a sense of legitimacy to FPOs, instils confidence among stakeholders, and facilitates their access to financial resources, government support, and market linkages. These institutional frameworks (SFAC, 2019) define the roles and responsibilities of FPO members, establish mechanisms for decision-making and resource allocation, and provide guidelines for accountability and transparency. Furthermore, informal norms and practices may evolve within FPOs, as members often share common regional, community, and cultural backgrounds, which fosters the development of shared values, mutual trust, and strong social interactions. These informal institutions create an environment where equitable participation, fair sharing of benefits, and collective decision-making become intrinsic expectations among FPO members (SFAC, 2019; Trebbin & Hassler, 2012) create a large influence on cooperative behaviour, collaboration, active engagement, collective problem-solving as well as the sense of collective ownership and responsibility among the FPO members.

The interplay between formal and informal institutions within FPOs creates a dynamic environment that shapes collective action. Understanding the role of institutions in facilitating or hindering collective action within FPOs is essential for devising effective strategies to enhance their functioning and promote sustainable agricultural development. By examining the interplay between institutions and collective action, this research seeks to shed light on how the institutional environment shapes the behaviour and decision-making processes of FPO members, influencing their capacity to collaborate, share resources, and collectively address challenges.

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Summing up, this chapter has provided an overview of collective action, institutional dynamics, and the role of government in fostering said collective action within producer organisations. The analysis highlights the significance of collective action as a catalyst for agricultural development and rural transformation. By gaining insights into the dynamics of collective action within FPOs and co-production, this research aims to provide a valuable analysis of the factors shaping the effectiveness and sustainability of collective action mechanisms and providing a thorough understanding of FPOs for researchers and policymakers to draw recommendations from, for promoting inclusive and sustainable agricultural development in India.

3. Research Design and Methodology

3.1. Building the Research Design

The research design and methodology employed in this study is crucial for capturing the multifaceted nature of farmer producer organisations and conducting a comprehensive comparative analysis of their operations, and outcomes. Leveraging a qualitative research approach, we can delve into the formal institutional framework and regulatory aspects of FPOs by analysing government documents, guidelines, and reports. Additionally, studying the organisational structure of the selected FPOs will provide insights into the formal and informal institutions that may or may not have influenced their success and gathering insights from experienced professionals will complement the findings of this study. The research methodology serves as a systematic framework for data collection, analysis, and interpretation, ensuring the robustness and rigor of the study. This section presents an overview of the research design, data collection methods, data analysis techniques, and ethical considerations associated with the chosen research methodology. Clarifying the connection between theory and analysis, and presenting a comprehensive methodological outline, will increase the relevance and meaning of the subsequent chapter's analysis, and strengthen the overall research findings.

I begin the analysis by investigating the process and requirements of registering a farmer producer organisation. As I will discuss in the next section[3], a farmer producer organisation can be registered as a collective, a cooperative society, or a registered company under the Indian Companies Act, 1956. The ability of formal institutional processes and requirements to prompt cooperation among the members of the organisation are important in defining the initial steps leading to the formation of the FPO. This can have an influence on internal organisational

[3] See Policy Context of India

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aspects as well as the operations and the objectives of the organisation. Thoroughly examining the legislative requirements and regulatory aspects of the registration and of the operations of an FPO is imperative since this would provide an overview of the extent and type of government involvement in the creation and promotion of 10,000 FPOs. The research uses documents, reports, and other information released by the Ministry of Corporate Affairs (MCA), Ministry of Agriculture & Farmer's Welfare (MAFW), NABARD, and SFAC for a comprehensive formal institutional analysis of producer organisations.

Further, using the theoretical concept of co-production described in the previous chapter, this information about the regulatory framework of FPOs will shed light on the collaborative efforts between the private and the public. This analysis will guide the research in understanding whether the government and the private agricultural sector share a synergy in the production of public goods or whether the legislations describe the top-down nature of state patronage. Another reason why the analysis of these legislations is necessary, is to understand if these requirements consider the nature of a producer company, since it is not the same as other corporate entities defined under the Companies Act, 2013.

3.2. Case Study Selection

To facilitate a comprehensive understanding of collective action and informal institutions within farmer producer organizations (FPOs), this research employs specific case studies as illustrative examples. The process of selecting suitable cases for the case study analysis presented a dilemma, with several potential avenues for exploration. One option was to choose cases from different states, featuring diverse organisational structures, crop types, objectives, operations, and varying organization sizes. Alternatively, the study could have compared a successful case with a failed example to identify key differentiators between them. Each of these avenues present valuable possibilities for further research, potentially contributing to a broader understanding of FPO dynamics and outcomes.

However, for this study, a deliberate decision was made to focus on two successful cases of FPOs: Sahyadri Farmers Producer Company Limited and Vasundhara Agri-Horti Production Company Limited (VAPCOL). Sahyadri Farms, based in the state of Maharashtra, has emerged as a prominent example of successful collective action in the agriculture sector. It is a farmer-owned FPO that specializes in the cultivation and marketing of high-value horticultural produce. Over the years, Sahyadri Farms has demonstrated remarkable growth and sustainability, driven by its efficient value chain management, and strong farmer participation.

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On the other hand, Vasundhara Agri-Horti Producer Company Limited (VAPCOL), situated in the state of Karnataka, is another exemplary case of successful collective action in the agricultural domain. VAPCOL is an FPO that has garnered significant recognition for its transformative impact on the livelihoods of smallholder farmers. The organization focuses on the production and marketing of organic fruits and vegetables, adhering to sustainable farming practices and fair-trade principles. Through effective governance and strategic planning, VAPCOL has achieved remarkable success in terms of market access, financial sustainability, and social empowerment of its members.

The primary aim was to gain insights into the factors that led to their success and the specific attributes that contributed to their achievements. By studying successful cases, the research aims to discern the critical elements and strategies that were instrumental in their achievements, which could serve as valuable lessons and guidelines for fostering collective action among other FPOs. In the analysis of the selected case studies, the research dives into their organisational history, structure, and operations. This comprehensive examination aims to identify any similarities or discernible differences between the two successful cases in terms of their approach, governance, resource management, decision-making processes, and overall functioning. By scrutinizing these factors, the study seeks to unveil the drivers of success and uncover any unique practices or characteristics that set these FPOs apart. The comparison between the two successful cases allows for an exploration of the intricate factors that contribute to successful collective action within FPOs. It helps identify best practices, potential pitfalls to avoid, and areas for improvement that can be leveraged to enhance the effectiveness and sustainability of other FPOs.

3.3. Key Informant Interviews (KIIs)

This study involved conducting four key informant interviews with industry professionals and experts specialized in agricultural development and farmer producer organizations (FPOs). The selection of these informants was based on their expertise and substantial experience in closely engaging with FPOs. Employing a semi-structured approach, the interviews aimed to obtain comprehensive insights and in-depth discussions by utilizing open-ended questions.

The KIIs provided their valuable viewpoints concerning the significance of collective action in the realm of agricultural development, the array of challenges confronted by FPOs, and the influence of government policies and support mechanisms on their operational dynamics. Explorations encompassed diverse aspects, including the critical determinants of FPO success,

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the intricate interplay of social capital, institutional arrangements, and state regulations in shaping their performance. The informants' expert opinions shed light on the opportunities and constraints faced by FPOs, particularly in their endeavours to empower smallholder farmers with the government at the helm of agricultural transformation in India.

The research design adopted for this study involves a qualitative approach, encompassing the analysis of government documents and reports, a detailed examination of two successful FPO cases, and the invaluable insights gathered through key informant interviews. This combination of data sources enables a comprehensive investigation into collective action within FPOs, integrating theoretical frameworks with practical experiences to achieve a nuanced and robust understanding of the subject. With the triangulation of different data points in the design of this research, it not only explores the theoretical foundations of collective action and state regulation but also incorporates real-world perspectives from key informants, enhancing the validity and applicability of the findings.

3.4. Operationalising the Theory

The analysis of the two selected case studies will be guided by a set of key independent variables that encompass various dimensions of the Farmer Producer Organizations/Companies (FPO/Cs). These variables serve as crucial indicators for understanding the organisational dynamics and functioning of the FPOs.

Firstly, beginning with the historical context and establishment of each FPO will provide insights into the timing and circumstances surrounding their creation followed by their geographical location to assess their regional context. Next, exploring the organisational structure will shed light on the internal governance mechanisms and decision-making processes which guide collective action within each FPO. Noting the directors that are on the board will enable us to understand influence on the strategic direction and governance of the FPOs which incentivises collective action among the farmer members. Furthermore, examining the main goals and objectives pursued by the FPOs will enable us to evaluate their overarching mission and purpose and to determine their effectiveness in becoming successful. This analysis will provide valuable information on their ability to sustainably support their members and agricultural activities.

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4. Policy Context of India

The Cooperative Societies Act passed by the Government of India in 1912 enabled the creation of non-credit cooperative and collective societies such as consumer cooperatives, marketing cooperatives, producer cooperatives. Credit cooperatives were already present under the Cooperative Credit Societies Act of 1904 with their main aim to decrease poverty and address farmers' debts. However, these cooperatives or producer organisations[4] were under-performing functionally as well as financially and therefore were being criticised for failing to be sustainable businesses due to various reasons such as low sense of ownership, excessive government dependency and state patronage followed by political interference, increased corruption and bureaucracy (Govil et al., 2020; Trebbin & Hassler, 2012). In 2002, the Department of Agriculture and Cooperation under the Ministry of Agriculture of the Government of India (GOI) initiated the formation of farmer producer companies (FPCs) which were registered under the Companies Act of 1956 through a special provision. The Companies Act, 1956[5] was amended in 2013 for producer organisations to be legally registered under Section 581(C) (Indian Companies Act, 2013) as primary producer companies[6]. These legal provisions have been important enabling factors on behalf of the government to further institutionalise and increase the visibility of bucolic activities.

Farmers' Producer Companies (FPCs) are required to meet certain conditions as a registered company. While profit generation is one of their main objectives, depending on the type of farming activities its members are involved in, there can be multiple objectives (Deka et al., 2020). FPCs offer several advantages to their members such as reduction in cost of production or cultivation, aggregation of produce as well as transport cost therefore increasing the net value to be accrued, economies of scale, access to information, training about good agricultural practices, minimisation of post-harvest losses, minimisation of adverse effects of price volatility along with avoidance of price fluctuations, access to institutional credit and increased bargaining power (SFAC, 2019; Bhawar et al, 2020; Shrivastava et al., 2022). FPCs can have

[4] Producer organisations or farmer producer organisations is a more broad and general term used for producer organisations incorporated/ registered either under Part IXA of Companies Act or under Co-operative Societies Act of the concerned States and formed for the purpose of leveraging collectives through economies of scale in production and marketing of agricultural and allied sector (GOI, 2020).
[5] From here on, this will be referred to as the Companies Act of 2013.
[6] The National Bank for Agriculture and Rural Development (NABARD) of India defines a producer company as a hybrid between cooperative societies and private companies. In the legal text of the Companies Act, primary produce has been defined as – "*produce of farmers, arising from agriculture* (*including animal husbandry, horticulture, floriculture, pisciculture, viticulture, forestry, forest products, re-vegetation, bee raising and farming plantation products*), *or from any other primary activity or service which promotes the interest of the farmers or consumers*."

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individuals, groups or associations as their members and require a board of directors (BODs), a chief executive officer (CEO) or a general manager as well as a management or administration (Deka et al., 2020). Different types of FPCs are present in the country based on their objectives or type of farming activities with agriculture having the most number (Mukherjee et al., 2018). Being a member of an FPC, farmers are their primary client and can gain access to financial resources, support from government programmes, banks and other public as well as private financial or agricultural organisations. Farmer producer organisations can prove to be most beneficial when farmers who have some similarities such as the type of crops, land size, financial requirements, etc., come together to increase efficiency of production and minimise losses (Shrivastava et al., 2022). Successful aggregation requires common interest groups as its basic unit. Although this is not always the case since several NGOs are tasked with the responsibility of gathering farmers and forming an FPO[7].

The Government of India has embarked on an ambitious mission to promote the establishment of 10,000 Farmer Producer Organizations (FPOs) across the country by the year 2024 (Government of India, 2021; SFAC, 2019 & Nirmal, 2020). This strategic initiative underscores the government's commitment to empower smallholder farmers and foster inclusive agricultural development. By facilitating collective action and collaboration among farmers, FPOs are envisioned as catalysts for improving market access, enhancing bargaining power, and promoting sustainable rural livelihoods. In this context, this thesis situates itself within the broader framework of the government's FPO promotion program, seeking to analyse the complex phenomenon of collective action within these organizations as the effective functioning of collective action mechanisms within FPOs is influenced by a range of factors, including social dynamics, institutional arrangements, and external support mechanisms.

Although policies that promote collective efforts among farmers exist, their mere presence does not guarantee farmers' ability to effectively engage in collective action. Farmers may lack the necessary expertise, knowledge, or awareness of government programs and schemes that could potentially enhance their livelihoods and facilitate collective action. Consequently, bridging this gap and facilitating active farmer engagement in collective action becomes imperative. To address this challenge, various NGOs play a vital role in empowering farmers and promoting collective action in the agricultural sector.

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[7] This is further expanded on page 15.

Non-governmental organizations such as BAIF (Bharatiya Agro-Industries Foundation), MANAGE (National Institute of Agricultural Extension Management), NAFED (National Agricultural Cooperative Marketing Federation of India) among others, Cluster Based Business Organizations (CBBOs), and Small Farmers' Agribusiness Consortium (SFAC) as well as state level government and non-governmental organisations play pivotal roles in extending institutional support for the management and governance of FPOs in India (NAFPO, 2022; Singh, 2020). These institutions offer capacity-building programs, training initiatives, and technical assistance to strengthen the managerial and governance capacities of FPOs. Through workshops, seminars, and training sessions, they equip members and stakeholders with essential knowledge and skills pertaining to financial management, value chain analysis, market linkages, and best agricultural practices (Bhawar et al, 2020; NAFPO, 2022). Furthermore, NGOs and CBBOs provide invaluable mentoring and advisory services to FPOs, offering guidance on strategic planning, organisational structuring, and operational management. By leveraging their expertise and practical insights, they assist FPOs with the registration processes, identifying suitable government programmes that align with the goals of the FPO and several other challenges and opportunities that the FPOs need to face. These institutions facilitate linkages with financial institutions, government agencies, and other stakeholders, ensuring access to credit, subsidies, and support programs, which are vital for the sustainable growth of FPOs and FPCs. This institutional support creates an enabling environment for FPOs to function efficiently and effectively with mechanism of collective decision-making and collaborative governance.

The jurisdictional division between the state and central governments in the regulation of farmer producer companies (FPCs) and organisations (FPOs) in India is closely linked to the constitutional and federal design of the country. In the Constitution of India, Article 246 (Schedule VII) outlines the distribution of legislative powers and functions between the Union (the central government) and the States (the state governments) by specifying three lists: the Union List, the State List, and the Concurrent List. The Union List encompasses subjects exclusively under the jurisdiction of the Parliament of India, focusing on national matters such as defence, foreign affairs, currency, and banking. The State List comprises areas in which only the State Legislatures can enact laws, encompassing subjects like police, public health, and agriculture (Schedule VII, Section 2.14). The Concurrent List includes subjects on which both the Parliament and the State Legislatures can legislate concurrently, including criminal law, bankruptcy, and education. This distribution of powers ensures a balanced federal structure,

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where both the Union and the States have defined responsibilities and authority in matters of legislation (Constitution of India, 1950).

Agriculture is a subject that falls under the State list, which means that state governments have primary responsibility for formulating policies and legislations and enacting regulations related to agricultural activities. This delegation of power to the state level allows for greater flexibility in addressing the specific agricultural needs and challenges faced by different regions. The state governments, being closer to the ground and having a better understanding of the local agricultural context, are well-positioned to design and implement policies that cater to the unique requirements of their respective states and therefore hold the autonomy to tailor agricultural policies based on regional variations in climate, soil conditions, crop patterns, and farming practices as identified by FAO (2006) for the development of a good agricultural strategy. This decentralized approach recognizes the diversity of India's agricultural landscape and acknowledges the importance of localized solutions for sustainable rural development.

On the other hand, the central government plays a supportive role in the agricultural sector by providing financial assistance, technical expertise, and policy guidance to the state governments (Government of India, 2021; Kumar et al., 2015; Mp & Mathur, 2018; Mukherjee et al., 2018). The central government's involvement is driven by the recognition of agriculture's crucial role in the overall development of the country and its commitment to ensuring food security, rural livelihoods, and inclusive growth. It formulates national-level policies, schemes, and programmes that aim to address overarching issues in the agricultural sector, promote innovation and technology adoption, and provide market access to farmers. The regulation of FPCs, being integral to the agricultural sector, is aligned with this jurisdictional division. State governments have the authority to enact laws and regulations specific to FPCs, which govern their formation, operations, and functioning. They have the power to establish guidelines for registration, membership, governance structure, financial management, and other aspects related to the functioning of FPCs within their respective states (NABARD, 2019). This decentralized regulatory framework allows state governments to cater to the unique needs and priorities of their agricultural communities and foster an enabling environment for the growth of FPCs.

Understanding the political motivations and dynamics at play in the regulation of FPCs is essential for comprehending the contextual factors that shape their development and functioning. It highlights the importance of considering the economic and political landscape

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when assessing the support mechanisms that promote collective action in the sustainable growth of FPCs in India.

To sum up, the jurisdictional division between state and central governments in the regulation of FPCs reflects the decentralized approach to agricultural governance in India. The government's support and conducive policy environment play a vital role in fostering the success of FPOs, contributing to their sustainability and impact. The assumed structural bias against rural development is envisaged as absent since the government is very committed to agricultural development in India.

5. Findings and Analysis: Unlocking the Potential of Collective Action

In this chapter, we embark on a comprehensive investigation into two successful FPCs - Sahyadri Farmers Producer Company Limited and Vasundhara Agri-Horti Producer Company Limited (VAPCOL). By examining their organisational and governance structures, goals, and operational practices, this section aims to discern the ingredients of their accomplishments that have provided a sustained growth for the companies and the associated farmers.

5.1. Sahyadri Farmers Producer Company Limited

Sahyadri Farms stands as an exemplary Farmer Producer Company (FPC) in India, embodying successful collective action and contributing to rural development. It was the product of the efforts of a farmer and agricultural engineer Mr. Vilas Shinde. Founded in 2011, the organisation operates within the fertile landscapes of the Western Ghats of Maharashtra (a state in the south-west of India), renowned for its agricultural richness and biodiversity. Headquartered in the city of Pune, the FPC extends its reach across multiple districts in the state, boasting a membership of approximately 11,000 farmers (ABP MAJHA, 2022)[8] from diverse socio-economic backgrounds but it began with a group of about only 11 farmers.

Sahyadri places farmers at the very core of its existence, with these hardworking individuals serving as its primary stakeholders. The FPC's ownership structure ensures that farmers themselves hold shares in the organisation, making them the ultimate beneficiaries of its activities and outcomes. This ownership model aligns perfectly with their motto 'of the farmers, by the farmers, for the farmers' creating a social capital linking farmers to be active agents of

[8] This information is from an interview with the Chairman and Managing Director of Sahyadri, Mr. Vilas Shinde.

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collective action. Another benefit of this ownership model reflects in embodying a true sense of farmer ownership and democratic decision-making which ensures that the interests and aspirations of farmers are at the forefront of every strategic decision and operational endeavour. It not only fosters a strong sense of ownership among farmers but also generates a deep sense of pride and responsibility in contributing to the collective success of the FPC.

With a strong commitment to overcoming the challenges of individual farmers, professionalism, and an end-to-end approach[9], Sahyadri Farms has emerged as a prominent player in India's FPC landscape. The organisation prioritizes empowering smallholder farmers and enhancing their market access, profitability, and overall livelihoods. Sahyadri Farms has effectively harnessed economies of scale by consolidating the produce of its members, leading to improved marketing opportunities, and reduced post-harvest losses. Under its collective framework, Sahyadri Farms cultivates a diverse range of high-quality fruits, and vegetables such as mangoes, bananas, pomegranates, tomatoes, sweetcorn with grapes being their main commodity while catering to both domestic and international markets. Meeting food safety standards set by the Indian government as well as complying with international market standards, the FPC has earned recognition for its ethical as well as environmentally friendly practices, positioning it as a role model for sustainable agriculture and a farmer-centric approach.

Sahyadri’s vision includes making farming a profitable and sustainable venture for all farmer members while providing safe, nutritious, and affordable farm produce and value-added products to consumers. The FPC's core mission centres around being a trusted, value-driven, and professionally managed organisation, solely dedicated to the welfare of farmers (ABP MAJHA, 2022). To realize this vision, Sahyadri Farms has outlined strategic objectives, such as ensuring optimal realization for all farm produce, optimizing resource usage, minimizing costs along the entire value chain, implementing effective financial and risk management practices, and supporting farmers in enhancing productivity and product quality through appropriate technology adoption. Sahyadri Farms seeks to establish a robust supply chain that guarantees traceable, safe, and healthy farm produce and value-added products from farm to plate. Moreover, the FPC places great emphasis on cultivating respectful relationships with the environment, employees, and all stakeholders, embracing sustainable and responsible agricultural practices (MANAGE, 2018). For stronger collaboration among the farmers with

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[9] This constitutes the process of sowing the seeds until the produce is sold in the market.

the FPC, Sahyadri has initiated the creation of a Farmer Facility Centre for maintaining backward linkages with its farmers. The centre provides various agriculturally essential services to the farmers to enhance production with easy access to various equipment and technology, inputs, financial assistance, and welfare measures for their well-being (MANAGE, 2018). These enhance farmers' skills and understanding of various sustainable agricultural practices, enabling them to improve productivity and adopt eco-friendly methods. Through such efforts of building social capital and trust, Sahyadri Farms fosters a strong sense of ownership and commitment among its farmers, reinforcing the collective mission and vision of the organization.

5.2. Vasundhara Agri-Horti Producer Company Limited (VAPCOL)

Vasundhara Agri-Horti Producer Company Limited (VAPCOL) emerges as a prominent Farmer Producer Company (FPC) that has carved a notable presence in India's agricultural sector. Founded with a vision to empower farmers and foster sustainable agricultural practices, VAPCOL serves as a testament to the transformative potential of collective action in propelling rural development and enhancing farmers' livelihoods. Operating on the core principles of farmer ownership and participation, VAPCOL strives to bridge the gap between rural communities and urban markets through innovative and inclusive approaches. VAPCOL's organisational and ownership structure is different to Sahyadri in such that it is a multi-state second-tier farmer producer company (*Vrindavan*, n.d.). This means that farmer organisations are the members and own equity in VAPCOL while farmers are the members of the first-tier farmer organisations.

The structure and story of VAPCOL is certainly different to that of Sahyadri with both being among the largest and most successful FPCs in the country. VAPCOL has 45 member organisations (cooperatives, farmer organisations, producer groups, self-help groups (SHGs) or other unregistered producer groups). The multi-state nature of VAPCOL implies that its member FPOs belong to five different states of India namely Gujarat, Karnataka, Madhya, Pradesh, Maharashtra, Uttar Pradesh, Chhattisgarh and Rajasthan (*Vrindavan*, n.d.) while it is headquartered in the city of Pune in Maharashtra. VAPCOL's inception was spurred by the merging of several farmer producer organisation with the objective of creating an enabling environment for smallholder farmers and facilitating their access to essential resources, advanced technology, and competitive markets (Trebbin & Hassler, 2012). Concentrating primarily on horticulture and allied activities, VAPCOL has successfully established robust supply chains and market linkages, ensuring equitable returns for farmers' produce.

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Throughout its journey, VAPCOL has actively implemented various capacity-building programs and farmer training initiatives, providing its members with the requisite knowledge and skills to enhance their agricultural practices. Its primary objective is to create sustainable livelihoods for rural communities by establishing strong market linkages. The company follows guiding principles that include facilitating marketing of fresh and processed produce of its members, providing technical support, promoting brand identity for the produce, and offering capacity-building programs for member organizations. VAPCOL takes charge of marketing the products while the member organizations directly own the entire chain of activities from procurement to final processing and quality grading (*Vrindavan*, n.d.).

Essentially VAPCOL operates with a focus on empowering its members and rural communities by enabling access to markets and appropriate technology for value chain operations. Profits are channelled back to the member organizations, ensuring a collective benefit from the marketing efforts. The profits generated from commercial operations are mostly distributed to member organizations as patronage dividend or equity dividend, with minimal surplus reinvested in expanding marketing activities and covering organisational overheads (*Vrindavan*, n.d.). Regardless of their size or legal status, all members of VAPCOL receive a range of benefits, including access to diverse distributor and retail markets, exploration of new marketing avenues, and access to financial support. The organization also offers managerial assistance, market information, and direct selling opportunities. Additionally, VAPCOL provides agricultural extension services to improve farm yields and returns for its members and offers a legal umbrella to unregistered members, facilitating access to licensing and tax registrations. Finally, VAPCOL also provides professional expertise and assistance in various domains through its staff or external consultants.

Both the FPCs have a very strong and organised board of directors[10] which has been a crucial factor of their success in reaping the benefits of collective action. As per the words of Mr. Vilas Shinde (ABP MAJHA, 2022), creating a professional environment was essential for the success of Sahyadri. Sahyadri now has several subsidiary companies specialising in various activities such as retail and post-harvest management. Each of these companies have their own board of directors who specialise in various areas of expertise including farmers. In VAPCOL as well two of the six directors have business experience or have worked in private sector whereas the rest of the four directors are farmers who represent the different regions or organisation that

[10] See Appendix 3 – Organisation of the FPCs' Board of Directors

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are part of VAPCOL. This mix of BODs is certainly a recipe for success as it combines the knowledge and experience of farmers as well as the technical expertise of experienced professionals to run an efficient business.

6. Discussion

This section discusses the main findings and the policy context using the theory set forth in the Literature Review and Theoretical Framework section earlier to enable us to draw conclusions for the research. The data collective during the interviews support the subsequent discussion.

In adherence to legal requirements as per the Companies Act, 2013, any registered entity, whether it be a cooperative society, collective, or producer company, must conduct annual general meetings (AGMs) with a minimum quorum of 1/4th of the shareholders in attendance. Given that every shareholder has the right to one vote in all official decisions (Companies Act, 2013; ABP MAJHA, 2022), farmers must be able to advocate for their needs and exercise their rights, which would not only increase their sense of ownership and belongingness but also improve their collective behaviour towards other members as well as the FPO. However, in the context of several FPOs farmers often encounter challenges where their voices are not adequately heard, or their needs are not effectively advocated. This situation may arise due to various factors, such as a lack of entrepreneurial spirit among certain members or the dominance of more active farmers (also called as progressive farmers[11]) within the organisation. They dominate the operations of the organisation which can lead to fading out of active participation eventually diluting the fundamental idea of collective action. These dynamics can lead to a disparity in decision-making power, hindering meaningful participation and representation for all farmers involved from which problems of free riding may arise. Some farmers may not feel the need to actively participate[12] in meetings or cooperate in the organisational processes, potentially impeding the collective efforts and goals of the FPO. Consequently, it becomes imperative for FPOs to address these issues by conducting regular and democratic elections[13] and foster an inclusive environment that empowers all farmer stakeholders, ensuring their active involvement and equitable engagement in shaping the organisation's objectives and activities.

[11] Interview with ex-NABARD, 09.06.2023; Interview with Samruddhi Farms, 15.06.2023; Interview with APMAS, 24.07.2023. Progressive farmers have an entrepreneurial spirit and act as self-help and extension workers for their rural community who take on more leadership roles when communicating with large groups of farmers (Haryanto et al., 2021).
[12] Interview with ex-NABARD, 09.06.2023; Interview with Samruddhi Farms, 15.06.2023.
[13] Interview with Samruddhi Farms, 15.06.2023; Interview with APMAS, 24.07.2023.

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Free riding also arises when certain farmers opt not to actively participate in the collective activities as they are not obliged to sell their produce to the FPC that they are a member of[14]. This behaviour can be attributed to the belief that they can reap the benefits of the FPC's efforts without actively contributing to its operations and business activities. The phenomenon of free riding therefore poses significant challenges to the FPC's sustainability and effectiveness, as it undermines the principle of collective action and cooperation among its members. To incentivize farmers and discourage free riding tendencies, FPCs can employ a range of strategies. One effective approach is to establish a fair and transparent profit distribution mechanism that ensures farmers receive tangible benefits from their involvement in the FPC which addresses the first challenge posed by Ostrom (1996) – the organisation of citizens, social capital outside the government. By witnessing direct and equitable returns on their contributions, such as increased profits, access to better markets, and enhanced bargaining power, farmers are more likely to actively participate and wholeheartedly engage in the collaborative and collective efforts of the FPC. Sahyadri Farms follows a unique ownership structure where farmers are the primary capital owners and have collectively contributed to the paid-up capital of the organization. As a result, they receive substantial benefits, with returns on their capital amounting to nearly tenfold their initial investment (Sahyadri Farms, 2023). This distinctive ownership arrangement through the creation of social capital reinforces the sense of ownership and participation among farmers, aligning their interests with the success and profitability of the organization. In the operations of a famer producer organisation where profit is one of the main goals, the companies become richer whereas the farmer stays poor. To obtain effective results of a collective action, it is important for farmers to participate which cannot occur without positive results and clear advantages of the collective efforts of such producer organisations.

An additional incentive mechanism employed to foster collective action and discourage free riding is the implementation of differentiated returns based on crop standards. Farmers are rewarded differently depending on the quality of their crops, and these returns are subject to weekly adjustments in response to market dynamics (ABP MAJHA, 2022). This dynamic pricing approach aims to incentivize active participation and cooperation among farmers, as it aligns their interests with the organization's overall performance and market fluctuations.

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[14] Interview with ex-NABARD, 09.06.2023; Interview with Food Systems Asia, 21.07.2023; Interview with Samruddhi Farms, 15.06.2023.

Showcasing significant benefits of their involvement in FPCs[15], the organization can inspire confidence and enthusiasm among its members, encouraging them to actively participate and cooperate with the FPC's activities. Ultimately, creating a culture of success and showcasing the tangible rewards of collective action can foster a sense of ownership and commitment among farmers towards the FPC which can effectively combat free riding tendencies, encouraging farmers to actively contribute and invest in the FPC's growth and development.

The government of India has the means, ability, and network to provide support to the agricultural sector[16] which it does through various means such as implementing agencies for the formation of FPOs as well as in their management and operations, access to credit and financial assistance, governance assistance and so on (GOI, 2020). This intervention and regulation by the state is crucial in the progress of the FPOs and is an essential factor in co-production and creation of synergy between the private and the public. Although there exists a lot of state support, farmers are not satisfied with the provision of support from the government, largely due to the numerous schemes with stringent requirements[17] that are available. It has also been understood as “too much state indulgence”[18] with these schemes being perceived as unreliable, and farmers finding difficulty in understanding the eligibility requirements to enable state support[19]. This perceived inadequacy of state support has prompted them to look for ways to empower themselves collectively rather than relying solely on the government. This shift in approach reflects the growing recognition among farmers that their economic prosperity and development lie in their own hands and can be achieved through collaborative efforts.

In the absence of a Minimum Support Price (MSP) for fruits and vegetables (ABP MAJHA, 2022), farmers have faced significant challenges in ensuring fair and stable prices for their produce. This lack of price support from the state further underlines the need for farmers to explore self-empowerment through collective action. By coming together and leveraging their collective strength, farmers can enhance their bargaining power and negotiate better prices for their agricultural outputs. As a result, farmers are increasingly turning towards FPOs as viable mechanisms to pool their resources, knowledge, and efforts. The emphasis on empowering farmers together rather than relying solely on government support signifies a paradigm shift in

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[15] According to one interviewee, the promise of doubling farmers income is not possible since markets are influenced by several global factors not excluding the domestic environment.
[16] Interview with Food Systems Asia, 21.07.2023.
[17] Interview with Samruddhi Farms, 15.06.2023.
[18] Interview with Food Systems Asia, 21.07.2023.
[19] Interview with Food Systems Asia, 21.07.2023; Interview with Samruddhi Farms, 15.06.2023.

agricultural development. It emphasizes the importance of collective action and community-led initiatives in driving sustainable and inclusive growth. This approach not only enables farmers to secure their economic interests more effectively but also promotes trust, and a sense of ownership and agency among them further fostering a culture of collaboration, knowledge-sharing, and collective decision-making among farmers, which FPOs are uniquely positioned to facilitate.

The findings of this research demonstrate that farmers' motivations for collective action and the establishment of FPOs are evident; however, they lack the awareness and knowledge[20] (MAFW, 2018) required to initiate such efforts independently. As a result, they heavily depend on support and guidance from NGOs and other supporting institutions, indicating a top-down approach in the formation of FPOs. This increases the dependency of individual farmers[21] as well groups of farmers (cooperatives and collective societies, producer organisations and companies) on these supporting institutions. Farmers also exhibit a reliance on a leader for a strategic direction with a select group of risk-takers making significant contributions to generate cumulative returns for the group[22]. The interviews[23] also revealed farmers need to be convinced of forming such a collective group by using the informal links and associations in the village communities such as religious orders, family ties and similar relations. To foster more effective collective action, it is imperative to adopt a bottom-up direction, where farmers actively participate in the creation and management of FPOs. This bottom-up approach empowers farmers to have greater ownership and control over decision-making processes which can be facilitated through various informal institutional mechanisms such as trust and norms between homogenous factions of smaller communities or the larger society. Thus, embracing a bottom-up perspective is crucial in genuinely empowering farmers and promoting inclusive agricultural development.

The successful case studies of Sahyadri Farms and VAPCOL illustrate that while both FPCs have achieved remarkable success in fostering collective action, their formation and organization have primarily followed a top-down approach. The establishment of these FPCs was driven by external actors, including government initiatives, NGOs, and other supporting institutions, which played pivotal roles in guiding and facilitating the creation of these organizations. This top-down institutional mechanism may be necessary as the initial stimulus

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[20] Interview with Samruddhi Farms, 15.06.2023.
[21] Interview with Food Systems Asia, 21.07.2023.
[22] Interview with Samruddhi Farms, 15.06.2023; ABP MAJHA, 2022.
[23] Interview with Samruddhi Farms, 15.06.2023; Interview with ex-NABARD, 09.06.2023.

to encourage farmers to form FPOs but moving forward farmers will remain reliant on this top-down institutional support. These external actors played a significant role in raising awareness, providing technical assistance, and building the necessary capacities of farmers to participate in collective action initiatives. Researchers have barely scratched the surface when studying collective action in India in the context of agricultural and rural development[24]. Consequently, the inception of Sahyadri Farms and VAPCOL was shaped by the support and mentorship of these external entities, and farmers were motivated to join these FPCs through various incentives and benefits provided by these institutions. The top-down approach is further evident in the decision-making and governance structures of Sahyadri Farms and VAPCOL. The board of directors and management teams of both FPCs comprise external experts, government officials, and representatives from supporting institutions. This hierarchical structure of governance may result in limited ownership and autonomy for the farmer members, as key decisions and strategic planning are often influenced by these actors.

Moreover, government policies and schemes, initiated by the state and central governments, also play a significant role in shaping the organisation and functioning of FPOs which are essential for enabling farmers to collectively organise themselves (MAFW, 2018). However, their top-down nature can often limit the agency and autonomy of farmers in shaping the organisational dynamics of FPOs. The policies may be driven by external considerations and may not fully capture the nuanced realities and challenges faced by the farming community at the grassroots level. Despite the top-down approach, the success of Sahyadri Farms and VAPCOL in fostering collective action is undeniable. The incentives and benefits offered by FPCs have motivated farmers to participate actively, leading to the successful functioning and growth of these organizations. However, it is essential to recognize the need for a more bottom-up institutional approach, where farmers have greater ownership and agency in the decision-making processes of FPOs. By adopting a bottom-up perspective, FPOs can better address the unique needs and aspirations of their members to create an ecosystem that promotes genuine collective action.

The ambitious goal set forth by the government of forming and promoting 10,000 FPOs has for the most part not been positively accepted and has prompted varied responses from the interviewees. While the idea of establishing a large number of FPOs enhances the visibility and presence of these CA groups with an honest effort to reach the individual[25], there have been

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[24] Interview with APMAS, 24.07.2023.
[25] Interview with Samruddhi Farms, 15.06.2023.

concerns about the practicality and effectiveness of this plan. The government rather than focusing on the number of FPOs should focus on the development and management of existing ones which are also titled as invisible institutions[26] either due to their non-performing or non-active status. Currently, there are already 7,374 producer companies in existence (Govil et al., 2020). However, the focus of these implementing agencies and organisation appears to primarily be on their promotion and formation, rather than ensuring their sustained and successful functioning. Bridging this gap requires a structural shift in the approach towards FPOs.

The findings further reveal that co-production certainly is present with collaboration between the farmers and the government and the FPO as the entity that creates the linkage between the two to achieve a state of co-production and synergy. This provides an answer to the question of how creating a synergy between the government and the citizens is possible through middlemen like FPOs.

In sum, the two FPOs although successful exhibit a nature of top-down institutionalism where leaders and the governing body of the organisation play the leading role for collective action to thrive among farmers. Support from the government creates an enabling environment and therefore there is successful co-production. However, bottom-up collective action is still quite minimal with little initiative from individual farmers to organise themselves. The absence of urban bias is evident due to the presence of formal institutional support for the creation, formation, and management of FPOs in India.

7. Conclusion

Examining the institutions in the ecosystem of farmer producer organisation in India has enabled us to gain insights on the dynamics and potential of collective action in the agricultural sector in India. The study has attempted to shed light on the factors contributing to the success of collective action initiatives with access to state support that create a synergy between the private and the public.

The entity of an FPO plays a crucial role in bridging the gap between rural communities and urban markets. By pooling resources, knowledge, and efforts, farmers in FPCs can overcome common challenges, enhance their bargaining power, and create sustainable change in the agricultural sector. Through collective action, FPCs offer numerous benefits to smallholder

[26] Interview with APMAS, 24.07.2023.

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farmers, such as reduced transaction costs, increased access to information and technology, and better market linkages. These advantages enable farmers to compete more effectively with larger businesses and improve their livelihoods.

The case studies of Sahyadri Farms and VAPCOL demonstrate the potential of collective action in driving rural development. Both FPCs have been successful in providing valuable support to their members, enabling them to access better markets, adopt modern agricultural practices, and improve their income. The success of these FPCs can be attributed to several key factors, including effective leadership, strong governance structures, and the provision of essential services and resources to their members by creating a strong social capital and fostering trust and cooperation among its members. However, the analysis also reveals challenges that must be addressed to ensure the success of collective action initiatives. One key challenge is the issue of free riding, where some farmers may not fully participate in collective action initiatives, relying on others to bear the costs and efforts. Addressing free riding requires creating strong incentives for active participation and ensuring that benefits are distributed equitably among all members.

Moreover, the success of collective action initiatives is closely linked to the level of institutional support and enabling policies provided by the government and other supporting organizations. The active involvement of NGOs, cooperative banks, and government agencies plays a crucial role in supporting the development and functioning of FPCs as these institutions provide technical assistance, capacity-building programs, and financial support, empowering farmers to participate in collective action effectively. These findings substantiate the absence of urban bias in India's path toward agricultural and rural development and affirm the government's commitment to fostering collective action among farmers and promoting sustainable agricultural practices throughout the country.

Given the limited scope of this research and the availability of information, the FPOs selected for analysis represent successful and prominent examples. However, future studies could enhance the understanding of co-production and collective action among farmers and FPOs by employing a larger and more diverse sample, encompassing different case studies. Additionally, investigating the role and dynamics of implementing agencies would be a valuable area of research, shedding light on the synergy between the government and farmers in fostering effective collective action.

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Therefore, addressing the challenges of successful co-production and collective action can be understood through the example of farmer producer organisations who play a defining role in the ability of farmers to have access to better inputs and returns. By studying the dynamics of these organizations and exploring strategies for enhancing their efficacy, policymakers and stakeholders can foster an environment conducive to sustainable agricultural development and improved livelihoods for farmers thereby also moving away from the norm of urban bias.

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I. Appendix 1 – List of Interviewees

Interviewee (2023), ex-NABARD interviewed by Davare, R. (09 June 2023).

Interviewee (2023), Samruddhi Farmers Producer Company interviewed by Davare, R. (15 June 2023).

Interviewee (2023), Food Systems Asia interviewed by Davare, R. (21 July 2023).

Interviewee (2023), Mahila Abhivruddhi Society, Andhra Pradesh (APMAS) interviewed by Davare, R. (24 July 2023).

II. Appendix 2 – Interview Questionnaire

1. Based on your extensive experience in agricultural and rural development, how have you observed the role of collective action in the functioning of farmer producer companies (FPCs)? How does collective action contribute to the success or challenges faced by FPCs?

2. Can you provide examples of state interventions or regulations that have influenced the formation, functioning, or growth of farmer producer companies? How have these interventions impacted the collective action dynamics within FPCs?

3. In your view, what are the key motivations for farmers to engage in collective action through farmer producer companies? How does the presence or absence of state support influence their decision to participate in collective action initiatives?

4. How does the state facilitate or hinder collective action within farmer producer companies? What types of support mechanisms, such as financial assistance, infrastructure development, or capacity building, have you observed in relation to state intervention?

5. What are the challenges faced by farmer producer companies in coordinating collective action efforts, and how can state regulations or policies address these challenges?

6. Can you share examples of successful collaborations between farmer producer companies and state agencies that have led to improved outcomes in terms of farmer empowerment, livelihood enhancement, or market access? What factors contributed to the success of these collaborations?

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7. From your experience, what are the potential risks or negative consequences of state intervention or regulation in the context of farmer producer companies and collective action? How can these risks be mitigated or managed effectively?
8. The Government of India has announced its plan of promotion and formation of 10,000 FPOs. How do you think this is beneficial for rural and agricultural development in India?

III. Appendix 3 – Organisation of the FPCs' Board of Directors

A. Sahyadri Farmer Producer Company Limited					
Sr. No.	Directors	Start Date	Qualifications	Years of Experience as Director	Director of other Companies/Units
1	Vilas Shinde	27-12-2010	Chairman & Managing Director, Studied Agricultural Engineering	12	14 Companies
2	Madan Vishram Shinde	27-12-2010	Director	12	6 Companies
3	Mangesh Kisan Bhaskar	27-12-2010	Director	12	5 Companies
4	Ramdas Waman Patil	30-09-2022	Director	1	3 Companies
5	Kailas Shivaji Malode	30-09-2022	Director	1	3 Companies
6	Mahesh Dwarkanath Bhutada	30-09-2022	Director	1	2 Companies
7	Sandip Shinde	25-01-2023	Independent Director		2 Companies
8	Sachin Walunj	Apr-15	CEO, General Manager		
9	Santosh Watpade	Nov-16	CFO		

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B. Sahyadri Farms Post Harvest Care Limited				
Sr. No.	Directors	Qualifications	Years of Experience as Director	Director of other Companies/Units
1	Vilas Shinde	Chairman & Managing Director, Studied	12	14 Companies

		Agricultural Engineering		
2	Azhar Tambuwala	Founder & Director, Studied Electronics Engineering	12 years. Previous experience of managing different companies.	4 Companies
3	Prashant Jaikrishna	Director, Business Head - Fruits and Vegetables		
4	Madan Shinde	Director, Head of Human Resources	13 years	16 Companies
5	Rahul Rai	Nominee Director		
6	Kshama Fernandes	Nominee Director, Bachelor's in Science and PhD in Management studies		
7	Rajesh Sinha	Independent Director		
8	Vandana Chamaria	Independent Director		
9	Om Prakash Valmiki Singh	Independent Director		

C. VAPCOL					
Sr. No.	Directors	Qualifications	Years of Experience as Director	Director of other Companies/Units	Representation
1	Bharat Kakasaheb Kakade	President & Managing Trustee at BAIF, Previous - Evaluator & Development Consultant, Advisor	16	5 Companies - VAPCOL, BAIF Agro and Bio Technology Pvt, Ltd., Manibhai Desai Management Training Centre, BAIF Institute for Sustainable Livelihood Development, BAIF Laboratories Ltd.	
2	Shrinivas Vasudeo Kulkarni	Group Vice President at BAIF	6 at VAPOL, 2 decades of experience in finance and Business planning. He provides regular		

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			guidance to shareholders.		
3	Babanbhai Jivabhai Deshamukh	Farmer	19	N/A	Vasundhara Vrix Vanwadi Jalsinchan Vikas Sahkari Mandali since 1985, a cooperative under VAPCOL.
4	Harichandra Dhavlu Bhusara	Farmer	14	N/A	Amrai Adivasi Mittra Phal Prakria Sansthan.
5	Chintamani Bapubhai Padvi	Farmer	10	N/A	Tutarkhed Vibhag Bagayati Sahkari Mandli, a co-operative in Valsad district of Gujarat.
6	Shashikant Narayan Bhusare	Farmer	5	N/A	Sangmeshwar Farmers Producer Co.Ltd., Peint.

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Special Annex: Mundus MAPP Thesis Report

Analysis of the sustainability of FPCs and their objective of minimising post-harvest losses through the lens of urban bias theory

Thesis Report (5913)

Ramani Davare

September 19, 2022

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Introduction

India has become a major player in agriculture in the global market with increased crop production, rising exports and trade although there has been a decline in the contribution of agriculture to the gross domestic product (GDP) of the country. Given the decline, the share of the population that is employed directly in agricultural activities is approximately 43% (World Bank, 2019). India's agricultural journey has been quite an interesting one going from being a complete agrarian economy, the history of indigo farmers, the green revolution to a post-independence decline in employment share as well as economic contribution.

After independence, in the 1960s, the need for a technological upliftment in agriculture was recognised. This was called as the Green Revolution and the goal was to make India self-sufficient in its capacity of grain production. Genetic engineering and biotechnology was used for the introduction of high yielding variety (HYV) seeds to improve the quality as well as quantity of production (Kapila, 2009). Many cash crops as well as vegetables, fruits and grains are now grown using these HYV seeds which are more immune to certain pests and as their name suggests give a higher yield per hectare. Considerable improvements in irrigation, pesticides and fertilizers, tractors, threshers and other agriculture related infrastructure were also made. The Green Revolution was followed by another for enhancing the milk production in India and making it self-sufficient. This White Revolution which started in 1970 has now made India the global leader of milk production by creating a national link between consumers and dairy farmers all over the country.

In the 1990s, liberalisation brought along multiple benefits to the economy, by bringing in foreign investment, technological important skill, enhancement as well as technical know-how and managerial skills. The liberalisation movement brought along a lot of structural reforms which were mainly focused on the industry, foreign trade, investment, banking as well as tax reforms, and there was no specific focus on agriculture. This led to a boost in the secondary as well as tertiary sector in the Indian economy, putting the primary sector at the backstage, but it indirectly also brought technological advancement for the primary sector.

Strengthening agriculture was important because of the large population dependent on it for employment as well as for obtaining food security. Indian agriculture has a significant place not just nationally but also internationally. The importance of Indian agriculture in the global markets and its massive share of production of crops like rice and wheat was highlighted after the Ukraine-Russia war where India had the potential to export wheat to many countries who

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were dependent on wheat exports from Ukraine and Russia but chose not to for its own population and economic stability. Events like this war, the pandemic from which most economies have not even begun recovering and the growing worsening impacts of climate change are drawing attention to the challenges of food security globally. In developing countries like India, these events leave greater impressions in rural areas which are primarily agriculture societies especially affecting small and marginal farmers. The neighbouring countries of Pakistan and Bangladesh are already afflicted with heatwaves, floods, heavy rainfall and other disastrous effects of climate change. India, too, had to deal with severe heatwaves in the summer which impacted yield and there was a shortage of grain.

The agricultural sector in the sub-continent has been undergoing many challenges – reduction in the farm size, declining productivity growth, increase in the costs of production and price volatility along with the looming effects of climate change. 80% of all farmers in the country are small and marginal farmers (FAO, 2023) and depend entirely on agriculture for their daily livelihood. The small holding nature of farms has become more prominent now compared to before. This makes them more vulnerable certainly to climatic factors and uncertainties regarding weather patterns but also to economic factors such as price volatility, loss of yield due to insufficient or inefficient infrastructure, unsatisfactory availability, and lines of credit, along with adequate information and access to markets making it difficult to salvage their losses. Farmers face a major challenge with credit sourcing and have to take loans with exorbitant interest rates making it difficult and at time impossible for them to repay. This is one of the leading causes of farmer suicides in the country with 17,000 suicide death between the years of 2018 and 2020 (Financial Express, 2022). There are many other reasons behind these unfortunate suicides, but 20.6% of them are due to bankruptcy or indebtedness (National Crime Records Bureau, 2015) shedding light upon the dire situation of farmers in the country.

India is the fifth largest economy in 2022 but the farmers who are the providers and the givers of the subcontinent are the fallen victims because development is not happening at the same pace as growth. The country is huge and uniformity in development is needed but also while catering to the needs of the differences in regions. All four regions of India vastly differ from one another with each receiving different amount of rainfall, and number of sunny days per year depending on which the type and quality of crops grown matters. The weather conditions of humidity, heat, atmospheric pressure, wind, quality of soil and water, elevation, and irrigation all determine which crops can be grown when as well as the production capacities for each. The number of rainy days in the north is 44.4 days on average annually while in the

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south is 88.8 days, (World Data, 2022) twice more than the north, hence one of the crops grown in the south is rice and more wheat production is in North India. The amount of rainfall received in the Southern regions is 1500 mm which is more than two times the rainfall the north receives of 653 mm (World Data, 2022). It is also important to note that agriculture is not a central subject and it falls under the state list, meaning the state governments have to power to decide matters regarding agriculture although the central government too has an important role. All of these factors make it impossible to have the same solution to these problems signifying the requirement of a more comprehensive approach based on what changes are necessary to be made to the system.

The government has, over the years, introduced some very important and necessary policies to support farmers and their agricultural practices. The presence of a large number of small holders and declining productivity are some of the challenges that need to be addressed. Policies like the minimum support price (MSP), subsidies for fertilisers, electricity and irrigation water, policy measures for trade of agricultural commodities such as export bans, export duties, export quotas and minimum export prices, and other policies which govern the marketing of agricultural goods like the Essential Commodities Act (ECA) and the Agricultural Produce Market Committee Acts (APMC) (OECD, 2018), have been an integral part of the primary sector in the country. Not all the policies have produced the desired impacts or have been what was needed at the time they were instituted.

Among these policies, the Department of Agriculture and Cooperation, Ministry of Agriculture of the Government of India (GOI) brought in farmer producer organisations (FPOs) which were registered in the Companies Act of 1956 under a special provision. Farmer cooperatives is not a novel concept and has been around ever since people learnt the advantages of cooperation for increased returns with reduced efforts. Farmer cooperatives or farmer collectives have many advantages to the farmers that are involved as they can practice collective investment in the process of planting, harvesting, as well as marketing to receive increased returns, giving them a better livelihood. Collectives enable the facilitation of access to information skills technology, financial resources and are beneficial for minimising risk as well as losses. When farmers come together in a group to promote and advocate their rights and needs, they hold a better chance of negotiation and have a higher bargaining power.

Under the government policy, farmers can also gain access to financial resources and support from the government schemes banks and other public as well as private organisations. Farmer

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Producer organisations can prove to be most beneficial when farmers who have some similarities such as the type of crops, land size, financial requirements, etc., come together to increase efficiency of production and minimise losses. Successful aggregation requires common interest groups as its basic unit.

In 2002, a special amendment was made to the Companies Act introducing the idea of a Farmer Producer Company (FPC). The terms farmer producer organisation and farmer producer company are often used interchangeably but the focus of this research is on FPCs. The main difference is that since an FPC is a registered company, its aim is to generate profit for its shareholders i.e., the farmers involved. The main focus of this research is going to be on the scope and impact of the Farmer Producer Company model in combination with the problems faced by farmers due to uncertainties of weather and worsening climate change.

2. Literature Review

In order to extensively understand what FPCs are and how they contribute to the agricultural sector in India, it is essential to review literature on their success and scope. This section has been categorised into further 3 subsections depending on the focus – 1) the evolution and status of farmer producer companies, 2) the challenges that are being faced by farmers and the agricultural community, and 3) absence or lack of credit and insurance infrastructure.

2.1 Evolution and Status of Farmer Producer Companies

The definition of a producer company according to the National Bank for Agriculture and Rural Development (NABARD) of India, is a hybrid between cooperative societies and private companies. Being a registered company, there are some requirements or conditions that an FPC has to fulfil. Profit generation is one of the main objectives of an FPC although not the only one, there can be multiple objectives depending on the type of farming activities its members are involved in (Deka et al, 2020). An FPO/FPC can have multiple advantages (SFAC, 2019) to its members such as reduction in cost of production or cultivation, aggregation of produce as well as transport cost therefore increasing the net value to be accrued, economies of scale, access to information, training about good agricultural practices, minimisation of post-harvest losses, minimisation of adverse effects of price volatility along with avoidance of price fluctuations, access to institutional credit and increased bargaining power.

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An FPC can have individuals, groups, associations as its members and in this sense, it is different from a cooperative. An FPC needs to have a board of directors, a chief executive officer (CEO) or a general manager as well as a management or administration (Deka et al., 2020). Different types of FPCs are present in the country based on their objectives or type of farming activities with the most being in agriculture (Mukherjee et al, 2018).

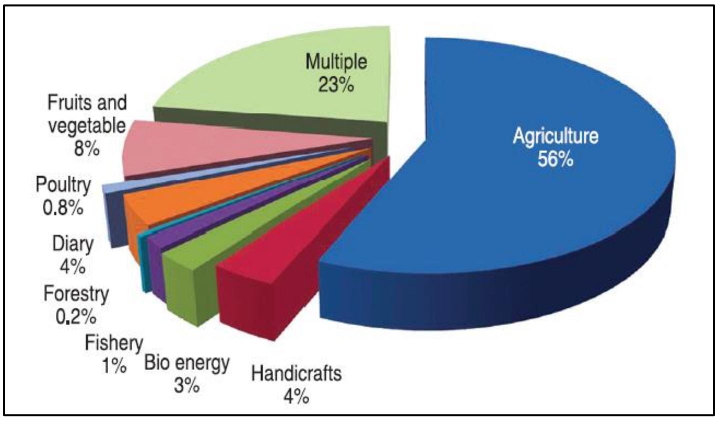

Figure 1: Types and areas of business of FPCs in India. Source: Mukherjee et al (2018).

The process of formation involves identification of farmer interest groups (FIGs) generally done by NABARD or the Small Farmers' Agribusiness Consortium (SFAC) which is an autonomous organisation receiving support from the government of India for conducting these activities (GOI, 2020). The management or executive committee of FPCs is comprised of the representatives of these farmer interest groups. FPCs can exercise full autonomy over their activities and have very minimal government control. Since FPCs have evolved from cooperative societies or collectives, one of the foundational principles is mutual assistance. The activities of an FPC stem from mutual cooperation and bear in mind the mutual cooperation of all its members (Tiwari, 2021).

Cluster Based Business Organisation (CBBOs) assist in identifying clusters to form and promote FPOs/FPCs (GOI, 2020). Some of their important responsibilities and tasks to achieve this, include providing support with community mobilization, registration process of FPOs/FPCs, training for farmer groups, encouraging social cohesion among the members of various organisations and groups, accessing credit and other grants provided by the government, implementation, communication, and financial management among other things.

2.1.2 Challenges faced by Farmer Producer Companies

Most studies (Bhawar et al, 2020; Desai & Joshi, 2014; Infante, 2019, & Mp & Mathur, 2018) are about farmer producer organisations which may or may not be using the terms FPO and

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FPC interchangeably. This makes it a tad difficult to isolate the analysis and understanding of FPCs although some of the challenges being faced by producer companies and other collectives are almost the same or quite similar on many fronts.

A problem that FPOs face is access to markets. Farmers and FPOs have thus far been in a typical chicken-and-egg position due to a lack of effective market connection and support; without this, they have been reticent to engage in the activity of aggregation, which entails significant market-based risks (NAFPO, 2022). Organised players and institutional buyers have been wary of entering into agreements with FPOs that bypass the mandi because they haven't been able to find powerful FPOs that can guarantee the necessary quality and quantity as well as other terms that a network of market players in the mandi can provide.

The Government has announced a goal for the setting up of 10,000 FPOs/FPCs by the year 2024 (Nirmal, 2020) of which only 5,000 have been established. A crucial point to note here would be whether these 5,000 are successfully functioning or just look good as a number on paper. FPCs are facing multiple challenges and are facing a struggle to survive because of lack of policy support and support for managing the company. Although FPCs have complete autonomy, this is not the case in reality since there is a lot of intervention from the governments, third-parties and other actors (Tiwari, 2021) resulting in what the introduction of FPCs was meant to prevent in the first place. The nature of FPCs is expected to be quite formal and due to this they face problems with efficiency in their management, inclusion of shareholders, voting rights, dispute resolution, taxation, commercialisation, and other duties which are required from a private company.

It is reasonable to argue that the corporatization of agriculture in India has been a bipolar process, with enterprises either growing into self-sufficiency or being utterly driven out of business.

Simultaneously, we know that collective action in the agricultural sector can benefit from economies of scale (Mp & Mathur, 2018) and have the capacity of providing several advantages to farmers such as better access to inputs, better access to markets, reduced transaction costs, increased bargaining power and acquisition of a collective reputation, serving as a guarantee in the marketing of their products (Naziri et al, 2014). Sahyadri Farmer Producer Company in Nasik, Maharashtra is an example of the most successful FPC that has built a value chain for small and marginal farmers (Likhi, 2019). It sells grapes domestically through 13 retail stores as well as exporting them to the European Union, Russia, and the United Arab

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Emirates. In addition to gathering, grading, sorting, and packing the fruit, it offers technical assistance to 6,600 farmers.

Studies like the research by Kumar et al (2015) about the role of cooperatives in improving the livelihood of farmers tend to focus on analysing the effects of collective action on facilitating small farmers and extending their access to markets. Small farms play an important role in the path to rural and agricultural development, and poverty reduction in a sustainable manner.

Therefore, the idea of FPCs and their sustainability needs to be explored further for a comprehensive understanding of whether or not this model is or can be efficient and successful.

2.2 Challenges faced by farmers and the agricultural community

To successfully comprehend the capacity of FPCs to make an impact on the agricultural sector in India, it is necessary to have a clear handle on the different types and level of challenges that farmers are facing. According to the 77th round of the NSS Farmers' Survey conducted in 2019 (MOSPI, 2021), specific challenges and issues have been identified.

Land rights and tenancy issues

According to the National Commission on Enterprises for the Unorganised Sector, there is compelling evidence that the prospects of the poor are significantly improved by the relatively effective execution of even a small package of land reforms. Small and marginal farmers possess and cultivate some land, but access to resources is restricted by this. Therefore, for small holding farmers, tenancy security is crucial.

Land connections are incredibly complex, and this intricacy has greatly added to the difficulties faced by actual growers. Tribal farmers, renters, and unregistered cultivators all have trouble obtaining the institutional financing and other resources that are accessible to farmers with land titles. In order to guarantee that they have access to institutional loans and other inputs, it is a priority to record and register genuine cultivators, including renters and women farmers, and to give them passbooks. The leasing market has to be opened up as part of the changes, and renters must be given some level of protection.

As a result, marginal and small farmers will have access to land for farming. In the agency regions, tribal members' land rights must be safeguarded. There is a lot of room for additional land redistribution, especially when cultivable lands and waste areas are taken into consideration. All assignees should get complementary farming inputs (first land development, input mini-kits, credit, etc.), and all future land assignments should be made in women's names.

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Credit availability and indebtedness

Credit is necessary for small holdings for both consumption and investment. One of the factors contributing to these farmers' rising debt is increased indebtedness. Small and marginal farmers do not have more debt overall than large farms. However, small and marginal farmers are less indebted to formal institutional sources than large farmers, while the opposite is true for informal sources. Sub-marginal and marginal farmers have the highest levels of reliance on lenders and the percentage of formal sources rises as a function of land area (Dev, 2012) but in 2021, more loans have been taken from banks, cooperative societies and government sources then agricultural or professional money lenders (MOSPI, 2021).

According to the NSS Farmers' Survey, about a half, 50.2%, of agricultural households find themselves in debt with average amount of outstanding loan per agricultural household to be 74,121 rupees. It is interesting to note that only 57.5% of these outstanding loans were borrowed for agricultural purposes. The rest could be for medical reasons, weddings, or even to pay back previous loans.

The problem of indebtedness is quite a serious one with, as previously mentioned, it being one of the main reasons behind farmer suicides in the country.

Level of education and skills

Enhancing farming methods, investments, and production requires education and competence. According to the size of the farm, The literacy rates and mean years of schooling for unorganised, independent agricultural employees. It demonstrates that small-scale farmers have lower literacy rates and mean years of schooling than medium- and large-scale farms. For instance, the literacy rates for men and women among marginal farmers were 62.5% and 31.2%, compared to 72.9% and 39% for medium and big farmers (MOSPI, 2021), respectively. Similar to this, male marginal farmers had 3.9 mean years of schooling, compared to 5.3 for medium and big farms.

It is important for small holding farmers to have a reasonable level of awareness regarding information on agriculture. The low level of farmers' education limits public dissemination of knowledge. The NSS farmers' Survey clearly shows that awareness about bio-fertilizers, minimum support prices and WTO is associated with education levels which are lower for marginal and small farmers.

Climate change

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As discussed previously, climate change is predicted to have a negative influence on their living situations. Farmers, fishermen, and those who rely on the forest are already at risk of being vulnerable and facing food insecurity. A rising number of rural populations, especially those in already vulnerable ecosystems, face an imminent risk of greater crop failure, animal loss, and decreased availability of items from the sea, aquaculture, and forests (MOSPI, 2021). They would negatively impact small farmers' livelihoods and food security in general. Concentration on small farms and farmers is a must, for policies to both be sensitive to climate change and supportive of the poor.

For small farmers, agricultural adaptation and mitigation strategies may be advantageous. Long-term adaption tactics might benefit from having coping mechanisms. Small farmers have a huge opportunity to store carbon in the soil if the right legislative changes are made (Dev, 2012). In order to adapt to and mitigate climate change, collective action is crucial. Institutions for collective action are crucial for transferring technology in agriculture and resource management to small farmers and communities who depend on such resources.

Water and irrigation

The most important input in agriculture is water. Improving water management and irrigation technology is essential for boosting rural regions' standard of living. Urbanization, the production of drinking water, and industrialisation must compete for water with agriculture. As was already established, small farmers rely more on groundwater than large farms who have better access to canal water. In several parts of India, the groundwater table is dropping. Small and marginal farmers will have more water-related issues in the future. Water management will thus be essential for these farms.

Diversification

India has observed a diversification in terms of the food that is now being consumed by the majority of the population. This has been the result of the growing middle class due to rapid globalisation and urbanisation in the country. The demand of the food grains and crops consumed has diversified and there is increased demand for non-foodgrains produce such as fruits and vegetables. The biggest growth in per capita consumption is in fruits and vegetables, trailed by edible oils (Rao et al, 2004). The expanding middle class has developed a taste for high-value goods, which is seen in the rising demand for high-value processed goods. In India, the spending elasticity for food products other than grain is still relatively high. In rural regions,

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it is three times higher than grains, while in urban areas, it is more than 10 times higher (Dev, 2012).

One of the key strategies for boosting agricultural growth is diversification into high-value crops and related activities. Since diversification entails a significant level of risk, infrastructure and marketing support are essential. Diversification should also be encouraged by price policy. With diversification, small and marginal farmers can increase their revenues. However, diversification poses concerns since the support systems are geared primarily toward food grains. To aid smallholder farmers, diversification support programs are required.

Role of women

The involvement of women has, over the years, been increasing and have an important role in agricultural activities. The women to men ratio agricultural labourers/ cultivators has increased. The participation of women in agriculture and other related activities is considerable with participation rate being 41.8% for rural females which is substantially larger than the workforce participation of urban females at 35.8% (Patel & Sethi, 2021).

Women partake in all the activities of the agricultural production system from pre-harvest, maintenance of the crop during harvest to post-harvest and marketing. This includes tasks like preparing and cleaning the land for harvest, selecting the seeds, seed production, sowing, application of manure, fertilizer, and pesticides, weeding and de-weeding, transplanting, threshing, winnowing, and harvesting, among many other activities, as well as animal husbandry and dairy farming, processing fish, gathering non-timber forest products (NTFPs), backyard poultry, and gathering fuel wood, fodder, and other items for their household and family needs. 80 percent of all economically active women work in the primary and allied sector for their major source of income, of which 48 percent are self-employed farmers and 33 percent are working as agricultural labourers (MOSPI, 2021).

Regardless of the fact that they are crucial, women continue to be denied access to property rights and other forms of economic empowerment. Women should be recognized as farmers and be able to access loans, inputs, and marketing channels if their land rights are protected, infrastructural assistance for women farmers is improved, and current regulations are legally supported. Although in recent years women have been receiving recognition and support from the government as one of the GOI's top priorities has been the 'Gender Mainstreaming in Agriculture'.

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Empowerment of women is, unfortunately, not in the scope of this study and needs it separate research to explore the role of FPCs and women in agriculture.

Social Groups

Compared to medium and big farmers, the percentage of socially disadvantaged groups like Scheduled Castes (SCs) and Scheduled Tribes (STs) is greater among marginal and small farmers. In comparison to 7.8% of medium and big farmers, over 22% of semi-marginal and marginal farmers come from SCs, and 15.6% of small farmers and 14.9% of medium and large farms are ST members (Dev, 2012). STs have a better distribution of land ownership than SCs.

The percentage share of land owned by STs is 14.1% as compared to SCs whose percentage share of land owned is 10.2%. Among Other Backward Castes (OBCs), they own 47.2% of land (MOSPI, 2021). (One has to note the OBCs are higher than the STs and SCs in the social groups.) However, the land owned by STs is most likely of the lowest quality. Farmers' social identities are thought to influence their access to economic resources and results. The average area owned per household is although highest for STs which is 0.586 hectares. More over half of SC holdings are smaller than a half hectare.

Socially disadvantaged classes have less access to knowledge, marketing, credit, publicly funded inputs, and extension services—even after taking into consideration the quantity and quality of land they possess. This demonstrates that people may experience prejudice in the provision of governmental services as well as in the market.

All of these factors are crucial and lead to increased risk and make farmers vulnerable but due to the scope of this study the main focus would be the challenges of credit, climate change and could also include diversification since due to increased globalisation this has been one of the most significant and visible patterns in the country.

2.3 Accessibility of Credit and Insurance Infrastructure

There have been several efforts by the government of India to aid and support the initiatives of farmers and specifically for the formation and promotion of FPOs/FPCs. In 2015, farmer producer companies received the priority status for lending from the Reserve Bank of India (RBI) to help them in seeking funds. FPCs/FPOs received support from the government in way of being tax exempted for 5 years from the financial year 2018-19 (Kakati & Roy, 2021). The "Producer Organization Development Fund" was established in 2011 by NABARD, India's

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premier bank for agricultural and rural development, with an initial capital of $500 million for the promotion and establishment of new producer organizations (NABARD, 2015).

Dairy cooperatives and dairy farming has been quite profitable also considering India is the world leader in milk production but agriculture FPCs cannot be compared with the dairy model nor can dairy cooperatives be used to support the argument of successful FPOs/FPCs.

Kakati & Roy (2021) after analysing the financial performance of FPCs which had access and received the necessary credit support found their financial performance to be subpar. They found the number of loss-making FPCs to be increasing hence even with the establishment of 5,000 FPCs, the question remains of how many would be able to survive.

Despite the country's tremendous development in the number of FPOs, these organizations nonetheless confront a number of difficulties in administration, supply, and timely financial support. Making credit available is not under scrutiny, but the accessibility and how it is translated into the profitability of FPCs and improvement of farmers' livelihoods is what is more important. Funding is available, but not accessible, for promotion, development and formation which is important but there needs to be funding for the successful functioning of the FPCs.

Obtaining credit has been one of the major difficulties FPOs have encountered. Despite the Public Sector Institutions having a variety of financing options accessible for FPOs many FPOs lack the knowledge necessary to access the programs for credit owing to inadequate legislative compliance, lack of knowledge of the programs, and accounting and personnel limitations. They need to support of bodies like CBBOs to assist them with accessing credit because of how complicated the process is.

With the effects of climate change becoming a reality, farmers, especially small farmers desperately need insurance against the risks posed by these dangers.

Farmers need assistance in tackling these issues and they can only rely on the government for solutions and support. With the country now in the top 5 economies in the world, farmers expect for their own progress as the nation proudly prospers and rightfully so.

3. Research Question

Upon reviewing existing literature extensively, 2 main gaps and problems were identified which need further investigation and analysis. Based on the subcategories of the challenges to

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farmers, status of FPCs and credit infrastructure in India, it is necessary for a prognosis of the FPC model and their future relevance.

3.1 Is the FPC model a flawed concept?

As we understood the model of a farmer producer company, there are a number of requirements analogous to that of a corporate environment. This is reasonable when the treatment given to a private company is what they should receive. There is immense government support provided to the secondary and tertiary sectors which is being translated into the development of these sectors in the country. Given that there are rigorous company regulations that need to be fulfilled, the necessity of FPCs needs to be reassessed. A simple example of this would be that no provision is mentioned in the amendment of the Companies Act to cover the business risks of an FPC.

The question then arises that if there are such strict regulations then are FPC not benefitting from a proper credit policy that is in place for start-ups and other non-agricultural businesses? One of the reasons for answering whether this model is a flawed concept could be the definition of a producer company itself. As defined by NABARD it is a hybrid between a cooperative and a private company which could be one of the underlying causes in trying to develop a more holistic strategy/approach in achieving the desired results. This would pertain to the evaluation of FPCs and eventually to recommend improvements to the system along with restarting the policy process with setting new agendas.

FPCs are struggling to survive due to multiple challenges because of corporatisation as well as other issues such as credit and there are more loss making FPCs every year. Analysing the sustainability and need for the presence of FPCs in such a case, becomes even more relevant.

It is true that a farmer producer company (FPC) is one of the best options but the model needs to be reassessed, and there is a need for enabling policies. Most of the FPO/FPC formation, development, and promotion work is done by a handful of organisations like the NABARD, SFAC, Bill and Melinda Gates Foundation, and some major corporate networks of TATA and other similar companies (NAFPO, 2022). According to Bhosale (2018), with the presence of FPCs, agriculture should be understood and should be treated as a business since the goal of a company is to reap benefits in terms of profits, hence the need for redesigning policies as well as credit sources/markets for these FPCs to be able to realise prices and profits.

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3.2 How can we achieve the minimisation of post-harvest losses?

The FPC model cannot work without considering the challenges that farmers must deal with. Naturally, it is impossible to control the weather and how it would affect the quality and quantity of produce causing immense uncertainties but it is certainly possible to control the produce once it has been harvested. Clearly, it has been identified that farmers tend to make losses in the post-harvest stage because of inefficient storage and processing (NAFPO, 2022). In fact, most of the work begins once the produce has been harvested and this stage is valuable for deciding the economic worth of the crop.

Strengthening and upgrading facilities important in the post-harvest processes of threshing and cleaning, drying, storage and warehousing, milling and processing, transport and supply chain, as well as marketing would be a catalyst in improving farmer livelihoods and improving the state of the primary sector. It holds the potential to safeguard against the effects of domestic as well as global price volatility. Here arises a further question of what would help to attain price realisation for FPCs to reap profits? This could be achieved by a number of ways of reduced factor costs, type and quality of inputs, improved warehousing, processing, or marketing, or a combination of all. The analysis conducted in this research can help in discovering this further.

Installing systems for the minimisation of post-harvest losses would bring overall rural development with employment in non-farm activities along with its accompanied spill-over effects.

The absence of adequate credit facilities and insurance infrastructure can be linked with both the research questions. Insurance policies – price based as well as weather based (due to the harsher impacts of climate change that are being observed) are key to the well-rounded development of the agricultural sector and for farmers to receive the support that they deserve.

4. Theoretical Concepts and Methodology

Addressing the issues of the rural areas is important due to the impression of being left behind in the development process especially given the growth of the urbanization phase. Focusing on agricultural development is necessary for an integrated rural development which needs to be kept in mind while designing and implementing policies aimed at uplifting the rural population.

Lipton (1980) categorized the rural as a separate class and compares it to the urban class although he has mentioned the differences within the rural and urban. A rural-urban dichotomy exists due to the socio-economic inequality present among the rural and urban populations as

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those that are well to do are only a fraction whereas those who are not are the majority and hence the continuing deepening and worsening inequalities.

This study will try to analyse the problem of underperforming FPCs, inadequate credit and insurance using the urban bias theory by Lipton (1980). It would be a good starting point to understand the path of agricultural and rural development. There is a huge rural urban divide present in the Indian society (Todaro & Smith, 2015) and this lens can be used for understanding the questions posed in the paper.

The research aims at drawing some conclusions on the sustainability of FPCs and evaluate their relevance in trying to minimise post-harvest losses. Testing these conclusions by conversating with policy and research experts from the field in India would be the next step. These would work like feedbacks and upon receiving them, the final analysis and conclusions would be drawn.

5. Timeline

Here is the projection of a tentative timeline for the completion of this research.

Further Literature Review	6 to 8 weeks
Qualitative Analysis	6 to 8 weeks
Testing of theories with policy experts and researchers	4 to 6 weeks; around February or March
Final Analysis and Development of Recommendations	3 to 4 weeks
Reviewing and concluding the research	3 to 4 weeks
Submission of the final draft	July 31, 2022

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