New Cooperativism

A Study of Emerging Producer Organisations in India

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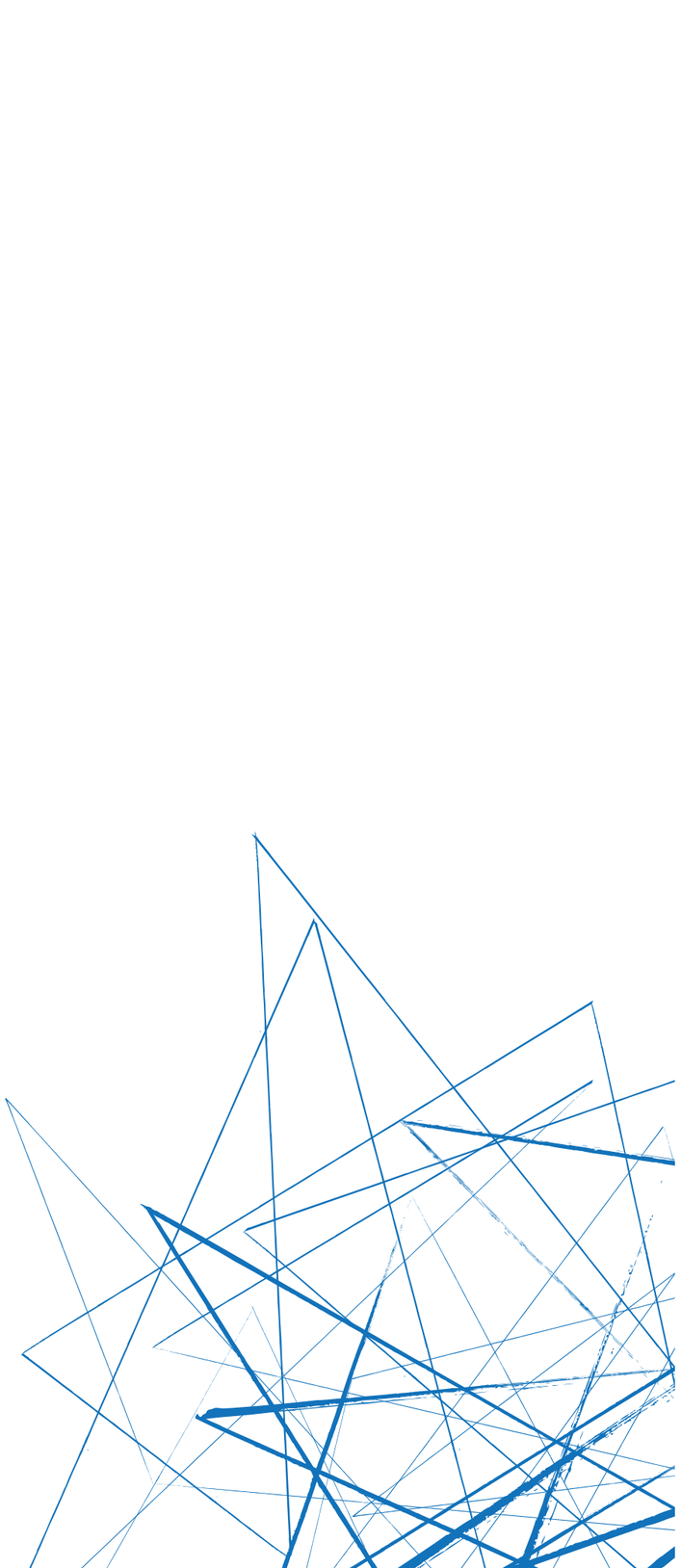

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Mathew Abraham

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Foreword

It has been a privilege to do this PhD at the Department of International Economics and Management (INT), Copenhagen Business School and I would like to thank the 'Asia Research Centre' and INT for giving me this opportunity. I thank Anthony D'Costa, who apart from being my supervisor, has also been a great inspiration. Anthony has been very flexible with his time and always accommodating. I would also like to thank Peter Lund Thomson for his supervision and firm guidance during the writing of this thesis. Without his help I would not have been able to come this far.

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Abstract

A majority of the world's agricultural production takes place on small farms (less than 2 hectares). India has one of the smallest average farm sizes with over 68 per cent of its farms being marginal in size (below 1 hectare). Small farm production is constrained by challenges of accessing lumpy inputs of management and asset specific machinery, markets, credit, extension services and technology. Collective actions in the form of cooperatives in many parts of the world have played a vital role in overcoming these challenges and enabling agricultural growth. However, cooperatives in India have suffered from low participation, over-dependence on state assistance, poor management, political interference in their functioning and poor benefits to intended target groups. In recent years Producer Organisational Formats (POFs) such as Producer Companies (PCs), Joint Liability Groups (JLGs) and Farmers Federations (FFs) have emerged in an attempt to address some of these challenges faced by small producers. Although policy makers recognize this new cooperativism to have the potential to address small producer disadvantages, progress has been little in supporting or promoting POFs in India due to limited understanding of their functioning, impact and potential. This knowledge gap motivated this research. Using a conceptual framework grounded in institutional and collective action theories, this thesis examines (a) how POFs are structured on organisational, social and economic terms and (b) how resources are allocated and incentives aligned within these institutions. The thesis finds that the examined POFs are small, region-specific collective actions, organised with the help of non-governmental organisations (NGOs) supported by the state. POFs relied on networks of social relationships, trust, norms and sometimes religious ideology to prevent collective action problems that hindered effective organisation. In economic terms, POFs helped improve market access and increased marketable agricultural surplus at the household level; yet, this surplus was not sufficient for households with marginal sized land to solely depend on farming as a livelihood activity. As for resource allocation and incentive alignment within POFs, the even distribution of collective goods to all members was a strong material incentive for participation. Social capital in the form of networks, norms and trust among members also incentivised participation. In sum the study finds that POFs have the potential to improve access to markets, credit, inputs and research and extension services, the lack of which has

hindered small and marginal producer viability. In some cases social disadvantages of access arising from gender and caste were addressed through these organisations.

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Chapter I: Introduction

A majority of the world's agricultural production takes place on small farms (less than 2 hectares in size) with over 500 million small farms cultivated by two billion of the world's population (Hazell et al, 2010). Despite recurring predictions that small farms will soon disappear through consolidation, they have persisted, and in many cases have increased in number (ibid). The size of farms and their productivity have been the topic for debate in studies of rural development and economics for a long time. Countering the assumption that small farms are unviable, economists in the 1960's and 70's have argued that crop productivity per unit of land declined with the increase in farm size (Bardhan, 1973; Mazumdar, 1965; A. Sen, 1962), leading to the emergence of the 'small farm paradigm' which entails an inverse relationship between farm-size and productivity. These studies conclude that small farms have an advantage over large farms in per unit productivity due to higher labour utilization (i.e. using family labour) and higher utilization of inputs (i.e. intensive farming)[1].

From the late 1970's onwards, this inverse farm-size productivity paradigm was challenged. Some research has showed that there is no clear relationship between land size and productivity (Benjamin, 1995; Bhalla & Roy, 1988; Eastwood, Lipton, & Newell, 2010; Feder, 1985), while other studies (Chand et al, 2011; Gaurav and Mishra, 2011, Gandhi and Koshy, 2006) have indicated that per capita returns are still higher on small farms, yet unobserved heterogeneities from climatic variations, fertility conditions, access to resources and quality of management greatly influences productivity. Johnson and Ruttan (1994) have clarified the advantages and disadvantages of small farms with respect to two forms of economy of scale relations - the internal and external economies of scale. They state that internal economies of scale are size relations associated with the actual production processes, such as labour input, monitoring and local knowledge. These inputs are scale neutral, and in the pressure of high monitoring costs (to large farms) small farms are not at a

[1] Prominent studies on the topic admitted that the inverse relationship was a result of imperfect land and labour markets (Bardhan, 1973; A. Sen, 1966). Imperfections in the labour market meant that surplus labour at the household level was available as opportunity costs (off-farm wages minus search and travel costs) were higher than on-farm wages. Imperfect land markets mean that lease markets to help access more land for farming had adverse lease conditions for farmers and that they had to effectively utilise their current endowment. This was considered a socially optimal outcome considering land scarcity and labour surplus on small farms (S.Singh, 2011).

disadvantage, and in many cases may have an advantage. The external economies of scale, on the other hand, consider factors such as access to markets, credit and extension services, technology and lumpy inputs like management and asset specific machinery. In these cases, small family farms are at a disadvantage due to problems of capital market imperfections (low access to credit), access to resources and low market power.

In India, agriculture is the single largest economic sector providing employment to more than 50 per cent of the country's workforce (GOI, 2011). Landholding sizes[2] are also among the smallest in the world with an average farm size of 1.10 hectares (Chand et al. 2011). The Agricultural Census of India (2009) [3] data reveals that over 67 per cent of landholdings are marginal (less than 1 hectare) in size. The Tendulkar Committee (2011-12) which was set up by the Government of India to constitute a methodology for estimation of poverty states that the threshold landholding required for households to create a surplus to stay above the poverty line is 0.8 hectares (2 acres)[4]. This calls into question the viability of a majority of farming households in India. The census also shows that this group cultivated only 22.4 per cent of operational landholdings. Small farms (with sizes between 1-2 hectares of land) make up 17 percent of landholdings cultivating 22.8 per cent of operational landholdings in India[5]. Organisations coordinating collective action to address issues of external economies of scale are therefore important to bring about production growth, reduced environmental externalities[6], agricultural research and extension, and improve small and marginal farmers' access to resources such as credit and inputs (MOF, 2007).

In many countries, small producers undertook collective action to remedy the disadvantages of external economies of scale relationships (Devaux et al., 2009;

[2] This is the size of land owned or possessed by a particular household for farming activities

[3] http://agcensus.nic.in/document/agcensus2010/completereport.pdf

[4] This is based on the calculation that per capita income at the household from agriculture is not sufficient for the family to rely on agriculture alone. This was calculated by subtracting gross value of input and labour used in agricultural production from the gross value of agriculture (crops + livestock) and dividing it by the number of members in a household (Chand et al., 2011).

[5] The big concern is that the number of small and marginal farms have been growing. According to the National Bank for Agriculture and Rural Development (NABARD), 10 million small and marginal farmers were added to the agricultural sector in India every five years[5] (Bakshi, 2012).

[6] Intensive farming to maximise returns has led to the degradation of natural resources on a large scale. According to the National Bureau of Soil Survey and Land Use Planning (NBSS & LUP), 146.82 million hectares of land (44% of geographical area) in India is affected by land degradation. The breakup of the nature of degradation: water erosion 93.68 million ha., wind erosion 9.48 million ha., water logging/flooding 14.30 million ha., salinity/alkalinity 5.94 million ha., soil acidity 16.04 million ha. and other problems of conditions 7.38 million ha.

Kherallahet al., 2002; Stockbridge et al., 2003). Collective actions are voluntary actions taken by a group of individuals to achieve a common goal, and cooperatives are the most common form of collective action in the agricultural sector. Cooperatives, according to the International Cooperative Alliance (ICA), are "autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspiration through a jointly-owned and democratically-controlled enterprise" [7]. In countries like Japan, South Korea and Taiwan that were founded upon small farms[8], cooperatives were set up, and factors that put small farms at a disadvantage were neutralised through state provisioned extension services, key inputs, irrigation and market intervention operations (Huang, 2006; Kajita, 1965; Lin, 2006). In many African countries and in India, cooperatives were less successful. They often had limited impact due to poor organisation and management, political interference in their functioning, financial irregularities and corruption within their organisations (Akwabi-Ameyaw, 1997; Attwood, 1982, 1987; Baviskar, 1987; Holloway et al., 2000; Lalvani, 2008). According to the Press Information Bureau of the Government of India:

> The cooperatives have been operating in various areas of the economy such as credit, production, processing, marketing, input distribution, housing, dairying and textiles. In some of the areas of their activities like dairying, urban banking and housing, sugar and handlooms, the cooperatives have achieved success to an extent but there are larger areas where they have not been so successful. The failure of cooperatives in the country is mainly attributable to: dormant membership and lack of active participation of members in the management of cooperatives. Mounting over dues in cooperative credit institution, lack of mobilisation of internal resources and over-dependence on Government assistance, lack of professional management, bureaucratic control and interference in the management, political interference and over-politicisation have proved harmful to their growth. Predominance of vested interests resulting in non-percolation of benefits to a common member, particularly to the class of persons for whom such cooperatives were basically formed, has also retarded the development of cooperatives[9].

Along with cooperatives, community-centred programmes based on collective action such as Self Help Groups (SHGs) providing microcredit, extension services and managing natural resources through watershed management programs have also met with limited success (Ghosh, 2013; Marothia, 2002). The challenges faced by these initiatives have been similar to the ones faced by the cooperatives in India. Poor member participation, bureaucratic interference in management and lack of resource

[7] http://ica.coop/
[8] The average size of landholdings in Japan and Korea in the 21st century were 1.2 acres and 1 acre respectively (S. Fan & Chan-Kang, 2003) and less than 1 acres in Taiwan (Lam, 2006).
[9] http://pib.nic.in/feature/fe0299/f1202992.html)

mobilisation have been identified as inhibiting factors (Abraham & Platteau, 2001; Ghosh, 2013; Jodha, 2002; Kornginnaya, 2013; Mader, 2013; Marothia, 2002). Some scholars have also pointed at hierarchical social structures based on strong caste identities in India as an additional factor for limiting the impact of these initiatives and collective action in general (Bandyopadhyay & von Eschen, 1988; Bardhan, 1993, 1996; Platteau, 2000; Wade, 1994). Clearly, the challenges of organisations coordinating collective action such as cooperatives and community-centred programmes in India have been structural (e.g. poor governance, poor management, political and bureaucratic interference, social structures) lack of incentives (e.g. dormant membership and lack of active participation) and poor resource allocation (e.g. non-percolation of benefits to members, especially to target groups it aims to empower).

Collective action is a complex phenomenon, and studies have shown that initiatives that are successful in one context may not succeed in a similar context elsewhere (Ostrom, 1998a). Scholars, therefore, emphasise the need to study collective action and the organisations coordinating it within the context of how they are initiated and governed, how various factors influence the interaction between involved actors and how these joint actions are incentivised (Agrawal, 2001a; Marwell & Oliver, 1993; Ostrom, 2000a, 2003). Although the understanding of factors influencing the success or failure of collective action is still limited due to the specificity of context (Ostrom, 2003), empirical research on the management of Common Pool Resources (CPR) in India (e.g. Agrawal, 2001; Wade, 1988) and around the world (e.g. Baland & Platteau, 1996; Ostrom, 1990; Poteete & Ostrom, 2008) has provided indicators of organisational, social and economic factors and conditions that could foster or inhibit collective action. In this way, any study of collective action needs to be conceptualised and understood within the context of its purpose of organisation, social influences, benefits it brings its members and specific outcomes and impacts (Meinzen-Dick et al., 2004).

India is a country of large variations in economic and social development, and these variations cut across regions and are greatly influenced by its geography, economic history and institutions (Tomlinson, 1993). One marked regional difference is the performance of the South Indian states to the rest of the country. In terms of per capita income growth, income distribution and instances of poverty reduction, the

South Indian states have fared much better than the North Indian states (A. Banerjee & Iyer, 2005; Jayaraj & Subramanian, 2005; Narayana & Mahadevan, 2011; A Subramanian, 2008). Jayaraj and Subramanian (2005), using an index of generalised deprivation[10], conclude that only 6 per cent of the districts in South India were considered highly deprived of basic amenities compared to 72 per cent of the districts in the northern regions of the country. Paradoxically, the South Indian states were also where the impact of agrarian distress in the past decade resulted in cases of farmer suicides. Between 1995 and 2012, there were 282,400 reported cases of suicides by farmers due to agrarian distress, and 39.2 per cent of these cases were from Andhra Pradesh, Tamil Nadu, Kerala and Karnataka[11]. According to scholars including Mohan Rao (2004), Reddy and Mishra (2009), the reasons for these suicides were indebtedness, crop failure and lower commodity prices in the years that followed the liberalisation of the Indian economy in 1991. Hence, the variation of context across India in which agricultural production takes place needs to be considered when studying collective action.

Despite challenges in community-based collective action and cooperatives, academic and government plans and reports (GOI, 2005, 2008, 2013; MoF, 2007; Agarwal, 2010; Birthal et al., 2005; Patibandla & Sastry, 2004; Singh, 2008; Sudha & Gulati, 2008), along with studies on the agrarian economy at a global level (Hazell, 2005; Hazell et al., 2010; Markelova et al., 2009; Poulton et al., 2010) have highlighted the importance and necessity to develop collective producer organisations to address small producer disadvantages. In the past decade, the agricultural sector in India has witnessed the emergence of different forms of producer organisations. Producer Organisational Formats or POFs such as Producer Companies, Joint Liability Groups and Farmers Federations have been mentioned in academic literature (Rupnawar & Kharat, 2014; S. Singh, 2008; Trebbin & Hassler, 2012) and government reports (Government of India, 2013a, 2013b) to have the scope to improve credit, input and technology access, improve bargaining power in commodity markets and reduce social discrimination based on caste and gender (MoF, 2007; Reddy & Mishra, 2009; Sharma, 2011) among small and marginal agriucltural producers. The 11th five year

[10]The index considers six basic facilities of public transport, tap water, health care, electricity, metaled roads and clean cooking fuel to define the relative levels of deprivation in various districts in India.

[11] Source: National Crime Records Bureau, Ministry of Home Affairs, Government of India. Compiled from the "Accidental Deaths and Suicides in India" report of various years.

plan of the Government of India (2007-2012) included a policy focus to support producer organisations in the agriculture sector. The 12th plan (2013-17), however, admitted that little progress was made in supporting or promoting this new cooperativism due to limited understanding of their functioning, impact and potential. Due to this, support measures such as subsidies to promote producer organisations were not executed, and schemes to promote them widely in the agricultural sector were absent (GOI, 2013; pp. 21).

The importance of new cooperativism in the agricultural sector and the limited understanding of how they are stuctured, how resources and services are allocated (credit, inputs, information and technonogy, market access) and how participation has been incentivised has been the main motivating factor this research on Producer Organisational Formats in India. Understanding factors that influence collective action is crucial to helping producer organisations address challenges that have plagued collective initiatives such as cooperatives and community-centred programmes. How successful coordination can help address issues of external economies that put small and marginal producers at a disadvantage and its limitations also needs to be explored. At a policy level, increased understanding of how collective actions are structured and coordinated may help better support and promote such initiatives more widely in the agricultural sector in India.

Producer Companies, Joint Liability Groups and Farmers Federations were the three Producer Organisational Formats (POFs) assessed in this study. Similarities found among these POFs include the fact that they were voluntarily organised, small and marginal producer collective actions attempting to address the problems of market access and external economies of scale affecting small and marginal production. Many of these producer organisations were supported by Non-Governmental Organisations (NGO) which helped in the coordination of collective action. They differed from each other in terms of the goods or the combination of goods (credit, inputs, marketing, extension services) they accessed and provided to their members. One crucial difference identified among these POFs was that some were credit-providing producer organisations while others were not. In credit-providing POFs, the major focus was on providing agricultural loans/credit to their members, while the other formats mainly provided other inputs such as seeds, fertilisers and pesticides, marketing services and extension services. Therefore, this study chose to

compare these credit and non-credit producer organisational formats in order to recognize what this difference might play in influencing collective action in POFs. Due to large disparities in economic and social development across regions, as well as an increased manifestation of agrarian distress, it was important to have a regional focus. The states of Tamil Nadu and Karnataka in South India were chosen for this study as all three types of POFs (Producer Companies, Joint Liability Groups and Farmers Federations) were present in the region. Karnataka and Tamil Nadu also had similar cropping patterns which aided in the comparison[12].

As this thesis examines the phenomenon of collective action coordinated by specific producer organisations, a purposive sampling was used to identify cases for the study. The two main criteria for the purposive sampling were: a) whether they were theoretically organisations coordinating collective actions and b) the type of collective goods they provided (i.e. credit and non-credit POFs). Despite a large number of Joint Liability Groups initiated by the National Bank for Agricultural and Rural Development (NABARD) and a number of producer companies registered, many of these producer organisations did not undertake collective action. A theoretical definition of collective action was therefore essential for the selection of cases in this study in order to allow for a comparison between the cases. Heckathron (1993) provides a useful definition of collective action which includes three conditions for the classification of collective action: a) goods should be jointly produced and accessed by members of the group, b) the accessed collective good needs to be made available to all participants of the group and c) there must be a cost involved in the production or access of the collective good. As the goods provided also differed, cases were also purposively sampled to compare credit-providing and non-credit collective actions.

Four cases were chosen for this study with the aim of gathering rich information and engaging in an in-depth comparative study. Sridevi Farmers Welfare Society (SFWS), Shri Kshethra Dharmastala Rural Development Project (SKDRDP) in Karnataka were the two credit-providing organisations coordinating collective actions, while Savayava Krushikara Sangha (SKS) from Karnataka and Aharam

[12] Kerala is unique as the majority of the crops grown there are commercial crops and plantation crops (rubber, spices, coconut, coffee, cashew nut, tea among others). This was a crucial factor in not choosing Kerala as a region of study.

Producer Company (APC) from Tamil Nadu the other two were non-credit organisations.

1.1 Research Question

The central research questions this study sought to answer were:

1. **How are SFWS, SKDRDP, APC and SKS in the states of Karnataka and Tamil Nadu structured in organisational, social and economic terms?**
2. **How are resources allocated and incentives aligned in these Producer Organisational Formats?**

Traditional forms of cooperatives and community-centred programmes coordinating collective actions in India have been hindered by organisational, social and economic characteristics of groups. Therefore, this study has attempted to determine the influence that these features play on the success of producer organisations in improving economic conditions for small and marginal farmers. In practice, this study specifically reviewed the organisational features of various Producer Organisational Formats to identify factors that influence how they are coordinated and governed, identify the influence of the social features of caste, class and gender in groups to determine characteristics that may enable or hinder cooperation in POFs, and compare credit and non-credit POFs to see how the type of collective goods might influence how collective action is structured. Crucially, the study also assessed how goods and services were allocated to various participants of the groups in order to bring about changes in the viability of small and marginal production, as well as identified what major forms of incentives were offered that encouraged member participation.

1.2 Theoretical and empirical contribution of the thesis

Collective action is a complex phenomenon with a large number of factors affecting its performances. Although many studies try to bring understanding as to how cooperation is coordinated, especially in the management of Common Pool Resources (CPR), theoretical understanding of the features that influence collective action is limited (Ostrom, 1998). Although collective action theory helps in understanding the influence that specific characteristics play in studying cooperation, it has been noted that there is little focus on the external environment or the context

in which cooperation efforts are situated (Agrawal, 2002). Although both CPR-based initiatives and for-profit producer organisations practice collective action, their context, purpose and aim, along with their incentive structures are different; this plays a major role in influencing how different stakeholders act. Therefore, the nature of incentives and the context in which for-profit producer organisations coordinate collective action requires specification. In order to address this, the study specified an analytical framework that combined institutional theory and collective action theory to understand how producer organisations are structured on organisational, social and economic terms. Institutional theory helped situate the study of this collective action in the context of institutional conditions (social, economic, political and legal) under which agricultural activities take place. These conditions form the context in which agricultural production takes place and determines the challenges the agricultural sector faces. This theoretical framework thus aided the analysis of how for-profit producer organisations are structured, how resources are allocated and how incentives become aligned in the context of agricultural production in India.

Empirical studies about collective action in for-profit initiatives often look at how contract farming has been enabled through groups (S.Singh 2002), and how producer organisations can link producers to the market (Trebbin & Franz, 2010; Trebbin, 2014). They deal with the basic contractual relationship between different stakeholders, and the linkages they form with markets. An understanding of how groups are formed, structured and incentivised, however, is absent. The dynamics that various factors play in influencing collective action in organisational and social terms are largely examined in studies relating to common pool resources management. However, they fundamentally differ from for-profit initiatives in the type of goods they collectively access, thus altering the participants' economic goals, incentives and how they behave in groups. In this study, I look at the dynamics of collective action in non-CPR and for-profit collective actions. Rather than looking at the contractual relationships and market linkages alone, this study looks at how a) producer organisations coordinate and govern collective action (i.e. organisational features), b) collective action problems that have hindered collective action initiatives are solved or prevented) (i.e. social features, c) access problems and challenges faced by small and marginal producers to increase returns to farming are addressed (i.e. economic features), d) credit providing producer organisations are structured

differently from non-credit producer organisations and e) resources are allocated and incentives aligned in different POFs.

1.3 Methodology and research design

This study of Producer Organisational Formats as collective action initiatives in the agricultural sector in India is a qualitative study that uses multiple-case studies to explore the main research questions (stated above). The main purpose of this section is to describe the design and approaches undertaken in this comparative case study. The first part discusses and justifies the qualitative approach which this study employed for answering the research questions, and it examines the methods and procedures that formed the structure of the research design. The second part of this chapter describes how the research was carried out, and how data was collected through fieldwork, including an explanation of the selection procedures and the type of case studies employed in this thesis. The last part details how the collected data was organised and analysed to answer the research question.

1.3.1 The strategy of inquiry

Qualitative research is a broad term that refers to studies that investigate social and human phenomena in its natural setting (Creswell, 2009). In other words, "…qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them" (Denzin & Lincoln, 2005, pp. 3). Qualitative research utilises methods and tools, such as participant observation, direct observations, case studies, unstructured or semi-structured interviews with key informants, respondents and focus groups, oral histories and narratives, to create descriptive accounts and narratives in understanding a phenomenon (Meinzen-Dick et al., 2004; Parkinson & Drislane, 2011).

Earlier works of collective action in common pool resources and their governance have been single or few case studies, and as case studies accumulate, other empirical research such as meta-analysis and large-N field studies to identify generalizable patterns have emerged (Poteete & Ostrom, 2008). However, a challenge associated with these studies has been that even with collaboration it has proven difficult to accumulate enough comparable data to support large-N analyses at a national or cross-national level (ibid). This is largely because the nature and type of collective

action initiatives in CPR management differ drastically depending on the nature of collective goods (forestry, grazing lands, water resources, fisheries) and other structural features influencing how collective action is organised. Therefore, qualitative case studies remain the preferred method of studying collective action in CPR management. This study of the four POFs mentioned above was an explorative study which examined *how* they are structured to address production challenges affecting small and marginal farmers. Quantitative production data was also used in this study to assess the economic outputs of collective action that accrued for small and marginal producers. Furthermore, this study used a comparative case study approach using multiple case studies. In the following part, the type of case study analysis and how the case studies were selected is discussed.

1.3.2 Case study analysis and sampling

A case study analysis is "an empirical inquiry that attempts to investigate a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident" (Yin, 2003; pp. 13). In a case study analysis, an observed unit of study (person, group, country) is identified (as a phenomenon) and then explored, described or explained in the context of the research. Case studies are often used in research where a holistic perspective is needed in the presence of multiple sources of data (Patton & Applebaum, 2003) or to further develop theory (Eisenhardt, 1989). A case study method was chosen in this study to gather in-depth data and acquire a holistic perspective of the context and conditions under which different organisations coordinate collective action, allocate collective goods and incentivise participation among small and marginal agricultural producers. More specifically, a comparative case study analysis was used in this thesis. Comparative case studies are used for an in-depth analysis of a small number of cases (D. Collier, 1993; Druckman, 2005; Lijphart, 1971, 1975). A small number of cases are usually selected because a) the topic of study is a complex phenomenon with a potentially large number of variables (Druckman, 2005), b) it permits the intensive and systematic examination of cases (D. Collier, 1993; Lijphart, 1971) and c) it helps shed light on the possible similarities and differences between cases and helps with the comparison (D. Collier, 1993). In this study, the complexity of the phenomenon of collective action and the context-dependent and subjective characteristics of organisations coordinating collective action determined the choice of a comparative case study approach.

In comparative case study analysis, the selection of cases is crucial in order for cases to be comparable. Faure (1994) suggests the Most Similar Systems Design (MSSD), where a small number of cases that are similar in certain characteristics help in the selection of cases for a comparative case study. The logic behind this selection is based on Mills' (2002) 'method of difference logic', which states that when cases are more similar, it becomes possible to identify factors responsible for their differences. Therefore, purposively sampled case studies were crucial for this study. Purposive sampling is a sampling technique where samples are chosen from a population that is interesting to study based on strong theoretical and practical reasons. Agrawal (2001) states that there is no general theory of purposive sampling when identifying collective action cases. However, he suggests that the two important criteria important for sampling case studies involving collective action are a) awareness of variables that are theoretically relevant and b) particular knowledge of the cases to be researched. By reviewing influential literature in the field of collective action and rural development, this study identified organisational, social and economic factors that could potentially influence the coordination of collective action. This helped identify comparable variables between the cases. As different regions in India vary with respect to geography, economic history and institutions, Karnataka and Tamil Nadu were the two states chosen for this study due to their similarities in their development indicators and agricultural sectors. As discussed in the first part of this chapter, the cases that were identified for this study were based on Heckathron's (1993) definition of collective action that included the conditions that goods should be jointly produced and accessed by members, the accessed collective good(s) should be made available to all participants of the group, and there must be a cost involved in the production or access of the collective good(s). An additional condition of case selection was that two were credit-providing organisations, while the other two were non-credit organisations coordinating collective actions. This helped in selecting cases that were most similar. Table 1.1 (see below) provides the methodological summary of this study. The following part discusses how the data was collected, managed and analysed.

Table 1.1: Methodological summary

Particulars	
Area of Study	- Tamil Nadu - Karnataka
Producer Organisational Formats Studied	- Farmers federation (1) - Producer company (1) - Joint liability groups (2)
Methodology	- Case study analysis
Tools	- Interviews - Participant Observation - Direct Observation - Secondary Data - Survey (for quantitative data) - Assessment of Profit

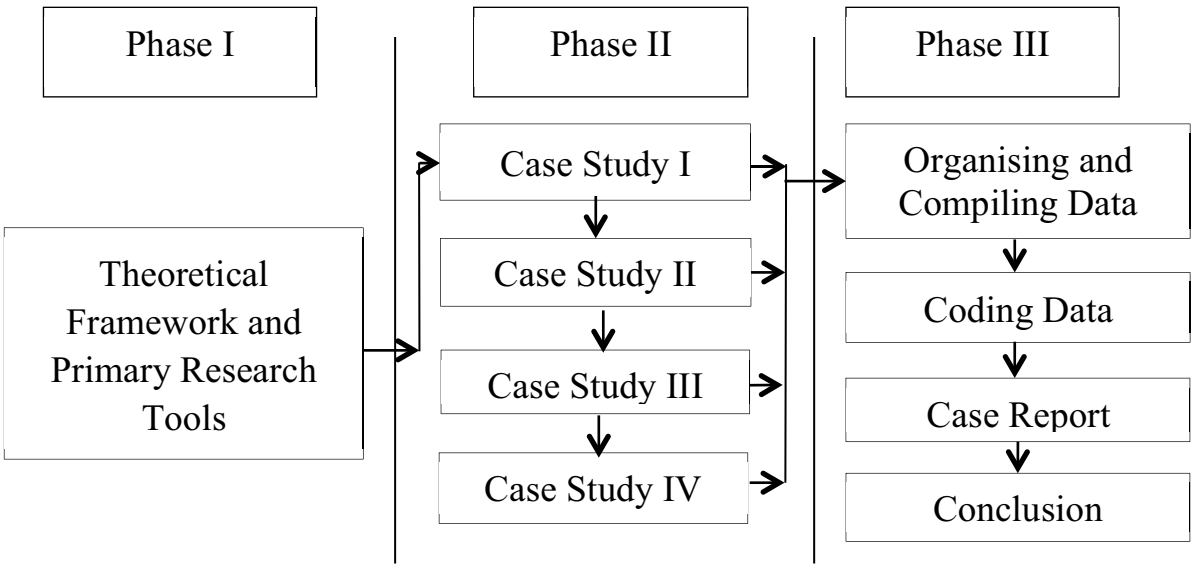
Data	- Production and marketing data from different formats (household level)
	- Data of the organisation
	- Informants
	  o Group leaders
	  o Support organisations
	  o State representatives
	  o Civil society spokespersons
	- Respondents
	  o Stakeholders of the producer organisational formats
	- Other Documents

1.3.3 Operationalization of research

Data was collected from different POFs located in Karnataka and Tamil Nadu between the 9th of January 2012 and the 1st of May 2012 (the timeline of the fieldwork is provided in Appendix II). This study was conducted in three phases

(Figure 1.1, see below). In the first phase, the theoretical framework was developed using institutional theory and collective action theory to identify the theoretical factors that influence collective action. In the second phase, different POFs for the study were identified. Informants of the study were individuals who possessed knowledge about the researched phenomenon and were willing to share their knowledge with the researcher. They helped in identifying various cases and providing specific information about various cases coordinating collective action. Interview data was collected from informants using semi-structured interviews. Data regarding the functioning of the groups and the dynamics of group-based activities were collected from farmer members of the different initiatives using a survey. They were the respondents of the study or individuals who were responding to specific questions or survey.

Figure 1.1 Different Phases of the Study



Additionally, direct observation and participant observation were utilised to collect information from the field. The case studies were sequentially analysed, and the same framework was used to collect data from all the cases. For subsequent clarifications, informants in the four initiatives were contacted by phone with follow-up questions. In the third phase of the study, data was compiled and organised for case study analysis. The data was coded using a code list based on the theoretical framework

which helped compile the case reports used in this study. The following part describes the different research tools, the methods of verification, triangulation of data and the ethical considerations engaged in this study. It also discusses the various challenges that were faced during data collection, and how these challenges were overcome.

1.3.4 Development of a framework and data collection tools

The theoretical framework of this study was developed using institutional theory and collective action theory. These theories helped identify organisational, social and economic features that might influence the formation and organisation of collective action from influential studies in the field. Based on this, the interview-guide (Appendix IV) and survey (Appendix V) were designed to collect data from informants and respondents. The informants of this study included academics, officials from NABARD, coordinators of the producer organisations, NGO officials, a businessperson, different farmer members and field-level officials running day-to-day operations of the different initiatives (Appendix III lists the informants who were interviewed for this study). These informants were interviewed using semi-structured interviews which allowed for an in-depth discussion of their opinions and insights regarding the various topics. The main topics of these interviews were: a) the main characteristics of the initiatives, b) goals of the producer organisations, c) how these organisations are structured and governed and d) perceived changes and challenges of collective action. A digital recorder was used for most of the interviews, and, when not in use, detailed notes were taken. The interviews were transcribed and then emailed to informants if they had access to email. Data was also collected from primary producer members of the producer organisations using a survey and semi-structured interviews. The survey used in the study was divided into five sections: a) basic information about the participant, b) information about the initiative, c) organisational aspects of the initiative, d) social characteristics of the initiative and d) economic features of the group and household-level production data (Appendix V). Focus group discussions among different group members were also conducted at the village level. Useful information about the group and village level power dynamics were acquired through these focus groups.

Sampling of respondents and data collection

All interviews, focus group discussions and survey data for the study were collected by the author of this study. The surveys and schedules of visits to villages could not be planned ahead of time since there was no way to determine the availavility to members to be surveyed, and sometimes only one member of the household (usually the male members) had information about group activities and production information. Therefore, the timing of the collection of data was crucial. Hence, the surveys were conducted mostly in the evenings when farmers returned from their fields.

Furthermore, data for each case was collected from multiple sources. The main informants for each case were the leaders and administrators of the POFs, officials of the NGOs supporting them and the field staff who coordinated the various activities of the organisations; the respondents of the study were the member farmers who were surveyed during the fieldwork. Table 1.3 summarises the survey and production data collected from different initiatives studied in this thesis.

Table 1.3: Summary of survey and production data collected from different initiatives

Organisation	Number of Respondents
Aharam Producer Company	22
Savayava Krushikara Sangha Farmers Federation	44
Shri Kshethra Dharmastala Rural Development Project JLG	42
Sridevi Farmers Welfare Society JLG	30

Conducting the survey and visiting different farms also helped with acquiring observational data in the field, such as observing changes in farming techniques, labour sharing activities and other forms of group activities such as meetings and information sharing within groups. Furthermore, participant observation was enacted in price-fixing meetings (Savayava Krushikara Sangha), executive committee meetings, savings group meetings (Aharam Producer Company, Savayava Krushikara Sangha), labour sharing initiatives (Shri Kshethra Dharmastala Rural Development Project) and general body meetings (Savayava Krushikara Sangha). Translators were

used during the collection of survey data and participant observation in Karnataka which helped to gather valuable information on the functioning of groups and decision-making structures of the organisations. A field journal was also kept to record important information which was observed in the field. Moreover, the documents that the various organisations kept provided an additional source of data for studying these different initiatives. The documents that were suitable sources of data include: internal studies conducted by the group, annual reports of the organisations or the NGOs supporting it and information brochures organisations kept regarding their activities.

Production data was collected through the suvey of primary producers to understand the economic changes brought about through collective action. It was assumed that the primary changes that were brought about were through better price realisation (price increase response), reduction of marketing costs (marketing cost reduction response), improvement in yields (yield response) and better production practices (production effeciency response). In order to determine the level of these changes costs and prices 'before' and 'after' implementation of collective action needed to assessed. Table 1.4 shows the measures for the changes in price, production cost, marketing costs and changes in yields that were used to determine the change in profits for each of the cases and the soruces of data. Most initiatives kept records of the changes in cost of production resulting from extension services and price response. They collected this data through farmer field schools. Data regarding identification of marketing costs and increased yields needed to be collected individually from respondants. This data was used to calculate the changes in profit brought about by different initiatives at the household level. Appendix VII details the analysis of the profit function used to compute change in profit from collective action participation.

Table 1.4: Controls for measuring change in profit

Particulars	Before	After	Sources of data
Price increase response	- Price of produce through village level intermediaries - Market price	- Premium prices through contracts and increased price realisation	- Premium price data at the organisational level
Production efficiency	- Cost of cultivation in the absence of extension services or quality inputs - Higher interest rate	- Cost of cultivation reduction through extension services, information and better inputs	- Farmer field school data at the organisational level and household level
Marketing cost reduction response	- Transportation costs, loss through poor weighing	- Benefits of farm gate purchase and costs saved	- Organisational level for initiatives having farmgate purchase
Yield response	- Low yields due to poor information and poor extension and technology adoption	- Yield increase due to better inputs, extension and technology	- Household level and organisational level

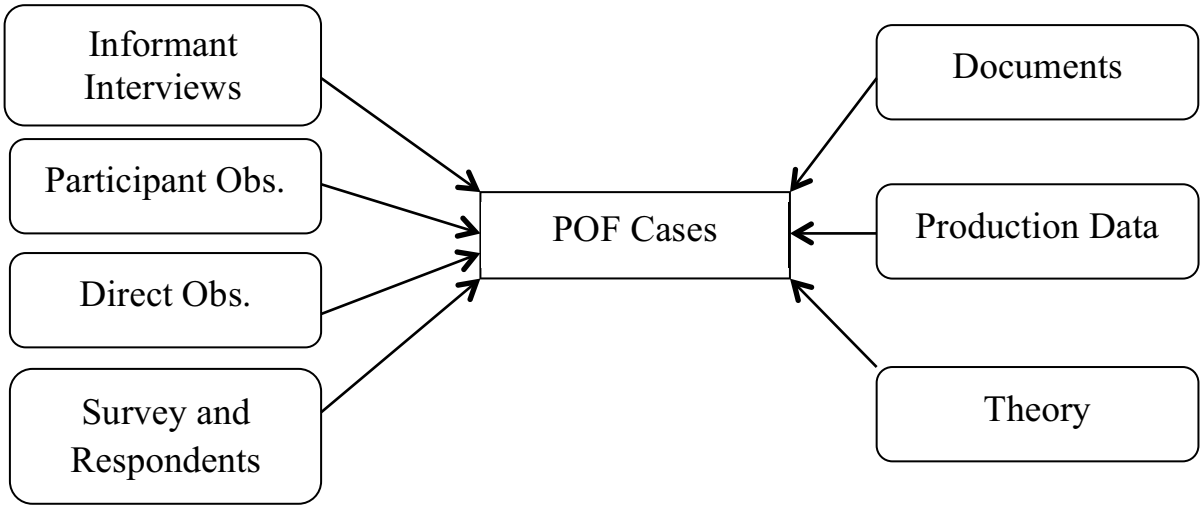
Despite most organisations mandating members to keep production records, some respondents did not have household level records. In order to collect production cost data, the study sometimes had to depend on the recall of the respondents. This may have led to some recall bias in the data. In such cases data collected at the household was verified using farmers field school data at the organisational level. The household level data was collected in 2012 and the before and after data intreval ranged between 3-5 years depending on the age of the initiative. Considering this intreval was not large the cost and price data was not adjusted to inflation.

1.3.5 Data management, ethical considerations and analysis

In case study research, the verification of information is crucial to increase the accuracy and reliability of the analysis. Thus, the organisation of data is imperative prior to the verification of data. As data was compiled from multiple sources, it had to be organised in a retrievable manner. Interviews and field notes were transcribed, organised and classified with the help of codes. Codes are data organisational tools used to compile and verify data, and in this analysis were topics under which different information gathered in the field were classified. Influential works on collective action (Agrawal, 2001a; Ostrom, 1998a) highlight the need for effective coding of data as the number of variables influencing collective actions are large. In this study, for the organisation of data, axial coding was used which is a hierarchical coding method where codes and sub-codes are created, and data is coded accordingly with different sub-codes classified under codes (Strauss & Corbin, 1990). Collective action theory and institutional theory guided the creation of codes in the study, and the organisation of POFs was examined from the vantage point of both these theories. The first code list was theory based, and this formed the basic structure of the survey questionnaire (Appendix V). Based on the field notes and preliminary review of data, the second code list was drawn out with primary codes and sub-codes (Appendix VI). This revised code list was used to compile and organise the data from interview transcripts, field notes, manuscripts from various organisations and secondary data from newspapers and internet sources. Coding along with organising the data for easy retrivability and crossreferencing also allowed for trinagulation.

Data source triangulation entails the use of different sources of data to verify a phenomenon, fact or observation (Denzin, 1970). The multiple sources of data collected in the field were coded and triangulated to verify facts and observations. Figure 1.2 depicts the triangulation method used for the different sources of data collected.

Figure 1.2 Triangulation of data



In all other cases, the information gathered from informants was also verified through respondents. Direct observation and participant observation was also helpful in the verification of information gathered from informants.

Ethical considerations

Various ethical considerations/checks were undertaken during fieldwork and during the compilation and presentation of the data in this study. Table 1.5 lists the various ethical issues and considerations followed during fieldwork. As the author collected all information used in the study, these considerations were uniformly applied in all locations.

Table 1.5 Ethical issues and considerations taken in the study

Ethical Issues	Rights Violated	Considerations taken
Participants Anonymity	Right to privacy	- Data privately kept - Anonymity of respondents and informants - Anonymity of locations (village names)
Involving participants in research without their knowledge	Right to be informed Right to privacy	- Researcher made his background and purpose clear to informants and respondents

Use of deception	Right to be informed	- Permission was explicitly asked before interviews or observations
Use of coercion	Right to choose	- Participation in the survey was voluntary - Respondents' right not to answer questions was respected
Causing embarrassment, hindrance or offence	Right to respect	- Explicit approval to use information was sought - Names and locations of respondents kept anonymous unless explicitly agreed upon.

Source: Adopted from Smith & Quelch, (1992; pp. 12)

Analysis of data

Two Joint Liability Groups, a Producer Company and a Farmers' Federation were assessed in the study. Using the data that was gathered during fieldwork, in each case the structural features that determined the collective action were explored using propositions developed through the assessment of existing forms of collective action initiatives; the specific organisational, social and economic features were identified and assessed to determine their influence in enabling collective action. This assessment has helped provide insights into the scope, potential and challenges that collective actions face in bringing growth and development into the Indian agricultural sector.

1.4 Chapter overview of the thesis

The thesis is divided into six chapters. The second chapter describes the analytical framework employed in the study to help analyse how Producer Organisational Formats are structured in organisational, social and economic terms. The two theories used to develop this framework are collective action theory and institutional theory, which are further discussed in chapter two. Collective action theory attempts to

theorise the conditions, circumstances and factors that influence how collective action is initiated and coordinated. Although it helps guide an assessment of how cooperation is structured and coordinated, yet it is limited in its ability to understand the context in which producer organisations are situated in as well as the determinants that influence incentives in the organisations. Agricultural production takes place under unique production conditions characterised by seasonality, geographical dispersion, climatic and market risks. These conditions along with various social, economic, political and legal institutions characterise the context in which collective action takes place. Institutional theory in this study is used to understand the social context characterised by caste, class, and gender, the institutional environment or the political, social and legal ground rules that influence production, exchange and distribution and institutional arrangements or rules and regulations in particular situations governing individual or group activities. In the analytical framework developed for this thesis, institutional theory thus compliments collective action theory in studying how producer organisational formats coordinate cooperation among members in the context of the agricultural sector. Moreover, institutional theory, which defines institutions as rules, schemas, norms and procedures that reduce uncertainty and increase an individual's utility in economy and society, helps to understand the nature and functions of institutions and its effects and influences on human action.

The third chapter describes the context in which agricultural production takes place in India. This context helps to understand the social and economic conditions in which producer organisations coordinate collective action and also highlight the relevance and scope of these initiatives. Utilising institutional theory, the chapter describes the institutional embeddedness of agricultural production, the institutional environment that influences production and the various institutional arrangements prevalent in the agricultural sector that is meant to help and support farmers. Institutional embeddedness helps establish the influence of the social context characterised by caste, class and gender that determines exclusion or access to land, inputs and markets in agricultural production. The institutional environment in agriculture is characterised by property rights, transaction costs and information flow mechanisms and is also crucially dependent on the influence of these social dynamics. Agricultural markets, credit institutions and institutions disseminating research and extension services are the various institutional arrangements supporting production in

the agricultural sector. Access to these institutions and the services provided by them is therefore vital for the development of the sector. This analysis of the context thus helps in understanding the challenges faced by small and marginal producers in the agricultural sector, the objectives and purpose of producer organisations explored in this study and the nature of production and distribution issues faced by small and marginal farmers that producer organisations try to address.

The fourth and fifth chapter of this study comprise the comparative case studies of the Producer Organisational Formats (POFs). Using the theoretical framework developed in chapter two, this assessment explores how these producer organisations are structured in organisational, social and economic terms, and how resources are allocated and incentives aligned. These empirically-based chapters consider the influence of the context and challenges of small and marginal production and describes how various initiatives attempt to address these context-dependent challenges through collective action. Chapter four assesses the two Joint Liability Group cases, namely Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society in the state of Karnataka, to understand how they are structured to access credit, inputs and extension services by their members. These two cases have the distinction of being producer organisations that provide institutional credit to their members and therefore were analysed together in comparison.

Chapter five compares the other two cases of Aharam Producer Company (APC) and Savayava Krushikara Sangha, two non-credit producer organisations in the states of Tamil Nadu and Karnataka respectively. This chapter shows how the two producer organisations are structured on organisational, social and economic terms, and how they successfully integrate their supply chains and form forward contracts to improve price realisation for their produce. By comparing four case studies, chapters four and five assess how these credit-providing and non-credit producer organisations were structured, how resources were allocated and what incentives were offered. They also assess how some of the challenges small and marginal agricultural producers faced in the agricultural sector in the states of Karnataka and Tamil Nadu were addressed. This comparison helps to shed light on how the organisational, social and economic features differed from one another in different contexts, and how they influenced the

distribution of collective goods and nature of incentives in POFs coordinating collective action.

The last chapter of the thesis sums up the main arguments made in the thesis and highlights the main findings of this study. Here the main factors that influence how POFs are structured in organisational, social and economic terms are discussed, and the changes these initiatives bring to small and marginal agricultural production in Karnataka and Tamil Nadu are considered. The importance of incentives and how collective goods are distributed among members is also pointed out. The implications for future research are also discussed highlighting how the analytical framework can be improved to address the historical influence on the emergence of producer organisations. In the last section, implications for policy development are addressed to highlight the relevance of POFs, and the need for policy support in order to implement them more widely due to the potential they have in addressing issues of gender disadvantages and social hindrances to markets, inputs and service access by small and marginal producers, as well as the potential economic implications they might have on small and marginal producer-dominated agriculture.

Chapter II: Theoretical Framework

2.1 Introduction

The different Producer Organisational Formats identified and studied in this thesis are producer organisations that coordinate collective action. The main aim of these organisations is to address challenges of access to credit, inputs, information and extension services and markets that effect small and marginal farmers in the community. The effectiveness of these Producer Organisational Formats (POFs) in enabling access and help in agricultural production hinges on how POFs are structured on organisational, social and economic terms, and this forms the central research question of the thesis. Collective action is a complex phenomenon, and although there are numerous studies exploring how cooperation is designed and coordinated, theoretical understanding of factors influencing the success or failure of collective action is limited (Ostrom, 1998a). Due to this complexity, generalizable explanations of why some groups fail to coordinate an initial cooperation break while others succeed in similar scenarios is hard to arrive at (Ostrom 1998a; Ostrom 2003). However, theoretically informed studies, especially in the area of common pool resources, have been able to identify scenarios under which successful collective action takes place (Agrawal, 2001c; Marwell & Oliver, 1993; Ostrom, 1998a).

A limitation of the literature on collective action is that there is no adequate focus on the external environment or the context in which they are situated (Agrawal, 2002). Agriculture production in any economy is influenced by the production conditions (e.g. seasonality, geographical dispersion, climatic and market risks) and institutions conditions (e.g. social, economic, political and legal) under which agricultural activities take place. These conditions form the context in which agricultural production takes place, determines the challenges the agricultural sector faces and greatly influences how producer organisations are structured. This chapter aims to justify and create an analytical framework that will help understand how producer organisations are structured on organisational, social and economic terms, how resources are allocated within the groups and how incentives to collaborate are aligned in these groups coordinating collective action. Due to the limitations that collective action theory faces in shedding light on the context, this chapter thus

justifies a framework that combines institutional theory and collective action theory to answer the research questions which address the context-dependent issues that POFs face.

This chapter is divided into four sections. The first section evaluates the developmental role and the production conditions of the agricultural sector. This section highlights the nature of the agricultural sector and the risks and uncertainties that are pervasive in the sector urging the necessity for institutions to address these challenges. The second section looks at the main precepts of institutional theory and how it can help describe and define the social, economic, political and legal context in which agricultural production takes place. In the third section, the main arguments of collective action theory and the fundamental organisational, social and economic features that influence their structure are discussed. The last section of this chapter addresses the nature of resource allocation and the incentive structures that influence the formation and sustenance of collective action. The analytical framework developed in this chapter, moreover, combines institutional theory and collective action theory to help explore the structure of different Producer Organisational Formats and the potential changes they can bring to small and marginal producer agriculture.

2.2 The unique conditions and the developmental role of agriculture

The conditions under which agricultural production takes place are often complex. In farming, decisions about what to grow, how to grow it, what inputs to use, when to plough, sow, irrigate and harvest are crucial to the production process (Timmer 1988). Factors such as seasonality, geographical dispersion and the risks and uncertainties of agriculture make it highly relevant to know not just the right inputs, but also how and when to use them (ibid). Likewise, climatic variations in temperature and rainfall of different seasons determine production decisions in agriculture. As seasons change during the course of the growing season, activities such as ploughing, planting and harvesting need to be coordinated accordingly (Mellor & Mudahar, 1991). Information about right practices and the availability of inputs such as labour, seeds, fertilizers and irrigation need to be made available at the

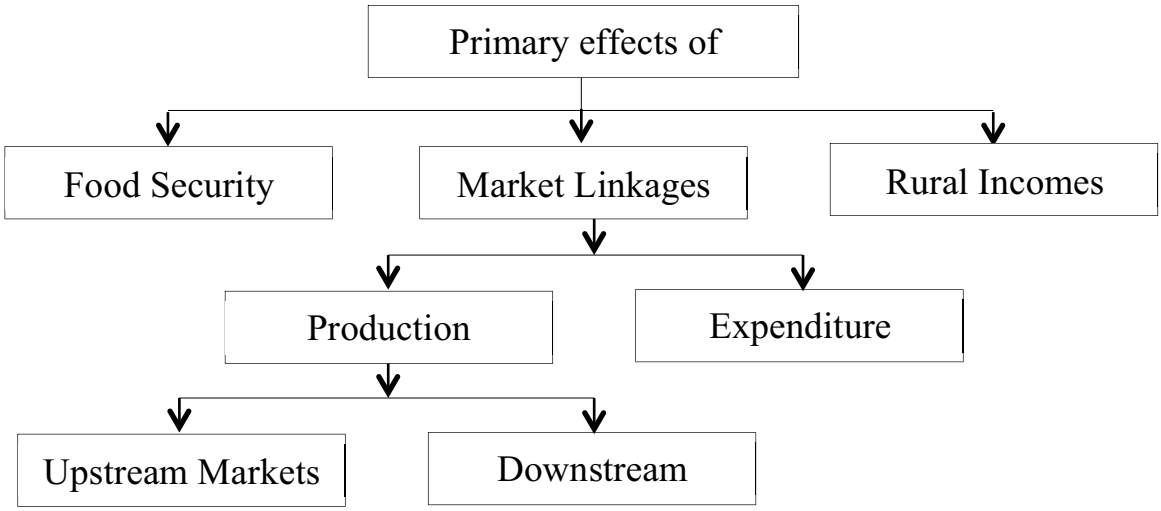
right time for effective yield outcomes. This seasonal aspect complicates the planning and decision-making processes in farming (ibid).

Geographical dispersion of farming regions is an important factor in agricultural production with important economic consequences. Roads to connect farms to markets, irrigation to mitigate climatic risk, storage facilities for short term and long term stowing of produce and markets for purchasing inputs, exchange and distribution of goods are crucial features in agricultural production determined by geography (Mishra & Chand, 1995; P. Timmer, 2002). The absence of poor access to these facilities will affect agricultural production. The major risks and uncertainty associated with agricultural production are due to climate and markets (weather and prices). Failed monsoon, floods and frost can wipe out seasonal crops, while returns from bumper crops can be dampened sometimes by poor market prices (Timmer, 1988). Accurate market signals and information about prices are important factors in making good farming decisions (Schultz, 1953). Moreover, in vast countries like India, different agro-climatic zones determine the type of crops that can be grown and the varying levels of risks involved in cultivation (O'Brien et al., 2004). Hence, infrastructure such as dams and other irrigation facilities are important to mitigate environmental risks that may disrupt production. Furthermore, the various contributions that the agricultural sector makes to the economy are crucial for the development of countries such as India. These contributions are a) food for domestic consumption b) rural income and demand for industrial goods c) release of labour to support industrial growth d) supply domestic savings to the economy and e) earn foreign exchange trough trade (Johnston & Mellor, 1961). The labour supply, domestic savings and foreign exchange are contributions that are transferred from agriculture to other sectors such as the industrial sector for its development (Kuznets, 1964), while food, income and demand for industrial goods or market linkages are integral to rural development and poverty alleviation.

Figure 2.1 depicts the three primary effects of agricultural growth on the rural sector. Food security in an economy is essential in addressing the poverty trap, where malnourishment lowers labour productivity, which in turn lowers labour output, again leading to poor access to food (Fogel, 1991). Rural incomes through higher wages or better price of outputs increase the access of individuals to health care and education

facilities contributing to human capital (Bliss & Stern, 1978; J.G. Williamson, 1993) and also helps to create a demand for industrial goods.

Figure 2.1 Primary effects of agriculture on economic growth



The market linkage effect of agriculture occurs when linkages with the non-farm activities aid in overall economic growth (P. Hazell & Haggblade, 1993). The farm – non-farm linkages are of two types: expenditure linkages and production linkages. The expenditure linkages are the consumption of goods and services (industrial and local) produced outside the farm by rural households. The production linkages are further classified into forward or downstream linkages and backward or upstream linkages (Davis et al., 2002). Backward linkages connect the farm to the non-farm sector for the access of inputs (fertilizers, pesticides and seed), credit from the financial sector, labour etc., while the forward linkages connect the non-farm sector to the farm where agriculture outputs such as food and fibre are used in the rest of the economy. Owing to these effects and linkages, the farm sector growth has a strong multiplier effect significantly greater than 1, this means that a one per cent growth in agriculture contributes to overall growth by more than one per cent (World Bank, 2004; Fan et al., 2004; Hazell & Haggblade, 1993; Mellor & Lele, 1973).

Alongside these factors of seasonality, geography and risks there are other factors that influence agricultural production that are institutional in nature. Institutions of property rights, social factors such as caste (in the case of India) class and gender and information and its access also affect agricultural production (Thorat, 2009). The next

section of this chapter deals with the basic precepts of institutional theory to understand the nature and dynamic of institutions and arrive at a framework that will allow the assessment of POFs in their institutional context.

2.3 New Institutional Economic and the understanding of institutions

Institutions are human devices that comprise of behavioural rules, schemas, norms and regulations designed to cope with uncertainty and to increase individual utility in society (Schultz 1968). The fundamental role of institutions is to reduce uncertainty in complex social, political and economic environments (Toye, 1995). Institutions that exist in society are both formal and informal in nature. New Institutional Economics is an approach to studying institutions pioneered by scholars such as Coase (1960), Alchian and Demsetz (1972), Williamson (1975) and North (1981). Williamson coined the term New Institutional Economics (NIE) to differentiate it from Old Institutional Economists (OIE) or American Institutionalists[13], spearheaded by scholars such as John R Commons and Thorstein Veblen among others[14] (Hodgson, 2003; pp 164). Commons (1925) and Veblen (1961) emphasised the importance of understanding the interaction of social institutions (norms, customs, habits) and economic institutions (markets, unions, corporates) in the functioning of the economy[15].

Nabli and Nugent (1989) state that the purpose of New Institutional Economics was to explain the main determinants of institutions and how they evolved and to evaluate how they influenced economic performance, distribution and efficiency. A key factor determining economic performance, distribution and efficiency was the transaction costs (Coase, 1960; North, 1981; Williamson, 1975) or the cost of negotiating, securing and completing a transaction in a market economy (Coase, 1988). NIE maintained that institutions evolved to minimise transaction costs, and they were

[13] The term 'Old Institutionalist' is used by Langlois (1989) and Hodgson (1998), and the term 'American Institutionalists' appears in the works of Hodgson (2000, 2004).
[14] Other old institutionalist scholars include Wesley Mitchells, John Maurice Clark and Clarence Ayres.
[15] In essence, OIE viewed institutions "not simply as constraints on the behaviours of the pre-formed and unchanging individual, but also as shaping the individuals themselves" (Chang, 2002; pp 552-53). Although understanding the role of institutions in economic development and their evolution overtime was the main focus of OIE, its topical approach to economic problems lacked theoretical cohesiveness (Graboswski, 1988; Gruchy, 1990). This meant that old institutionalism lacked systematic explanatory power (Hodgson, 1988, 2003), its findings was based on naïve empiricism (Myrdal, 1958) and that it was only "description without theory" (Schumpeter, 1930).

important in the functioning of markets in an economy (Bardhan, 1989). NIE helped bring back the study of institutions into mainstream economics by clearly highlighting their relevance in economic relations[16]. However, since the 1980s, scholars within economics and other disciplines such as psychology, history, sociology and anthropology have contributed substantially to institutional theory by challenging some assumptions made by NIE and expanding its scope for interdisciplinary research (Hodgson, 2000)[17].

Most critiques do not undermine the contribution that NIE makes, especially heuristically, as it rejects restrictive assumptions made by neoclassical economists and the emphasis on markets (Harriss et al, 1995; Hodgson, 2001, 2004). This has opened up new avenues of research and an understanding of institutions that was previously undermined. One of the major criticisms earlier works of NIE faced was that adequate importance was not given to informal institutions and their influence on economic performance, distribution and efficiency (Nee, 2005). North (1993) [18] defined institutions as being made up of formal rules (laws, contracts, markets, firms) and informal constraints (norms, conventions, value systems, religion). Informal constraints according to him were not as important as formal institutions as they did not have the ability to enforce (North, 1991).

Markets are structures with functions more than just the act of exchange (Huylenbroeck et al, 2009). According to Nee (2005), institutions are more than formal rules and informal constraints as informal and formal elements are interrelated, and customs, shared beliefs, conventions and norms had the power to enable or disrupt distribution and efficiency in an economy. Social theorists such as

[16] Neo-classical economics' assumption that no institutions were necessary in exchange since they were driven by utility considerations disregarded the complex of institutions that enabled contracts in market transactions (Bardhan, 1989). According to neoclassical economics, prices in the markets are determined by demand and supply, and based on the subjective preferences of consumers and producers (Brennan & Moehler, 2010). The prices that are determined and the choices individuals make are coordinated across all markets resulting in a 'general equilibrium' in an economy. General equilibrium[16] theoretically illustrated the conditions under which market prices shaped decisions of consumers and firms, where all consumers maximised their utility and all firms maximised their profit (Arrow, 1951; Debreu, 1951). This maximization led to a condition of 'Pareto-optimality', or a condition where allocation of resources were efficient and individuals could not increase their utility without making the conditions of another individual worse (Bates, 1995). NIE did not attempt to replace or overturn the basic precepts of neoclassical economics, but tried to redress elements that made it an institution-free theory (North, 1995).

[17] This has also led to the emergence of other schools of institutionalism, such as historic institutionalism, institutionalism in economic sociology, and organisational institutionalism (Rueschemeyer, 2009).

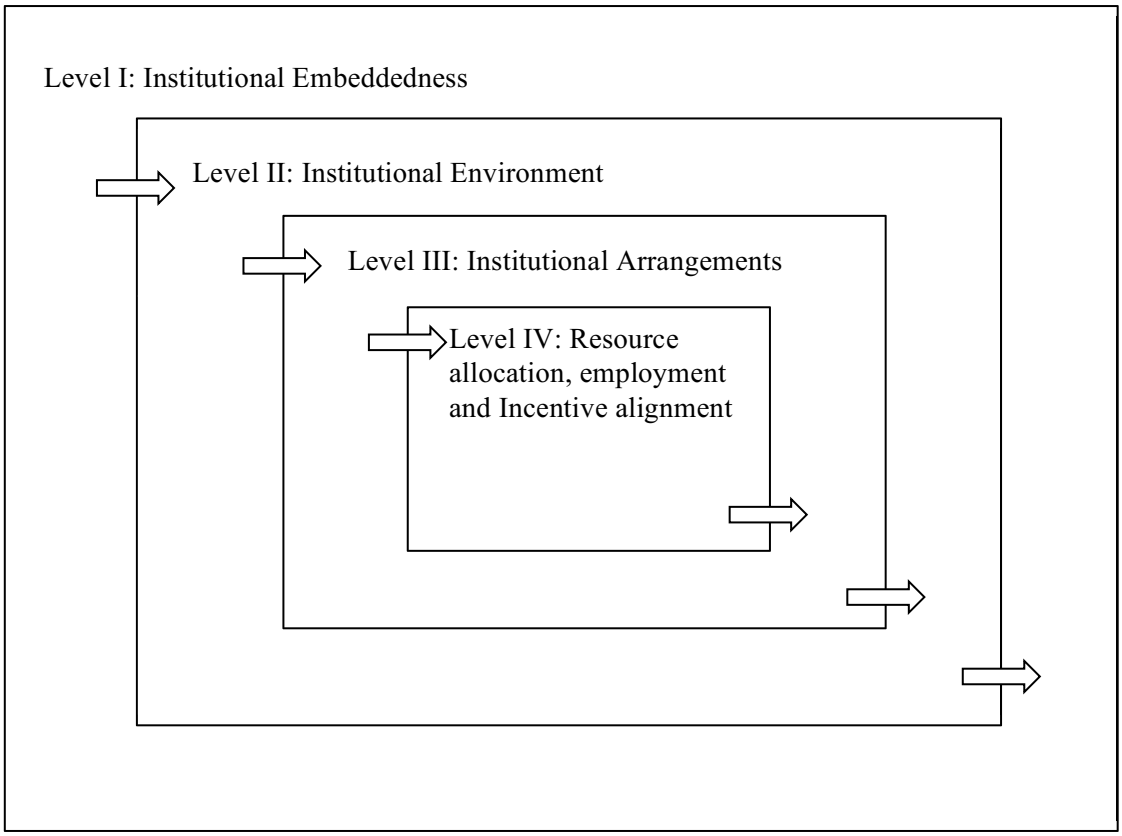
[18] "Douglass C. North - Prize Lecture: Economic Performance through Time".Nobelprize.org. Nobel Media AB 2013. Web. 8 Aug 2013. <http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/1993/north-lecture.html>

Granovetter (1985), Fukuyama (2002), and Swedberg (2005) state that markets are also social structures comprised of an extended range of social interactions between individuals, communities and societies, and the social context characterised by norms, conventions and value systems are crucial to their functioning. NIE scholars have over the years engaged with these critiques and have incorporated suggestions into the framework of their analysis which has made NIE suitable to understand the context in which Producer Organisational Formats have emerged and how they are coordinated in India. In the next part of this section, Williamson's (2000) four-level analysis of institutions is assessed to justify its use in developing the analytical framework in this study.

2.3.1 The four-level analysis of institutions

New institutional economists (NIE) generally agree that institutions are systems of rules to offset uncertainty and risks by providing a social structure that allows individuals to gain control over their environment (Menard, 1995; North, 1990). The context in which this system of rules exists is evolving and changing at the micro and macro levels (Lieberherr, 2009). Williamson's (2000) four-level analysis of institutions attempts to understand the characteristics of institutions, the context in which they exist, and the frequency at which they change. The four levels of this framework include: a) an embeddedness level which comprises informal institutions such as customs rules, norms etc. that change very slowly (100-100 years), b) the institutional environment comprising of formal rules or 'rules of the game' such as property rights which have a lower frequency of change (10-100 years), c) the institutional arrangement or 'how the game is played', which comprises of governance structures with institutions that have short frequencies of change (1-10 years) and d) the resource allocation, employment and incentive alignment stage which relates to how institutional arrangements perform with the frequency of change as continuous. Figure 2.2 depicts the four levels of analysis as being nested within the higher levels imposing constraints on the levels below (signified by the inward arrows) and the lower levels' signal (signified by the outward arrows) to the levels above which signifies the two-way relationship between different levels.

Figure 2.2 Nested four-level analyses of institutions



Source: Adapted from Williamson (2000) and Kyeyamwa (2007)

Williamson's model formally accommodated the assessment of social dimensions which were emphasised by economists such as Granovetter and Swedberg, factors of resource allocation, employment and incentive alignment emphasised by neo-classical economists were also integrated into the NIE framework to emphasize the role that the institutional environment and institutional arrangements play (Nee, 2005; Nordtveit, 2009). Moreover, the model acknowledged the role and influence of social factors that were embedded in the institutional environment and institutional arrangements. This has guided research exploring economic relations and premises of exchange in different forms of social settings (Lieberherr, 2009), understanding institutions in the context of human behaviour, beliefs and past practices (Chhotray & Stoker, 2009). It also expanded the scope of NIE research to look at the role of social influences and informal institutions on the institutional environment and in institutional arrangements. Many studies, however, do not use the model in its

entirety and explore specific relationships between specified levels. In Taube and Schramm's (2005) work on the role of formal and informal norms in corrupt contracting in Chinese *'Guanxi'* networks and in López and Santos' (2014) work on cultural dimension of corruption we see the interaction between social influences and institutional arrangements such as contracts and bureaucracy. Huylenbroeck et al., (2004) in their study of the institutionally complex agri-food sector uses the framework to look agricultural policy and implementation, supply chain organisation and distribution of rural resources across levels one to three.

Agricultural production is unique in the manner that factors of seasonality, geography and various other risks influence agricultural production. Along with this, agricultural production and marketing is also influenced by asset specificity[19] of factors of production and political and regulatory environment that often treats agriculture as a special sector (Cook et al., 2008). Understanding the role of institutions in agricultural production and marketing, therefore, is crucial to assessing the dynamic of the agricultural sector.

Due to the scope of the framework to look at the multiple facets of social constraints, formal rules and incentive structures, some studies in agriculture production and marketing and collective action in the management of natural resources have used the four-level analysis framework, or combined it with other theories, to understand the wider context in which institutions exist and how different levels influence each other. Kyeyamwa's (2007) study on livestock markets in Uganda employs this framework to understand how formal rules and informal norms (in the institutional environment stage) influence how these markets function. Milagrosa (2006) combines the four-level analysis framework with the structure-conduct performance paradigm to assess contract types and governance structures in the marketing of vegetables among indigenous communities in Northern Philippines. These studies use the framework to understand how markets as institutional arrangements function through contracts and alignment of governance structures. In the management of

[19] Asset specificity refers to the limited transferability of investments or capital from one purpose or economic activity to another[19]. Williamson (1983) identifies four specific asset specificities as: a) site specificity influencing spatial relations like market distance and therefore costs, b) physical asset specificity which pertains to assets having specific functions and are not transferable to other functions (e.g. combined harvesters in grain production, chilling plants in milk supply chains, etc.), c) dedicated asset specificity which consists of dedicated assets specific to a task by contract or agreement (often in relation to suppliers) and d) human asset specificity which are specific knowledge and skills that cannot be applied anywhere other than in agriculture or related activities.

common pool resources, Dombrowsky (2007) applies the institutional environment and institutional arrangement levels of the four-level analysis to understand international water management issues. Behera and Engel (2006) also use this framework to understand rent- seeking and the transfer of rights in joint forest management in India. These studies, in contrast to studies of agricultural markets, focus on how the absence of property rights affect and influence the transfer of rights, rent seeking and transaction costs. From these studies we see that the four-level analysis framework is useful in understanding the institutional context and its influence across different levels to give a holistic picture.

In this study of Producer Organisational Formats in the agricultural sector in South India, understanding the institutional context in which agricultural production, distribution and marketing takes place is crucial to explore how POFs are structured in organisational, social and economic terms. POFs are institutional arrangements or governance structures coordinating collective action which are influenced by its institutional embeddedness and institutional environment, and in turn influences resource allocation and incentive alignment within groups. The next part of this section specifies the different stages of the framework in relation to the agricultural sector. The limitations of this framework are also identified and addressed to effectively answer the research question.

2.3.2 Institutional embeddedness

The first level in the four-level analysis of institutions is the embeddedness level. The concept of 'embeddedness' describes individuals or institutions as enmeshed in a social network or structure (ibid). Markets are understood to be structures with functions more than just the act of exchange (Huylenbroeck et al, 2009). According to social theorists such as Granovetter (1985) and Swedberg (2005), markets are social structures comprised of an extended range of social interactions between individuals, communities and societies. Mark Granovetter (1985) emphasises how the economic role of actors is "embedded" in their social context. He states,

> Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations (pp. 487).

The concept of 'embeddedness' describes how particular individuals or firms are enmeshed in a social network or structure and the role of interpersonal ties and networks that are important to understanding economic relations (ibid). Previously, by defining institutions as formal rules and informal constraints, informal institutions of norms, customs and cultural influences were not considered to be as important as formal institutions (North, 1991). The focus on the role of informal elements in determining economic action, hence, brought sociological analysis into the spectrum of understanding economic institutions.

Informal institutions of rules, bonds and constraints play an important role in any economic environment characterised by information asymmetry, enforcement problems and repeated interaction (de Laiglesia, 2006). Often these informal rules, social bonds and constraints have in themselves systems of reward and punishment built into a network or social exchange to prevent opportunism and malfeasance (Homans, 1974). In common- pool resource management literature, there are numerous studies that show how informal institutions such as norms and conventions are able to ensure access and allocation of resources in the absence of property rights (Abraham & Platteau, 2001; Agrawal, 2001b; Ostrom, 1990, 2009; K. Singh, 1994). In relation to agricultural marketing, Lu et al. (2008) shows how trust between farmers and buyers helped reduce transaction costs among small farmers participating in vegetable marketing in China. At the same time, social institutions such as gender, caste and class often play exclusionary and discriminatory roles in agricultural production (Agarwal, 2010; Thorat, 2009). Udry (1996) states that female-led farming households in many developing countries underperform due to transaction costs in accessing inputs and marketing agricultural produce. These institutions may constrain access to resources for production and markets to certain groups by increasing their transaction costs or excluding them altogether. This indicates that social institutions have the potential to reduce transaction costs and enforce informal contracts, and, at the same time, increase transactions costs and exclude individuals from effectively taking part in economic activities. This makes the understanding of the social embeddedness of institutions crucial to studying producer organisations especially in socially-stratified societies like India. Institutional embeddedness in effect means that the institutional environment at the macro-level and various institutional arrangements at the micro- and individual levels are influenced by this social context.

2.3.3 Institutional Environment

Institutional environment, according to Davis and North (1971), is "the set of fundamental political, social and legal ground rules that establishes the basis for production, exchange and distribution" (pp.6-7). In Williamson's model, the institutional environment comprises formal rules (legal system, property rights, judiciary, bureaucracy etc.) and forms the second level of the four-level analysis framework. The institutional environment is often shaped and determined at the national and sub-national levels. In NIE, transaction cost is the most crucial feature influencing the functioning of markets, and in the absence of transaction costs there is no need for the enforcement of property rights as transaction relations would be efficient (Marinescu, 2012). However, when the transaction cost is positive, legal systems such as property rights become important. Property rights give individuals the ownership over physical assets and the right to determine how the asset is used in circumstances not covered by existing contracts, customs, or the law (Baker & Hubbard, 2001, pp.189). Ownership affects the investment incentives of agents and also reduces transaction costs. These rights possessed by individuals are also traded with commodities in the market (Coase, 1992). Transaction costs, therefore, also comprise the cost of land, labour and capital required to transfer property rights from one individual to another (North & Wallis, 1994).

Closely linked to transaction cost is the imperfect information theory of institutions pioneered by economists such as George Stigler, George Akerlof and Joseph Stiglitz. Individuals often act on incomplete information or in situations where information feedback is insufficient, thus leading to poor choices and higher transaction costs (Bardhan, 1989). Stigler (1961, 1967) states that information in markets about buyers and the quality of goods and services are not always transmitted effectively and there are often costs (e.g. search and opportunity costs) associated in accessing them. This potentially increases transaction costs and this imperfect information could lead to adverse selection and moral hazards (especially in credit and labour markets) affecting the functioning and performance of markets (Stiglitz & Weiss, 1981; Stiglitz, 1985). Akerlof (1970) in his assessment of market failures states that the role of reputation, trust and guarantees play an important role in addressing informational constraints in the markets. The imperfect information theory highlights the importance of informal institutions in reducing informational constraints, and this is underspecified in the Williamson model.

Property rights and information are crucial in determining the characteristics of the agricultural sector. A key behavioural assumption that legitimises the need for property rights is opportunism and bounded rationality (Prasanna, 2003; Williamson, 1975). Opportunism or "self-interest seeking with guile" occurs due to people's propensity to lie or cheat in the markets (Williamson, 1975; pp. 6). Therefore, there is a need to enforce contracts to limit the extent of opportunism in economic activities. Herbert Simon's bounded rationality thesis states that human agency is "intendedly rational but limitedly so" (Simon, 1957; pp xiv). In other words, human ability in accessing and processing information is limited and this bounded rationality is determined by an individual's neuro-physical ability to receive store, retrieve and process information (Simon, 1983, 1991). Therefore when information is costly or harder to access, mental capacity of individuals to make rational choices is limited (North, 1995).

Theoretically, the three-fold benefits or effects of property rights in agriculture are a) security effect where tenure security means farmers can farm the same piece of land for a long period and therefore invest in it, b) gains from realisability or trade effect where, in the absence of rights to sell the land, cultivators will not be able to recoup the investments they have already made on the land at a later stage and c) credit supply effect where property rights enable the possessor to mortgage land to access credit (Besley 1995). Ownership of assets therefore affects the investment incentives of agents, access to resources such as credit and also reduces transaction costs. According to Bardhan (1989), missing markets (for credit and insurance due to credit supply effect) and informational constraints (due to uncertainties and environmental risks in agricultural production) give rise to informal agrarian institutional arrangements. Sharecropping interlocked contracts between labour, credit and land, among others, are examples of these. Despite their informal nature (illegality, unregistered business activities), informal institutions effectively serve a real economic function, and their abolition may be detrimental to individuals left out of markets (Mylène Kherallah & Kirsten, 2002).

Land is the single most important factor of production in agriculture. Factors influencing land ownership, distribution and size characterise the institutional environment in which agricultural production takes place. In other words, access to land lays the basis for production, exchange and distribution in the agricultural sector.

In the third chapter of this thesis, the distribution, ownership and size of agricultural landholdings in India will be discussed to understand the characteristics of this institutional environment. The influence of the institutional environment in shaping institutional arrangements is discussed in the next part of this section.

2.3.4 Institutional Arrangements

Institutional arrangements are rules, conditions and regulations designed for situations involving a subset of individuals or groups (Eaton et al., 2008; North, 1990). Menard (1997; pp 35) refers to these as instruments "to implement and operationalise the rules of the game as defined by the institutional environment". Markets, hierarchies and hybrids, according to this definition, can be seen as institutional arrangements (Lieberherr, 2009). They bring order into specific relationships by preventing potential conflicts that may be mutually damaging (Williamson, 2000). In this section, the role of institutional arrangements is specified with reference to the agricultural sector.

Markets are differently defined in various fields of social sciences, and there is no one universally accepted definition of markets as they are seen as structures with functions more than just the act of exchange (Huylenbroeck et al., 2009). Markets have been conceptualised as 'governance structures' regulating transactions (Menard, 1995), 'social structures' with an extended range of social interactions between individuals, communities and societies (Granovetter 1985; Swedberg 2005; Fukuyama 2002) and spaces where consensus over price and qualities are established (Hodgson 1999). According to Ostrom (1998), markets are places where different actors (buyers and sellers) encounter each other and perform transactions. She understands markets as 'action arenas' or social spaces in which actors interact, exchange goods and services, solve problems, dominate one another and also fight and compete. Markets, therefore, can be seen as institutional arrangements comprising of rules, regulations, norms, customs and relationships that help reduce transaction costs and enable exchange.

Hierarchies are centrally and internally coordinated and/or vertically integrated institutional arrangements (Finger et al., 2005; Hodgson, 2006; Williamson, 2005) which are designed to address transaction costs using incentives (E. Brousseau & Glachant, 2008; O. E. Williamson, 2005). Firms, according to New Institutional

Economics (NIE), are therefore hierarchies that organise and coordinate transactions (Coase, 1937). Institutional arrangements that are not markets or hierarchies by definition, but also serve the function of coordination of market activities and transactions, are referred to as hybrids (Menard, 2004, 2007). According to Menard (2004), the definition of hybrid is still vague because the vocabulary used to define hybrids "is not stabilised" (pp. 347). In institutional literature it has come to include clusters and networks (Hamilton & Feenstra, 1998), supply chain systems (Dorward et al., 2005), and non-standard contracts (Menard, 2004). In the study of institutions in the agricultural sector, institutional arrangements such as cooperatives and contract farming have been analysed as hybrids (Eaton et al., 2008b; FAO, 2013). Organisations for the delivery of public goods such as credit organisations, research and extensions services, public works departments and others that support markets and production are also referred to as hybrid organisations (Huylenbroeck et al., 2009; Kickert, 2001).

Agricultural markets in developing countries are often extremely complex and highly differentiated with pervasive power structures and different forms of exchange relationships, contracts and commodities[20] being transacted (Jan & Harriss-White, 2012; Sexton, 1990). In the agricultural sector, markets are far from perfectly competitive with incomplete information and insufficient feedback leading to high transaction costs (Pingali et al., 2005). Various types of organisations and hybrids 'coexist and persist' within the markets performing a number of different functions to deal with risks and transaction costs (Dorward & Kydd, 2005; Jan & Harriss-White, 2012). Private markets, moreover, provide only limited access to goods and services

[20] Exchange relationships or different forms of exchange in agricultural markets vary from advance contracts and vertically integrated contracts to barter and verbal agreements depending on the region and commodity being transacted. In research on the commodity markets in Tamil Nadu by Harriss-White (1996, pg 330), firms under the title of 'wholesalers', 'retailers' and 'processors' perform over 51 different activity combinations including storage, brokering, buying, selling, transportation and processing. Adding to the complexity is the high differentiation of commodities in agricultural markets. Different commodities and the varieties of the same commodity catering to specific consumers are also transacted in the markets through different marketing chains. In agricultural markets of south India, commodities like chewing tobacco have different channels of marketing depending on its variety, quality and cliental (Harriss-White. 1995 (a), pg. 578). Similarly, these markets have over 120 varieties of rice with 'limited substitutability' being transacted to different groups of buyers (ibid). These highly differentiated product markets, furthermore, do not have established grades and standards to determine the price or quality of the produce. In economies like India where the number of small producers are large, the relatively fewer buyers in the markets can exert oligopsonistic control over transactions, and the social and economic position of the seller is crucial. The functioning of agricultural markets, moreover, are influenced by social features such as caste, class and gender as well as transaction costs arising from property endowment, property rights and information access (Thorat & Newman, 2007). Therefore, power and power relations are pervasive in markets. Examples of the powerless in the markets are the involuntarily unemployed, the borrower rationed in credit markets or the buyer or seller constrained by price or budget that cannot sell or buy goods (Bardhan, 1989).

for small and marginal producers due to high transaction costs and low profits (Markelova et al, 2009). This is especially true for credit and input markets that are imperfect and biased towards the poor and rural regions in developing countries (Hoff and Stiglitz, 1990).

The role of the state is important in the access and distribution of goods such as credit, inputs and research and development (R&D) that the markets fail to provide. The high risks and low rate of returns often discourage private investment in these areas and, therefore, the state is often called upon to provide them (Dorward et al., 2005). In agriculture, the slow turnover of capital and the prevalence of climatic and market risks and limited surpluses restricts the scope of internal financing in small and marginal production, making access to credit and insurance necessary (Bardhan, 1989). Short term credit is often provided by parastatals such as rural and cooperative banks (Satyasai, 2008; Shetty, 2009). Research and extension services are another area where state intervention is necessary to improve production practices and yield in the agricultural sector. Here, again, the role of the state and parastatal organisations are important (Raina, 2003, 2011; Tossou & Zinnah, 2005). Research in India and in many other developing countries has shown that these hybrid institutional arrangements have a mixed record, and inefficiency in delivery, bureaucratization of their functioning and poor policy support hinder them from achieving their expected outcomes (Dorward et al., 1998; FAO, 2001; Kydd, et al., 2001; Macklin, 1992; Sulaiman, 2003; van den Ban & Hawkins, 1998).

In the agricultural sector, missing markets and poor market access has led to the emergence of alternative institutional arrangements. The absence of land lease markets has given rise to informal tenant farming and sharecropping contracts (Binswanger et al., 1995; Haque, 2000; Mearns, 1999), and the poor access of institutional credit (from banks and micro finances lending bodies, credit cooperatives) has led to borrowing from informal credit (moneylenders and other unregulated lending) institutions (Basu, 1997; Eswaran & Kotwal, 1989; Satyasai, 2008). These can also be seen as informal hybrid organisations in the agricultural sector and in a scenario of missing markets (land and credit) and informational constraints, they serve a real economic purpose and their abolition may not improve the conditions of agricultural producers (Bardhan, 1989).

In institutional literature, cooperatives (Menard, 2007) and contract farming initiatives (Clapp, 1994; Cook et al., 2008; Eaton et al., 2008; FAO, 2013) that organise collective action are categorised and analysed as hybrids. The role of these hybrid organisations is to enable vertical integration and coordination. Vertical integration is the "ownership and complete control over neighbouring stages of production or distribution" with the aim of reducing and controlling transaction costs within the boundaries of the firm (Perry, 1989: pg 186); coordination can be defined as a top-down, agency-led harmonisation of various activities of a particular organisation (Davies et al., 2004). In contract farming initiatives, the functions of producers, retailers, wholesalers are coordinated through contracts to ensure the supply of particular raw materials from farms to the final user (Bogetoft & Olesen, 2004; Eaton & Shepherd, 2001; S. Singh, 2002; Swain, 2011) as well as enable access to inputs and research and extension through cooperation (FAO, 2013; Glover, 1987; Key & Runsten, 1999).

Another element which is crucial for understanding how these hybrids function is the role of cooperation. Cooperation is characterised by bottom-up, farmer-to-farmer collaboration and linkages that are central to the undertaking of group-based activities (Davies et al., 2004). In any study of institutions organising collective action, it is crucial to identify the main functions and aims of the initiative. In this study, understanding how Producer Organisational Formats coordinate various activities in the upstream and downstream markets (access inputs, credit, extension and marketing services) and how cooperation is enabled (commitment to work together) within these groups are central. This helps to answer the question of how POFs are structured, and aids in understanding the conditions under which resources are allocated and incentives are aligned within POFs.

2.3.5 Resource allocation and incentive alignment in institutions

The fourth level of Williamson's model is the resource allocation and the incentive alignment level. At this level changes occur on a continuous pace as it involves the day-to-day operations of the economy (Lieberherr, 2009; Williamson, 2000). Here the performance of particular institutional arrangements is assessed, often in context of the outcomes in the first three levels and also with reference to the incentive structures they possess (Behera & Engel, 2006). Williamson (2000) states, this "is the

level at which neoclassical analysis works. Optimality apparatus, often marginal analysis, is employed, and the firm, for these purposes, is typically described as a production function" (pp.600). By assessing the resource allocation and incentive alignment of institutional arrangements, their 'efficiency' and 'effectiveness' are assessed (Lieberherr, 2009). In this context, efficiency can be defined as the perceived benefit provided by an institutional arrangement (Ostrom et al., 1994) and effectiveness as the outcome of efficiency, and often denotes the reduction of transaction costs in economic exchange (Greif, 2005; Lieberherr, 2009). In Producer Organisational Formats, the efficiency would be determined by how resources (e.g. inputs, credit, marketing services, research and extension) are accessed and distributed among members, and the changes they bring to surplus creation[21].

Producer Organisational Formats (POFs) are also hybrid institutional arrangements that perform both a coordinating as well as a cooperating role. The main purpose of these institutional arrangements is to coordinate transactions (agricultural markets), support production (research and development and extension services), provide services (credit, inputs) and also coordinate activities (POFs and other collective actions).

In sum, Williamson's Four-level framework, within the context of POFs, will help us to:

- Understand the context in which agricultural production takes place characterised by its institutional embeddedness and institutional environment
- Assess the challenges small and marginal producers face in agricultural production by determining the role and characteristics of institutional arrangements, such as markets, credit providing organisations, research and extension organisation
- Understand the role producer organisations play in addressing institutional challenges and the level of changes they can bring to households involved in collective action

[21] As employment and prices and quantities associated with it relate to firm and not to hybrids such as producer organisations, the main criteria for assessment would be resource allocation and incentive alignment.

The four-level framework however has the same limitations as the New Institutional Economics paradigm. As a positive theory, NIE has the potential to describe and explain how the world works in a value-free way, but as a normative theory its potential to explain how the world ought to be is severely limited[22] (Ghosal & Moran, 1996; Velasquez, 2008). In other words, although it sheds light on the reasons for the existence of hierarchies and hybrids, it tells very little about how they work or should work (Ghosal & Moran, 1996). On the same note, Platteau (2008) states that NIE is agnostic to institutional efficiency and does not clearly reveal how transaction costs are reduced and how hierarchies or hybrids are internally organised. As a result, NIE approaches can reveal little about how relationships between individuals, hierarchies and hybrids are structured (nature or rules and regulations, and social controls coordinating or hindering interaction) and how this may affect their capabilities and dispositions (Ghosal & Moran, 1996; Hodgson, 2010). This further leaves out the crucial issue of institutional complementarity which helps in understanding how different hierarchies reinforce or weaken each other (Aoki, 2001; Boyer, 2005). Therefore, this framework alone cannot shed light on how producer organisational formats emerge and are organised, how they are governed and reduce transaction costs and how coordination problems within these hybrids are addressed.

At the fourth level, assumptions regarding efficiency and effectiveness have also been considered problematic. NIE assumes that institutions are chosen for their ability to reduce transaction costs and bring about efficiency in an economic relationship (E. Brousseau & Glachant, 2008). However, it has been noted that institutions can exist without serving any function (ibid); they can survive due to "inefficient competitors, regulatory protection or legal barriers to exit" (Foss & Klein, 2008: pp 441), and institutions having served some purpose historically as a result of not changing can become inefficient, while continuing to exist (Platteau, 2008). It is therefore crucial to establish and define efficiency in the context of the institution's legitimacy and in relation to the aims and intent of the institution.

In order to answer the research questions of how POFs are structured and incentivised and how resources are allocated within them, the issues of a) how

[22] Positive theories can also be normative, but they are limitedly so. Transaction cost analysis has the ability to inform business decision makers (Rubin, 1993) and also "offers strategy a set of normative rules for choosing among alternative governance arrangements" ((Masten, 1993; pp 119).

institutional arrangements work/should work, b) their internal organisation, c) institutional complementarity and d) how efficiency and effectiveness are understood needs to be addressed. Due to the limitations of institutional theory to do so, collective action theory is used in this thesis to specify the third and fourth level of the four-level framework. The next section highlights the basic precepts of collective action to arrive at a specification that will help explore the influence of the institutions and how producer organisations are structured on organisational, social and economic terms. By complementing the four-level analysis with collective action theory, the context in which producer organisations exist can be assessed along with how they are organised and governed as collective actions in the agricultural sector.

2.4 Understanding institutional arrangements of collective action

Collective action is a voluntary action taken by a group of individuals to achieve a common goal, acting directly on their own or through an organization (Meinzen-Dick and Di Gregorio 2004). The initiative for collective action begins when two or more people agree to address a collective intention through a joint commitment (Gilbert, 2006). As argued in the previous section, organisations coordinating collective action can be seen as hybrid institutional arrangements that consolidate and coordinate collective intentions and joint commitments of a group to achieve common goals. In this way, POFs can be considered hybrid institutional arrangements in that they are designed to aid small and marginal agricultural producers by coordinating collective action. In this section, the phenomenon of collective action is studied to specify the third and fourth level of Williamson's Four-level analytical framework to help analyse how POFs are structured on organisational, social and economic terms.

The earliest systematic study of collective action in economics in the neoclassical tradition was done by Mancur Olson in his work, the "Logic of Collective Action" (1965). The controversial premise of Olson's argument was the 'zero contribution hypotheses,' which stated that:

> Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interest (pp.2).

Olson argued that when a particular good or service can be obtained by an individual without contributing to its production or access, they would 'free-ride'. Olson's assertion that collective action was unnatural, and that human beings were 'self-interested' individuals who would not act collectively problematized the phenomenon of collective action for political and social theorists more than for economists (R. Hardin, 2013). Prior to this work, the tautological assumption was that people with common interests would naturally associate and work with each other to attain their common aim (Oliver, 1993). Since pre-historic times, individuals were thought to have pursued self-interest and collective action in activities such as defence, food acquisition and child-rearing, contradicting the self-interest paradigm (Ostrom, 1998a). In the present day, individuals are thought to systematically use collective action to provide public goods and manage common pool resources without any external authority imposing sanctions (Agrawal, 2001; Ostrom, 2010; Poteete & Ostrom, 2004). These contradictory theorizations about self-interest and collective action has led to numerous field researches and controlled laboratory experiments on collective action to reveal under what conditions collective actions succeed and when they fail (R. Hardin, 2013).

Many studies on collective action point out that its potential to succeed hinges on how institutional arrangements coordinating them resolve 'social dilemmas' that may hinder group action (Udehn, 1993). Social dilemmas are situations or conditions in which individuals make independent choices in interdependent situations (Dawes, 1975). In other words when individual's interest or actions are not in line with the interest of the group or its common goal, this leads to social dilemmas (Irwin & Simpson, 2013; Olson, 1965; Poteete & Ostrom, 2004). Shirking or evading responsibility in group-based activities (Alchian & Demsetz, 1972; Brehm & Gates, 1999; Tomohara & Ohno, 2013), free-rider problems or acquiring benefits of collective action without contributing to it (Grossman & Hart, 1980; Schneider & Pommerehne, 1981; Siegel, 2012) and moral hazard problems or undertaking an action knowing that its cost or consequence will be paid by someone else (Anesi, 2009; Hölmstrom, 1982; Hölmstrom, 1979) are all different forms of social dilemmas. The existence of social dilemmas in collective action shows that individuals acting 'rationally' or in self-interest in the economic sense could result in outcomes that make them worse off collectively (Ostrom, 2010).

Collective action theory has been used to study group phenomena ranging from social movements (Diani & McAdam, 2003; Hechter, 1987; Tilly, 1978) and riots (Tullock, 1971; Silver, 1974), to management of common pool resources (Agrawal & Ostrom, 2001; Jodha, 2002; Krishna, 2002; Uphoff, 2000; Wade, 1994) and agriculture (Huylenbroeck et al., 2009; Meinzen-Dick, DiGregorio, & McCarthy, 2004; Staatz, 1987; Vanni, 2014). Additionally, it has also been used in studying economic associations, entrepreneurial groups and cooperative action (Francesconi & Heerink, 2010; Ruef, 2010; Wollni & Zeller, 2007), along with CSR and global value chains (Lund-Thomsen & Nadvi, 2010) among other studies in various social science disciplines.

Due to its context specific nature, attempts to develop a single theory explaining the dynamics of collective action, have long been considered futile and discarded by most scholars (Ostrom, 2003). With decades of empirical research underpinning it, studies have moved beyond Olson's basic questions of whether collective action is rational to acquiring deeper understandings regarding conditions that influence collective action and the institutions that enable it (ibid). The larger concerns of studying collective action and institutions of collective action are with regards to how they are initiated and coordinated, in addition to the context specific factors affecting the interaction between involved actors and when and why people free-ride (Oliver 1993). These concerns and questions have varying answers depending on the conditions and circumstances under which collective action takes place. Therefore, studying collective action requires: a) conceptualising collective action in the context of the research and b) developing an analytical framework that would help carry out an empirical enquiry (Meinzen-Dick et al., 2004). With reference to this research on POFs, collective action theory will help understand the potential of the initiative (how they work or should work), how they are organised and how effective they are and complimenting the four-level framework. The following part of this section will first conceptualise collective action in relation to the agricultural sector, and then continue by specifying an analytical framework upon which data was collected to study Producer Organisational Formats in south India.

2.4.1 Type of goods and conceptualisation of collective action

As mentioned above, Producer Organisational Formats (POFs) are hybrid organisations of collective action with the purpose of achieving an economic goal of

increased viability for its members. Therefore the goal of collective action which is central to how these organisations are structured becomes important. The main aim of POFs is to provide goods to their members that would enable them to enhance production, create surpluses and improve livelihoods. A 'good' in economic terms is a consumable item (commodity or service) that an individual wants or needs that can increase her/his utility, and the opposite of an economic good is a 'bad' which decreases individual utility. Public economists first classified goods to ascertain their basic characteristics (private and public) and to determine how efficiently they could be distributed through state or market mechanisms.

Samuelson (1954) was the first to categorise private consumption goods and public consumption goods based on "jointness of supply", which denotes a condition where the consumption of a good by one individual does not reduce the availability of that good for another person (e.g. air, public radio, national defence). The good, therefore, can be considered a public good due to its non-rivalrous nature. Richard Musgrave (1961) uses "excludability" as the differentiating factor between types of goods. He reasoned that if an individual or a group can be excluded from the consumption of a good, it was a private good; and if they cannot be excluded from consuming it, then it was a public good. The main reason for this classification of goods was to determine which goods could be effectively distributed by the markets (Ostrom, 2003).

Figure 2.4 classifies goods according to the rivalrous and excludability characteristics discussed above. Samuelson argued that only rival goods (goods in the left column - Cells A and C in figure 2.3) could be allocated efficiently through markets, while Musgrave concluded that only excludable goods (goods in the top row - Cells A and B) were best allocated by the markets (ibid). The Samuelson-Musgrave debate helped clarify the conditionality of two sets of goods – pure private goods (Cell A) and pure public goods (Cell D)[23].

Goods classified as non-excludable and rival (Cell C) are known as 'common pool resources' (CPR) or commons. These goods are rivalrous because one person's consumption subtracts from the total availability of the resource of another. Examples

[23] A commonly quoted example of a pure public good is of a lighthouse or a public radio. The benefits of a lighthouse or a public radio are open to all and its consumption by one individual does not reduce its utility for another individual nor can individuals be excluded from using them.

of CPR goods are forests, grazing grounds and water resources such as ponds and lakes. The fourth group of goods are known as club goods, characterised as being excludable and non-rival (Cell B). Cable television and club memberships are examples of club goods.

Figure 2.4: Classification of collective action problems

	Rival	Non-Rival
Excludable	CELL A: Private goods (Food, clothing, cars etc.)	CELL B: Club Goods (Cinema, private parking, club memberships)
Non-Excludable	CELL C: Commons (Fish stock, ground water, irrigation systems, forest resources etc.)	CELL D: Public Goods (Free to air TV, national defence, lighthouse)

The classification of goods is essential in understanding the nature of collective action and how POFs are organised. The type of good a group of individuals chooses to jointly access greatly determines the social dilemma or collective action problems the group faces. The most common and widely studied forms of collective action initiatives have been in the management of CPR, where over-exploitation and under-utility of resources are pervasive in the absence of established property rights (Agrawal & Ostrom, 2001; Mwangi & Markelova, 2009). With CPR, individuals cannot be excluded from using or prevented from overusing a rivalrous resource leading to the 'tragedy of commons[24]' where they are helplessly trapped in social dilemmas and cannot extricate themselves (Ostrom, 1998, 2010). In the absence of property rights, markets cannot effectively distribute these resources as in the case of private goods, and the need for external agents like the state, firms or other institutional arrangements of collective action become necessary (Ostrom, 1990).

[24]Garrett Hardin (1968) in his article in *Science*, explains the 'tragedy of commons' with a hypothetical example of a village grazing ground, where the optimum number of cows that can graze there is 10. If the number of cows is less, there will be areas that will be overgrown and wasted. If there were 11 cows the grounds would be overgrazed and lead to lower benefits per cow. He sums up his example as a tragedy and the need for a fine balance:

> "Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own interest in a society that believes in the freedom of the commons." (Hardin, 1968).

These studies proved that in the absence of property rights which were deemed necessary in the transaction cost approach, norms and other informal mechanisms could regulate economic activities.

Collective action enabled through producer organisations in this study, therefore, is conceptualised as hybrid organisational arrangements that provide multiple public, private and club goods and services to their members which are essential to improve production and distribution. Collective action carried out by producer organisations are defined using Heckathron's (1993) definition of collective action that includes three conditions that: a) goods should be jointly produced and accessed by members of the group, b) the accessed collective good needs to be made available to all participants of the group and c) there must be a cost involved in the production or access of the collective good.

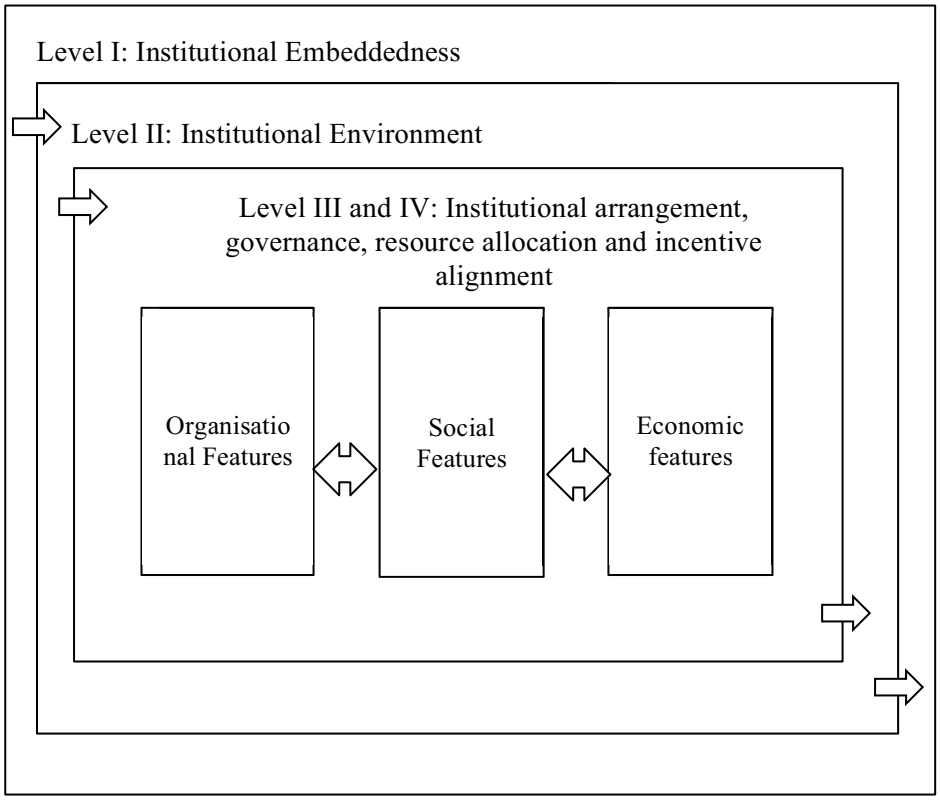
2.4.2 The structure of collective action

Olson's work is significant because it highlighted certain core characteristics that influenced collective action. Due to the persistence of collective action, problems and the propensity of individuals to free-ride, the emphasis and importance of institutional arrangements governing collective actions have emerged as important in many studies of collective action (V. K. Aggarwal & Dupont, 1999). A large number of studies have been done on institutions coordinating collective action in CPR management that has helped expand the theoretical understanding of how these institutions emerge and organise. Despite large number of studies being carried out, the variables and features that influence collective action in many of these studies are defined differently (Poteete & Ostrom, 2004). Consequently, case studies become important in the analysis of collective action (Poteete & Ostrom, 2008). Research that uses large number of case studies (Baland & Platteau, 1996; Ostrom, 1990) to compare processes and outcomes of collective action, moreover, have more consistency in concepts and terminology (Agrawal, 2001a). These terms and concepts are constructed with the help of empirical data as well as game theoretical and experimental models that aim to determine how individuals behave in groups and under different resource conditions (Poteete & Ostrom, 2008).

Arun Agrawal (2001), in his literature review of studies of institutions managing CPR across the world, classifies factors determining collective action into four

variable sets, namely resource characteristics, group characteristics, institutional arrangement and external environment. These variable groups were taken mainly from the three major works on CPR management by Elinor Ostrom (1990), Robert Wade (1988) and J.M. Baland and J.M. Platteau (1996). The merits of Ostrom's and Baland and Platteau's work was that they compared a large number of case studies to test the influence of different characteristics of groups in different situations (geographical and resource situations), while Wade's work explored a single region in-depth to uncover insights into the dynamics of collective action. By reviewing these works and considering the specific resource differences of the agricultural sector compared to common pool resources, this study developed an analytical framework that identifies three sets of features that determine how collective action is structured: the group's a) organisational features (e.g. external support, rules and regulations, past experiences, organisational structure, interest heterogeneity of participants, leadership) b) social features (e.g. social heterogeneity, social capital, norms) and c) economic features (e.g. economic heterogeneity, type of goods, distribution of goods, resource endowment of groups). This in turn helps to add specification to the third and fourth level of the four-level analytical framework that tries to understand how these institutional arrangements are structured (Figure 2.3). The next three parts of this section explain how this framework is constructed to delineate the organisational, social and economic features that influence the coordination of collective action.

Figure 2.5 Specification of the structural and governance level of collective action



2.4.2 Organisational features

The organisational features of a group coordinating collective action determine how they are governed. In order to manage the creation, acquisition and distribution of collective goods, initiatives such as the POFs have to be designed to address social dilemmas such as free-rider problems and shirking. The governance of such initiatives entails the regulation and control depending on external support, group size, rules and regulations, past experiences and leadership.

How institutional arrangements come about by obtaining commitments of various participants and how actions of various stakeholders are coordinated is important when studying collective action (Ostrom, 1990). The emergence of institutions coordinating collective action, however, needs to be understood on a case-to-case basis as the impetuses vary widely. External support in the emergence of collective action organisations are crucial, with various sources of institutional supply manifesting through the state (Baland & Platteau, 1996), through non-governmental

organisations or NGO initiatives (Coulter et al, 1999; Thorp et al, 2005) and through the action of privileged groups (Olson, 1965). A privileged group is a small group of individuals who stand to gain more from coordinating collective action than the average participant, and therefore has more incentive to coordinate collective action (Olson, 1965; Reuben & Riedl, 2009). The nature of external support of the organisation determines whether the collective action is a *cooperation* (similar to cooperatives) or *coordination* (similar to contract farming initiatives) or a mixture of both (Davies et al., 2004). This will determine whether collective action is directly controlled by participants, by a civil society, the state or privileged groups (Vanni, 2014).

In Olson's work on collective action, the size of the groups involved in collective action was an important attribute that influenced the zero contribution thesis. His argument was that when groups are large, contributions of individuals involved go unnoticed increasing their propensity to free-ride. Mitchell, (1979), R. Hardin (1982) and Marwell et al (1988) strongly assert that when there is a case of a good having pure 'jointness of supply' and an individual's use does not reduce the availability of that resource for others, the size of the group is irrelevant. Marwell & Oliver's (1993) work shows that the size of group has a variable effect on collective action depending on the goods they access. There is a negative size-effect when the benefits of groups from collective action decrease with increasing group size. A positive group- size effect is where the benefits of individuals increase with larger membership (for example, mass political movements and riots). Group size may also have no size-effect if the level of benefits to members of the group is not affected by the size of the group. Social dilemmas such as free-rider problems, shirking and moral hazard may not be severe in groups with positive size-effects and no size-effects. However in groups, such as clubs, where overcrowding reduces utility size, effect is relevant (Buchanan, 1965; Marwell et al., 1988; Ng, 1973).

Rules and leadership are important organisational features in the management of institutional arrangements coordinating collective action. Rules and regulations in a group or organisation are considered rational controls that are used to prevent opportunistic behaviour (Dow, 1987). Rules are enforceable shared understandings "that certain actions in particular situations must, must not, or may be undertaken and that sanctions will be taken against those who do not conform" (Ostrom, 1998 pp.

10). Simple and clear rules to govern initiatives are important to reduce information asymmetry problems in regards to expected behaviour and regulations in the groups (Baland and Platteau, 1996). Ease of enforcement of rules and systems of sanctioning are also important when the consequences of free-riding are high in groups (Wade, 1988; Ostrom, 1990; Baland and Platteau, 1996).

Another important organisational feature in collective action is appropriate leadership. Leadership aids in the mobilisation of members and in the formation of important linkages with the state and markets (Markelova et al, 2009). Appropriate leadership is also essential to identify and respond to changes in the institutional environment, such as policy change and changes in the markets that individuals or groups may not have the ability to cope with (ibid). Leadership also helps coordinate commitment by reconciling the interests of local traditional elites that may have an influence on initiating or stalling collective action (Baland and Platteau, 1996). Considering the importance of organisational features in enabling and coordinating collective action, it is important to see the prevalence of these features in POFs.

Experimental studies using laboratory set games such as prisoners' dilemma[25] games have helped uncover trends on how individuals behave in groups and interact with each other using previous experiences of cooperation and non-cooperation (Axelrod, 2006; R. Hardin, 1982; Taylor, 1987). These studies find that information of past actions builds trust and helps solve social dilemmas in collective action through reciprocity or tit-for-tat responses. It may also weaken the motivation to cooperate collectively if individuals have had poor experiences of cooperation, and when opposition norms are present. These norms emerge when rules are in conflict with interests and identities of individuals (Nee, 1998). Previous experience of organising is of heuristic importance in groups in which heuristics are 'rules of thumb' that are learnt from previous experiences and continuous trial and error.

Successful collective action needs to effectively address and prevent social dilemmas to bring benefits to stakeholders. Here the organisational structures of collective

[25]Merill Flood and Melvin Dresher first propounded the prisoner's dilemma game in 1950 to elaborate the role of cooperation and to show conditions when cooperation and defection takes place, and what were their consequences. "In the Prisoner's Dilemma game, there are two players. Each has two choices, namely cooperate or defect. Each must make the choice without knowing what the other will do. No matter what the other does, defection yields a higher payoff than cooperation. The dilemma is that if both defect, both do worse than if both had cooperated" (Axelrod, 2006: pg 6-7)

action initiatives become important. The two sets of organisational features identified here are the ones that determine the characteristics of collective action (i.e. external support, size, past experiences and interest heterogeneity) and characteristics that determine how they are governed (i.e. rules and regulations and leadership). There may be close interaction between these two sets as the nature of rules and regulations may be determined by size, interest heterogeneity and past experiences. Similarly, leadership may be influenced by the nature of external support (coordination or cooperation). These relationships need to be uncovered when examining the empirical cases. Institutional arrangements that coordinate collective actions are also influenced by the social context in which they are situated in. Therefore, the social features of the groups become important in determining how these initiatives are coordinated. The next part of the section deals with the social features that influence the functioning of collective action.

2.4.3 Social features

The importance of social features in the organisation of collective action is evident from studies which show that self-organised institutional arrangements of collective action formed on custom rules and conditional cooperation, or norms of reciprocity, have succeeded where state-initiated formal institutions have failed (Berkes, 1989; McKean & Ostrom, 1995). Mark Granovetter's (1985) study on the relations between economic action and social relations illustrate that an individual's decision to act economically cannot be understood in isolation to their social context. He elaborates how networks of personal relations and their density generate trust and discourage malfeasance in groups enabling better cooperation. These studies point out that social capital plays an important role in cooperation. Social capital comprises of networks, norms, trust, values and understandings that facilitate and enable coordination and cooperation among groups (Keeley, 2007; Putnam, 1995). Educationist L.J. Hanifan coined the term 'social capital' to highlight the role of community involvement in the success of local schools in Virginia (Putnam, 2000). Social capital has gained wide application in social sciences and empirical analysis have used it as a dominant determiner in climate change (Adger, 2003), economic development (Krishna, 2002; Deepa Narayan & Pritchett, 2000; Woolcock, 1998), education (Coleman, 1988) common pool resource management (Krishna & Uphoff, 1999; Ostrom, 2000b) and democracy (Putnam, 1995).

The study of social capital has helped in understanding how people interact and cooperate in well-defined social groups, networks and social structures to attain individual and collective benefits (Brunie, 2009). The three main features of social capital according to Putnam (1995, 2000) are norms, trust and networks. Norms are internal valuations (positive or negative) about a particular action accepted by a group, and since they are learnt from one's milieu they differ across cultures, actions and situations (Ostrom, 1998). Trust, according to Glaeser et al (1999), is "a commitment of resources to an activity where the outcome depends upon the cooperative behaviour of others" (pp. 3). Networks are links between groups or individuals (Keeley, 2007) and are reinforced by personal relationships, norms and trust. Social capital is conditioned by traditional social structures such as race, caste, class and gender relations in society (Jennings, 2007; Krishna, 2000).

In collective action, the role of social capital is crucial to enable cooperation. Social capital can be an effective mechanism through which behaviour in groups can be influenced and coordinated. In this regard, previous experiences (both good and bad) are crucial (Axelrod, 2006; Taylor, 1987). Norms of reciprocity conditioned on individuals' previous experience in organising predisposes individuals to cooperate, restrain opportunistic behaviour and reinforce trust (Ostrom & Ahn, 2008). Wade (1988), in his study of collective management of irrigation systems in South India, and Baland and Platteau's (1996) review of a large number of cases of commons, reveal that the role of social capital and experience from previously successful initiatives have great influence in the organisation and functioning of collective action. Paul Collier (1998) highlights three economic benefits of social capital as a) transmission of knowledge about the behaviour of others leading to reduced opportunism, b) reduced information asymmetry through the diffusion of knowledge of markets and technology and, therefore, reducing market failures and c) reduced problems of free-riding facilitating collective action.

Norman Uphoff (2000) differentiates collective action enabling social capital into two categories: the structural and cognitive forms. The structural form of social capital *facilitates* mutually beneficial social capital through established social norms and networks that are characterised by rules, procedures and precedents; the cognitive form of social capital *predisposes* people towards collective action through shared values, attitudes and beliefs (Uphoff, 2000). Social capital in groups may influence

and reconcile heterogeneities and aid in communication which are important structural variables in collective action. Since past organising experience also contributes to social capital, it leads to relationships of reciprocity within groups. Various studies such as those cited above have attempted to theorise how social features of networks, norms, trust and social capital are essential in enabling, supporting and sustaining collective action. The social composition of the groups based on the heterogeneity of social characteristics may influence how social capital is created and maintained in groups.

Social capital in collective action through networks, norms and trust is crucial to the functioning of groups. It helps impose social control and limit self-interested behaviour (Ouchi, 1980). Social controls are different from rational control which comprise rules and regulations, and in both formal and informal institutions they play a crucial role in regulating how individuals behave (Ouchi, 1979). The role and functioning of social controls are often outside the ambit of transaction cost assessments (Ghosal & Moran, 1996). By assessing social feature of various groups, this study sheds light on the nature and influence of social capital in producer organisations, and how they predispose or facilitate collective action. How social controls and rational controls in groups interact in the functioning and governance of groups will also be interesting to observe.

2.4.4 Economic features

The primary difference between common-pool resources based institutional arrangements coordinating collective action and Producer Organisational Formats (POFs) is the nature of collective goods accessed by them. POFs are initiatives that jointly access private goods (inputs, credit, private sector R&D, and market information), public goods (public sector agricultural research and development and information, subsidies, markets) and CPR (irrigation facilities and other water resources) to improve production and sales to bring benefits to stakeholders who have been excluded due to distribution failures, missing markets and market imperfections. CPR collective actions, on the other hand, are designed to jointly access commons such water and forest resources and grazing lands and pastures, which are defined by the absence of property rights. Therefore in organisations coordinating collective action, the type of good that is provided to members becomes important as well as how it is distributed to all members.

Collective actions in agriculture production vary with many initiatives concentrating one activity, such as marketing, extension services, credit provision and input provision. Such studies tend to focus on outcomes of collective action in the form of welfare gains from accessing extension services (Ortiz, 2000; Willy & Holm-Müller, 2013), improved market access (Fischer & Qaim, 2012b; Shiferaw, Hellin, & Muricho, 2011; Trebbin & Hassler, 2012), gender and technology access (Fischer & Qaim, 2012a; Mwangi & Markelova, 2009) and credit access (Sanyal, 2009). Other studies have borrowed heavily from common pool resource literature to understand how collective actions providing multiple goods and services are coordinated (Markelova et al., 2009; Meinzen-Dick et al., 2004).

Specification of the economic feature of POFs while studying collective action is crucial as the goods accessed by them differ from collective actions in common pool management. The main economic features of POFs are determined by the type of goods they access, the nature of resource endowment of the groups, how goods are distributed within the groups and also by the changes in surplus at the household level. Furthermore, the classification of goods is essential in understanding the nature of collective action and how they are organised. The type of good a group of individuals chooses to jointly access greatly determines the social dilemma or collective action problems the group faces (Ostrom, 2003). Public goods and club goods by definition are not always marketable, and markets are not an efficient way to distribute them. In such scenarios, the political economy process is important in its distribution (Coase, 1974). However, the failure of the state to effectively provide and distribute public goods will lead to underdevelopment and poor growth in an economy. For example, the failure to provide and distribute public goods, such as research and technical knowledge and subsidies in agriculture, can hinder sectorial growth and development when specific groups that depend on them are excluded (FAO, 2001; Vanni, 2014).

Although private goods are distributed through the markets, the failure of markets to provide quality inputs (e.g. missing markets in essential private goods such as institutional credit) essential for agricultural production again lead to decreased utility and poor growth and development in the sector. As a result, collective action becomes necessary in a situation where a community or a group of people are deprived of a certain kind of private or public good (Staatz, 1987; Vanni, 2014). The

provision of essential private and club goods is the essential economic purpose of producer organisations. Thus, when assessing the economic features of POFs, it is crucial to determine the main collective goods they provide to improve production and marketing of goods.

In this section, the structural characteristics of collective action (organisational, social and economic features) that determine how collective action initiatives are coordinated and maintained were discussed. Structural variables fundamentally help in establishing and understanding the type of collective action taking place, the nature of social dilemmas that could emerge and the potential challenges that may occur in the organisation of collective action. Institutions that enable collective action resolve social dilemmas using mechanisms that consider the influence of these structural variables on the behaviour of individuals participating in them. In this thesis, different case studies of POFs will be assessed for the presence or absence of these features and their influence on the groups and their functioning. Table 2.1 summarises the structural features of collective action. These variables will be used in this study to understand how POFs are structures as organisations of collective actions. The next section of this chapter identifies the factors that need to be considered when assessing resource allocation and incentive alignment in POFs.

Table 2.1 Structural features of collective action

Organisational	*Social*	*Economic*
• External Support • Rules and regulations structures, leadership • Experience • Group size	• Networks • Norms • Trust • Structural social capital • Cognitive social capital	• Type of goods (public, private, common, club) • Production cost and price realisation

2.5 Resources allocation and incentive alignment in collective action

Along with an understanding of how collective action is structured on organisational, social and economic terms, it is crucial to determine if the economic goals for

organising are realised through the allocation of resources, and how incentives are aligned to sustain the collective. The fundamental role of POFs is to bring about changes in production cost and price realisation to improve viability of small and marginal farm production. In the four-level analysis of institutions discussed above, the fourth level deals with the determinants of institutional performance. At this level it is important to see how resources and collective goods are allocated within the group and how incentives to participate in collective action initiatives are also aligned (Lieberherr, 2009; Williamson, 2000). In this section, the factors influencing resource allocation in groups, including incentive structures, are discussed. A justification of carrying out a marginal analysis is also done in order to specify the fourth level of institutional analysis.

Increased viability for members effectively depends on how collective goods accessed by the initiative are allocated to members. Initial endowment of resources and heterogeneity of resources among members may influence how goods are distributed. Initial resource endowment refers to the amount of resources an individual possesses (land, irrigation) or commands (access credit, information and markets) before participating in collective action. Resource heterogeneity refers to differing initial endowment among individual members participating in collective action. Literature of club goods sheds light on the nature of resource endowment and its influence on participating members. Scholars like Ng (1973) and Oakland (1972) argue that mixed clubs (heterogeneous groups) can be optimal when participating in collective action. Cornes and Sandler (1994), clarifies this assumption by stating that allocation of resources in heterogeneous groups depend on ‘fixed’ or ‘variable’ utility of collective goods. Utility is fixed when all members irrespective of size have the same entitlements to a particular resource or goods, while variable utility would mean that the level of entitlements to resources depend on resource endowment of members (ibid). In the case of POFs, fixed utility would mean that all members have equal access to resources that are made available to the groups. In a scenario of variable utility, members with higher levels of initial endowment and resources may benefit more from collective goods, making them the privileged group in collective initiatives. As discussed in section 2.4.3, privileged groups have more incentive to organise and therefore initiate and sustain collective action.

Initial resource endowment may also determine the level of economic and social power different members in a group possess. Participants in collective action can be heterogeneous in two distinct ways: in relation to their resources they possess and their level of interest to participate in collective action. These two ways, however, are related. Studies on common pool resource management in India and around the world has shown that members with greater power may appropriate more benefits from initiatives than members with lesser power (related to resource size) leading to social dilemmas in distribution (Agrawal, 2001a; Wade, 1994). Belonging to a higher caste or being male in patriarchal societies may also influence the economic power of individuals and their ability to access resources (Agarwal, 2010; Bandyopadhyay & von Eschen, 1988). Different members in POFs may have different resource endowment in terms of landholding sizes and access to irrigation which may give them more power over other members in the group.

Granovetter (1978) and Oliver et al (1985) opine that interest heterogeneity or differing levels of interest to cooperate amongst group members can play an enabling role in collective action. Decisions to initiate collective action may rest on a group of highly motivated individuals or privileged groups who have more interest and agency than other members. They make up the 'threshold' (Granovetter, 1978) or 'critical mass' (Oliver et al, 1985), of the initiative. Although homogeneous interests may lead to increased cohesion within groups, sometimes heterogeneity in groups (e.g. privileged group influence) are necessary for its emergence. However, when collective action is coordinated, social and economic power in groups may need to be reconciled to incentivise members with lower resource endowment to participate in collective action.

Therefore, the success of collective action crucially hinges upon the incentives heterogeneous members have in participating in them (Marwell & Oliver, 1993). Clark and Wilson (1961) in their study of organisations lists three kinds of incentives that are crucial to encourage participation: material, solidary and purposive incentives. Material incentives are tangible incentives given in utilitarian organisations (business firms, trade unions, trade associations) like salaries, bonuses and other fringe benefits. In collective action the material benefits accessed by groups and how they are distributed among members would form the material incentives of collective action. Solidary incentives are intangible incentives that sustain solidary

organisations (e.g. social clubs, voluntary organisations, colleges, universities, etc.) where rewards are non-monetary in the form of friendship, respect, sense of group solidarity and status. The social features and the level of social capital possessed in groups would form the solidary incentives in POFs, and it would be crucial to see how this is developed and sustained in groups. Purposive incentives are, again, non-tangible incentives characterised in purposive organisation (e.g. groups formed for a specific purpose like social change). Where the purpose has become the central component for organising, the achievement of the purpose is incentive in itself.

How goods are distributed in groups and the changes it brings to production and distribution costs to individual farmer households would determine the level of material incentives in initiatives. The cost of accessing collective goods should effectively be lower than accessing them individually. A marginal analysis to identify changes in production and marketing costs through provisions, such as better access to markets, better information, technology adoption and higher bargaining power, can help determine the changes in profit at a household level. This study, therefore, carries out a marginal analysis in each of the cases using production data collected from farmers participating in POFs to determine the level of change collective action has brought about and determine the material incentives for organising.

2.6 Conclusion

This chapter argues for an analytical framework that combines collective action theory and institutional theory to help understand how Producer Organisational Formats in places such as Karnataka and Tamil Nadu are structured, and how resources are allocated and incentives aligned to enable successful collective action. Collective action is a complex phenomenon as there are a large number of organisational, social and economic factors influencing their outcome. Although collective action theory developed to study common pool resources helps identify the main features influencing them, the variation of the production conditions of agriculture and the differing institutional context in which producer organisational formation takes place may have differing effects on collective action in the agricultural context. Many influential works on collective action and the theoretical contributions they have made do not focus on the context in which collective action

takes place. For this reason, institutional theory was combined with collective action theory to help assess this institutional context.

Using Williamson's (2000) four-level analysis, the framework aids in identifying the institutional embeddedness, institutional environment and institutional arrangements in which agricultural production takes place and POFs exist. This forms the first three levels of the analysis. However, the third and fourth level needs to be specified in relation to the topic and area of study and collective action theory add specification to this model. Reviewing literature on collective action and works on the management of common pool resources this chapter highlight the main organisational, social and economic features that influence the structure and governance of POFs as hybrid institutional arrangements. The characteristics of how resources are allocated and how incentives are aligned in groups are also reviewed to specify the fourth level of analysis. This institutional and collective action theoretical framework forms the basis on which the case studies in this thesis are analysed. In the next chapter, the institutional embeddedness, environment in which agricultural production takes place and the institutional arrangements that support it are discussed to establish the institutional context of POFs in India. This will help determine the challenges that the agricultural sector and small producers face, as well as the role and relevance of POFs in coordinating collective action.

Chapter III: The context and conditions of agricultural production in India

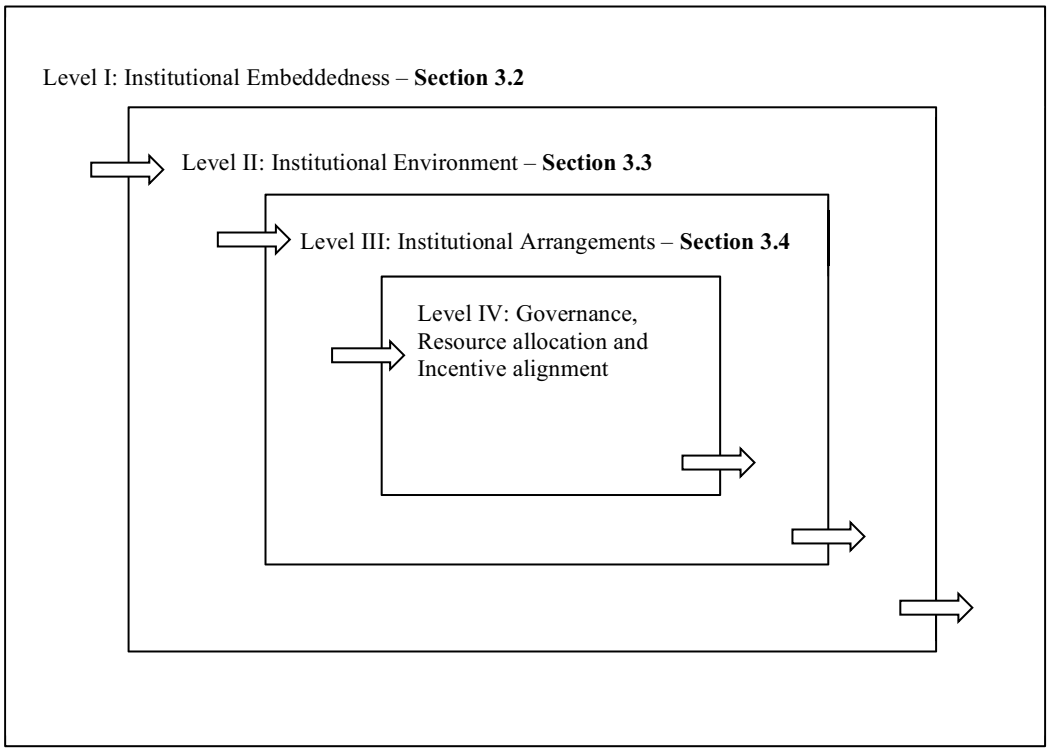
3.1 Introduction

Agricultural production is influenced by a unique set of production conditions associated with seasonality and geographical dispersion and risks associated with the climate, climate change and commodity market uncertainties. This makes agricultural production a complex economic activity and characterises the institutional context in which it is situated in. An assessment of the institutional context will help reveal the features and challenges of small producer agricultural production in India. The main purpose of producer organisational formats is to address some of these challenges that their members face in agricultural production. Therefore an assessment of this context is important to understand how collective action is coordinated among agricultural producers, and how they are structured in organisational, social and economic terms. As collective action theory is limited in explaining this context, the analytical framework developed in the previous chapter combines institutional theory with collective action theory to address this. The institutional context of agricultural production is characterised by the institutional embeddedness of agricultural production, the institutional environment that influences it and various institutional arrangements crucial to production and marketing of agricultural goods. The aim of this chapter is to look at the institutional embeddeness, environment and arrangements of the Indian agricultural sector in order to establish the context in which agricultural production takes place. This will help situate the four cases that are discussed in chapters four and five and help to understand the influence of the institutions on the manner in which collective actions in Producer Organizational Formats (POFs) are structured. Institutions that influence agricultural production are assessed at the national and at the state levels, where the POFs are located.

This chapter comprises of three parts, and figure 3.1 depicts the different aspects of the theoretical framework discussed by each section. Section 3.2 discusses the institutional embeddedness of agricultural production. Here the role that caste, class and gender play on the social conditions influencing agricultural production is

discussed. This helps in understanding the role of the social context and its influence on the institutional environment and various institutional arrangements in the agricultural sector. Section 3.3 discusses the institutional environment in which agricultural production takes place. Land distribution patterns in India and in Karnataka and Tamil Nadu, and land rights in agriculture that characterises the institutional environment are discussed this section. Section 3.4 assesses the structure and characteristics of credit institutions, research and extension, institutions and markets as institutional arrangements in Indian agriculture. This is done to identify the major challenges small producers face in accessing them, and also to ascertain the conditions collective action can potentially address or need to address.

Figure 3.1 Analysis of institutions influencing agricultural development



3.2 Institutional Embeddedness - Social context of agricultural production in India

Institutions are also 'social systems of production' that are integrated into the social configuration of a country or region (Hollingsworth & Boyer, 1997). An understanding of the social influences in agricultural production is therefore

important. In India, the social context in which production takes place determines access to resources and the ability of producers to manage risk (RFST, 2005; A. Sen, 2000; Thorat, 2009). In India, the social context is characterised by the role of caste, class and gender influencing access to land, exchange relations and also an exclusionary role in society by determining access to credit, markets and information. This section describes the institutional embeddedness characterised by caste, class and gender and the influence on the agricultural sector. The role these institutions play is crucial to understand the social influences in agricultural production.

3.2.1 Caste, class, gender and the embeddedness of agricultural institutions

The caste system has long regulated economic and social life in India as a traditional hierarchical order of social groups that determine the economic rights (e.g. occupation and property rights) of individuals by birth (Lal, 1989; Scoville, 1991). The caste system or *Varna* system formally comprises of four categories: the *Brahmins* (priests and the learned), the *Kshatriyas* (warriors), the *Vaishyas* (traders and merchants) and the *Shudras* (artisans and manual labourers). The fifth category of the 'untouchables' were outside the caste system, performing menial work such as scavenging and other activities that were considered unclean. This group is constitutionally referred to as the Scheduled Castes (SCs) (Banerjee and Knight 1985). Another group of people outside the caste system were the tribal people who lived in in relative autonomy in their political and cultural systems referred to as the Scheduled Tribes (STs) (Yadav, 2002). The different *varnas* are further subdivided into *jatis* or sub-castes, and in India today there are presently thousands of *jatis*.

A majority of field workers, rural artisans and small farmers belong to the Other Backward Castes or OBCs (Jaffrelot, 2000). This group comprises of castes that are above the SCs and the STs, but below the forward castes of the Brahmins, Kshatriyas and the Vaishyas (ibid). According to the National Sample Survey Office (NSSO), 'Key Indicators of Situation of Agricultural Households in India' (2014)[26] about 45 per cent of the total agricultural households in India belong to Other Backward Classes, 16 percent to Scheduled Castes and 13 percent to Scheduled Tribes (ST).In rural India, the OBCs have emerged to be a politically and socially powerful due to

[26] http://mospi.nic.in/Mospi_New/upload/KI_70_33_19dec14.pdf Ministry of Statistics and Programme Implementation, Government of India.

their numbers. This classification is not a homogeneous as different sub-castes make up the OBC category. The numerically predominant OBC sub-caste often have control over entire villages, groups of villages and also districts (Yadav, 2002), thus achieving a 'dominant caste' status (Srinivas, 1959).

The relationship between caste and class however is complex (Kumar et al., 2002). The Marxist definition of class is a reference to a group of individuals who share a common economic characteristic and interest defined by ownership of property or means of production (capital, land) (Ollman, 1968). Class in the agricultural context in India can be seen as political alignments defending a group's "collective material interests" (Barbara Harriss-White, 1995a: pg 90). With relation to land and property rights, agricultural producers are differentiated into classes of landholders (producers owning land), tenants (producers who lease out land for farming) and landless labourers (who work on the land for wages) (Bharadwaj, 1985). The other influence of class on agricultural producer and exchange is through the control of capital. Markets in India are analogues to merchant capital, and class plays a crucial role in exchange and distribution (Harriss-White, 1995a). Various classes of traders in the markets are responsible for transportation, information regarding price and quality standards (Jan & Harriss-White, 2012; Leplaideur, 1992), buying and selling of agricultural commodities (Chand, 2012; Chattopadhyay, 1969; Prasad, 1974) and credit (Basu, 1997). The role of class in relation to land and capital in the markets are discussed in detail in sections 3.3 and 3.4 of this chapter.

Caste and caste-based privileges in society have traditionally regulated the occupation of individuals and the right to own property (Thorat & Newman, 2007). These have been enforced and augmented through norms such as social ostracism and adverse measures such as violence and economic penalties (ibid). As a result, along with gender, caste has traditionally been used as a mechanism of exclusion. Exclusion may be defined as the denial of equal access to opportunities imposed by one social group over the other, leading to their inability to participate fairly in polity, society and economy (Buvinic, 2005). Caste and caste status is, therefore, a source of social and economic power to dominant castes. Since this form of exclusion is culturally defined and embedded in social and economic relations, it is a forced exclusion (A. Sen, 2000) that leads to the denial of access to resources, employment, education and public services.

The dynamics of caste-based exclusion is an identity-based exclusion and different from regular forms of exclusion in markets based on lack of income, in employment based on low productivity or in education based on low merit (Thorat, 2009). Therefore, exclusion and discrimination occur in multiple market and non-market transactions and societal interactions (ibid). The exclusion and restrictions in access to land, labour, capital and other factors of production have restricted social mobility and created imperfections in the factor markets and inefficiencies in resource allocation (Akerlof, 1976; Thorat, 2009). Thorat (2009) lists some specific instances of exclusion and discrimination by the dominant castes in agricultural production as:

1. Limited access to markets for labour, agricultural land, inputs, capital, goods, and social services
2. Different prices charged/paid for services received or goods sold in market transactions
3. Exclusion from certain categories of jobs and discrimination in hiring
4. Discrimination in the use of public services like roads and other infrastructure, water for domestic use and irrigation
5. Physical or residential exclusion from other community members preventing full participation in community life

Considering the pervasive influence of caste, collective action institutions are necessarily influenced by caste. Caste and the social capital it generates may predispose collective action through shared values and attitudes, as well as facilitate collective action through norms and social rules (Bardhan, 1993). The role of caste dynamics may also increase transaction costs due to the exclusion and discrimination mentioned above, and also excludes people from sharing the benefits of collective action due to its inherent social and economic power structure leading to the failure of collective action initiatives (ibid). Therefore, the reconciliation of the adverse influences of caste such as exclusion may be required of collective action initiatives to be successful or inclusive.

Gender is another area of exclusion in the socio-economic landscape of agricultural production. Women play a significant role in agricultural production and allied activities in all developing countries. In fact, except for ploughing, women take part in all farming activities such as sowing, manuring and harvesting, and in some

activities such as storage and value addition, they play a predominant role (M. Aggarwal, 2003). According to the Census of India (2011), 87.3 per cent of all women workers in India are in the agricultural sector (this is almost twice that of male workers)[27]. In recent years, women's role in agriculture is increasing as men move out of agriculture to urban areas in search of seasonal jobs, leading to the feminization of agriculture (Agarwal, 2010).

Boserup (1970) noted that the activities of women are largely omitted in the statistics of production, and their income and role in agriculture have been largely undermined. Therefore, despite women's prominence in agricultural production, access to and control over resources, a focus on gender in agriculture policy and the decision making power of women in agriculture are low (ibid). This has led to the exclusion of women in the developmental process in agriculture. According to the Research Foundation for Science and Technology report (RFST, 2005), women are the largest group of landless labourers. Despite egalitarian laws of succession and inheritance, they are often dispossessed from their land (this is discussed in the next section) with the death of a spouse or divorce. Agricultural development programs are often planned by men and targeted at men, and extension and information dissemination activities exclusively advise men about their activities (RFST, 2005). Similarly, women are also kept out of the decision-making processes related to various rural development activities such as Integrated Rural Development Programme (IRDP), Rural Employment Schemes (REP) and various other schemes which prefer to focus on men (ibid).

Economic and social relations in agricultural production are, therefore, embedded in gender relations, the caste system and the caste relations it perpetuates. This affects institutions of property rights and land reforms and the nature of institutions that enable or provide access to inputs, credit, markets and information. The institutional environment of land relations and property rights, and the nature of government policy is embedded and influenced by these social institutions. Similarly, the institutional arrangements in the agricultural sector such as the mechanisms of credit and information delivery, the markets for the purchase of inputs and selling of outputs are predisposed by caste and gender dynamics. These social conditions

[27] http://censusindia.gov.in/Census_And_You/economic_activity.aspx

influence the institutional environment and the issues and challenges present in them. Considering that caste, class and gender play such a determining role in society and economy, they would also have a major influence on how collective action in Producer Organisational Formats is structured. The regional social dynamics of a region will influence the social composition (homogeneous or heterogeneous) of the initiative, determining the organisational features of the initiatives. Social capital characterised by networks, norms and trust would also be conditioned by caste, class and gender dynamics and would affect the propensity of members to cooperate or free ride. In terms of the economic features of POFs, these social aspects would control how collective goods are accessed and distributed among members. In the next section, the specificities of the institutional environment and the effect that caste, class and gender on agricultural production are discussed.

3.3 Institutional Environment - Access to land, property rights and agricultural production in India

The institutional environment refers to the political, legal and normative conditions that influence production, exchange and distribution in the agricultural sector. Property rights and access to land determine the institutional environment in the agricultural sector. Land being the most important factor of agricultural production, its equitable access is fundamental to development and growth in the sector. Land and landholding size in the Indian rural economy plays a production role as well as a social role as it determines status. Individuals with larger landholdings and water have had better access to technological innovations (green revolution technologies) and credit and labour markets (Mearns, 1999). Besides its productive aspect, land is an asset that acts as collateral in credit markets, security in events of natural disaster and a symbol of status (ibid). Therefore, land in the rural economy is also a source of economic and social power. Equitable distribution of land is also crucial in an economy, and when distribution of operational landholdings are equitable, it creates better access to credit markets, research and technology, and also creates a demand for non-farm goods leading to better growth in the economy (I. Singh, 1990). Deininger and Squire (1996) suggest that countries with more equitable distribution of land experience higher economic growth rates. The following part of the section highlights the nature of property rights and distribution of land in India. According to the National Sample Survey Office (NSSO) 2006 data, 6.6 per cent of rural

households in India do not own land and the NSSO 2012-13 data show 67 per cent of households own less than one hectare of land.

3.3.1 Property rights, unequal access and fragmentation of landholdings

Agricultural production takes place through individuals or households cultivating their own land or through the leasing out of land. This leasing out or farming of land without property rights is known as tenure farming. In the 1950s, economic theorization viewed indigenous land tenure systems as inadequate security for cultivators and emphasised the need for permanent rights to incentivise investment to improve agricultural production (Marshall, 1956). Contrary to this, different studies in various developing countries have showed that there are advantages of land tenure systems, such as sharing risks (Cheung, 1968) and provision of credit and inputs in the presence of inefficient markets through interlocked contracts (Bardhan, 1989; Subramanian & Qaim, 2011).

Land tenure practices have been categorized into three types of contracts, including: wage contracts, fixed rent contracts and share cropping contracts (Chaudhuri & Maitra, 1997). A wage contract is when the owner cultivates the land with hired labour (tenant) on fixed wages. Here the owner of the land bears climatic and market risks and has to monitor the hired labour who have no additional incentives other than the fixed wage. In a fixed rent contract, the tenant cultivates the land leased from the owner for a fixed share of the produce. The tenant in this case bears the production risks and may not have the incentive to increase production over a certain level due to perceived risks. The advantage to the tenants is that they may be able to access credit required for cultivation from the owner as tenant farmers when they otherwise cannot access institutional credit due to the absence of a credit supply effect (essentially insufficient collateral) (Bardhan, 1989). In a sharecropping contract, the tenant leases land from the owner and the rent is a percentage share of the total output. Here the owner and the tenant share the risk (Cheung, 1969), and the tenant has the potential of interlinking credit to the lease is also possible. The advantage of interlinking credit and tenancy contracts to the landlord is that they may be able to screen inefficient tenants (Braverman & Stiglitz, 1982) and the tenants are able to overcome the credit supply effect, where credit can be gained as a result of the contract, but often on adverse terms. Incentive to invest in landholdings or improve the land is low in the

case of tenancy. However, longer-term contracts could possibly incentivise investments on land because tenure security enables a tenant to farm on a piece of land for longer periods.

Land reforms or policies intending land reforms were undertaken in many developing countries in the years following the Second World War. While it was successful in countries such as Taiwan, Korea and Japan, it met with limited success in India. Land distribution in India during the colonial period was highly skewed in favour of dominant caste landowners who were given property rights by the British to extract land tax (A. Banerjee & Iyer, 2005). Therefore, the actual cultivators of the land did not have any rights to the land. Land reforms in India comprised of three major tasks: a) the abolition of the intermediaries known as the *jagirdars* or *inamdars,* b) tenancy reform with the intention of providing security of tenure by fixing fair rents and c) regulating landholding size through land ceiling and land redistribution[28] (Appu, 1996; Deshpande & Torgal, 2003; Ray, 1996). The responsibility of carrying out land reforms were with individual state governments and different states had varying levels of success in implementing them.

Intermediaries were individuals who worked for the state, feudal lords or *zamindars* and collected rent from tenants. They were often allowed to retain a large portion of the rent they collected from the tenants (Timothy Besley & Burgess, 2002). The abolition of intermediaries was relatively straightforward and successful in most states as it had a low political cost (Mearns, 1999). However, tenancy reform and land ceilings met with less success. The main reason for this was that land reforms from the beginning were a politically contentious issue. Herring (1983) states that the ruling elite did not have the political will to implement land reforms, as they were electorally dependent on the agrarian elite. The landlords who possessed larger land holdings were bitterly opposed to land ceilings (Ray, 1996). As a result, little was achieved in this regard, and in 35 years, less than 2% of total operated area had ceilings imposed or land redistributed (ibid). Similarly, tenancy reforms in most parts of India have been absent, weak or counterproductive and resulted in the eviction of tenants, rising of informal tenancy agreements on adverse terms, and shorter

[28] Land ceiling was a process by which the maximum amount of land an individual or household could own was fixed and any land above the ceiling level was considered surplus land. This surplus land could be acquired by the state without compensation for redistribution among the landless. In various states the ceiling was fixed at different levels.

(seasonal) tenancy that led to further erosion of incentive structures (Appu, 1997). According to Ray (1996), the loss of access to land by the rural poor as a result of eviction was around 30 per cent of total operated land, deepening the problem of poor land access for cultivators.

Unequal access to land has persisted in India due to the failure to implement land reforms. Additionally, the nature of this unequal access has had a caste dimension. The scheduled castes made up a significant segment of the 'tillers of the soil' and the land reforms would have effectively transferred land from non-scheduled castes to the scheduled castes (Neelakantan, 2011). Table 3.1 shows the percentage of land possession according to social groups in India. In all land size categories OBCs are the largest caste group. The table also shows that in medium and large farms the percentage of SC and ST are very low and the share of OBCs and others (higher castes) is larger. The other group that have limited access to land in India are women. Although by law, women have equal rights to inherit property in India, in practice there are persistent gaps between legal rights, actual ownership and effective control over land (Mearns, 1999). Due to norms and customs, the pressure for women to forfeit their legal right to land in favour of male members is high (Agarwal, 1995). As a result, women irrespective of caste have little access to land.

Table 3.1 Percentage of land possession according to social group in India (2014)

Size of Land Possessed (Ha)	ST	SC	OBC	Others
<0.01	9.4	28.0	52.2	10.4
0.01-0.40	9.7	22.4	44.6	23.3
0.41-1.00	15.7	15.9	45.2	23.2
1.01-2.00	17.6	10.9	45.5	26.0
2.01-4.00	13.8	7.7	47.2	31.3
4.01-10.00	8.0	6.2	44.4	41.4
10.00 +	3.2	2.9	52.8	41.1
All Sizes	13.4	16.3	45.4	24.9

Source: NSSO, 2014

Along with unequal access, another structural problem associated with agricultural land is the increased marginalisation. Table 3.2 shows that about 67 per cent of land

holdings or households in India are marginal in size owning less than 1 hectare of land. Small farms comprise of about 18 per cent, while medium and large holdings were less than 4.2 per cent and 0.7 per cent respectively. The trends in the distribution of landholdings from 1960-61 to 2010-11 show that the percentage of marginal holdings to total holdings increased from 39.1 per cent to 67 per cent. Currently the average size of landholdings in India is 1.10 hectares per household (Chand et al., 2011).

Table 3.2 Changes in the Size Distribution of Operational Holdings and Operated Area: 1960-61 to 2010 -11

Category of Holdings	Percentage of Operational Holdings					Percentage of Operated Area				
	1960-61	70-71	81-82	91-92	2010-11	60-61	70-71	81-82	91-92	2010-11
Marginal (< 1 ha)	39.1	45.8	56.0	62.8	67.0	6.9	9.2	11.5	15.6	22.2
Small (1-2 ha)	22.6	22.4	19.3	17.8	18.0	12.3	14.8	16.6	18.7	22.0
Semi-Medium (2-4 ha)	19.8	17.7	14.2	12.0	10.0	20.7	22.6	23.6	24.1	23.5
Medium (4-10 ha)	14.0	11.1	8.6	6.1	4.2	31.2	30.5	30.1	26.4	21.1
Large (> 10 ha)	4.5	3.1	1.9	1.3	0.7	29.0	23.0	18.2	15.2	11.0
All Sizes	100	100	100	100	100	100	100	100	100	100

Source: National Sample Survey Office (NSSO) 2004 and Ministry of Agriculture, Government of India

In Karnataka the landholding sizes are close to the national average at 1.49 hectares; in Tamil Nadu, the average size is lower than the national average at 1 hectare. The main reasons for the marginalisation of land have been: a) population increase, b) lack of employment diversification from the agricultural sector to the non-agricultural sector and c) the institutional importance of land in the rural economy (Reddy & Mishra, 2009; Mearns, 1999).

Since independence, the population in India has been growing at 2 per cent, while net sown area has been growing at 0.2 per cent (Krishnaji, 2011). Therefore, while the number of holdings between 1961 and 2003 increased from 51 million to 101 million, operated land in fact declined from 133 million hectares to 108 hectares leading to increased marginalisation of land (NSSO, 2004). Another reason for the reduction of land-person ratio has been the slow diversification of the workforce away from agriculture. Slow growth in the manufacturing sector and inadequate employment creation has slowed the shift of surplus labour from agricultural to non-agricultural sectors. In the years following liberalisation, despite high growth in the level of employment in absolute terms, employment in organized manufacturing remained almost constant (Patnaik, 2007). Therefore, growth in India has been one of jobless growth that has failed to absorb labour from the rural regions. Beyond its importance as a factor of production, land in India is a durable asset as land prices considerably outstrip rate of inflation (Mearns, 1999). Land, moreover, is safe collateral for credit, a source of political power (Neale, 1969) and a source of identity and rootedness in local communities (Agarwal, 1994). This political, social and economic power it wields has resulted in an unwillingness to sell land, leading to a rigid land market (Mearns, 1999). This non-production importance of land and the inheritance laws which stipulate that all heirs receive equal share upon inheritance has also led to divisions in family landholdings.

Considering the poor access to land, marginalisation of land holdings and the persistence of rigid land markets, land leasing is an important practice for improving access to land (Ballabh & Walker, 1992; Bell, 1990; Melmed-Sanjak, 1998; Sadoulet et al., 1998; Vaidyanathan, 1994). Although land tenancy has fallen considerably since the land reforms, according to the 1991 census of the Government of India, 19 per cent of rural households lease land, and 90 per cent of this group comprise of small and marginal farmers (Parthasarthy, 1991). Later estimates state that between 15-35 per cent of land is cultivated by tenants (Haque, 2000). However, liberalisation of tenure will still have to address the issue of reverse tenancy (where marginal landholders lease out land to large landholders) under adverse conditions for large-scale farming and absentee landlordism which may alienate marginal farmers (Haque, 2003). The other pertinent issue that needs to be addressed is how tenures can address the credit supply and security effects that make tenancy systems inefficient.

The institutional environment influenced by the social context determines the purpose and relevance of POFs in India. In the absence of land reforms and the prevalence of land fragmentation, the average size of farms are becoming smaller and increasingly falling under the viable threshold size. This puts a majority of producers at a disadvantage in accessing markets, credit and extension services, technology and lumpy inputs like management and asset specific machinery. Similarly, informal measures to remedy issues of poor access to land through sharecropping contracts have disadvantages with regards to accessing formal credit, inputs and technology and bargaining power to fix fair rents in fixed rent and sharecropping contracts. In the different case studies in this thesis, we see that the institutional environment in the agricultural sector shape the purpose of Producer Organisational Formats. The institutional environment influences their organisational and economic features and determines the type of goods and services they access, as well as the nature of their external support, leadership and structure. The next section discusses the main characteristics of markets, credit and research and development institutions as institutional arrangements that influence and determine conditions of agricultural production.

3.4 Institutional arrangements supporting agricultural production in India

Institutional arrangements are rules, regulations and structures that are designed for particular situations involving a subset of individuals or groups. The purpose of these arrangements is to prevent conflicts that are mutually damaging and also to distribute entitlements, opportunities and public goods that are essential to individuals or groups which they may not be able to access otherwise. Due to the seasonality, geographical dispersion and risks and uncertainties of the market and climatic conditions, institutional arrangements in agricultural production are essential to address some of these concerns affecting it to enable growth and development (P. C. Timmer, 1988). The main institutional arrangements are markets, credit institutions and institutions for the dissemination of research and technology. These crucial institutional arrangements have external economies of scale, and understanding the nature and characteristics of credit, research and extension institutions and markets is important to identify the challenges small and marginal producers face when engaging with these institutions ((Johnson & Ruttan, 1994). Collective action

initiatives become highly relevant in the agricultural sector due to their ability to address these challenges and increase viability of small and marginal producers. The aim of this section is to assess the structure and characteristics of institutional arrangements of credit, R&D and markets, to identify the major challenges small producers face in accessing them and to identify the conditions collective action initiatives like POFs can potentially address or need to address. This section also shows how social influences of caste and gender and the institutional environment characterised by the ownership of land also influence access to institutional arrangement for marketing, credit and research and extension services.

3.4.1 Agricultural markets

Agricultural markets in India are institutions containing "bundles of other institutions and are nested in yet others" making it institutionally complex (Harriss-White 1995a + b;). According to Harriss-White (1995b),

> …real market comprises a unique meta institution replete with constituent institutions with enabling, disciplining and constraining functions and interacting with yet others (legal, social and political; in production, consumption and the state). By means of these constituent institutions information on production, prices, buying and selling is organised and transfers of ownership affected. (pp. 586)

This complexity in agricultural markets is primarily due to the many forms of exchange relations and the highly differentiated nature of commodities being transacted in them. The various firms that operate in the market are national agri-businesses, big retailers, agro-processors, traders and their agents and unlicensed petty commodity producers and traders with different forms of contracts and exchange relations with primary producers (Jan & Harriss-White, 2012). The differentiations in commodity markets are also startlingly large. Different commodities and the different varieties of the same commodity catering to specific consumers are transacted in the markets through various channels of marketing chains. As exchange relations are conditioned by social factors that determine economic power in the markets, and markets are institutionally complex, small and marginal producers are often at a disadvantage when participating in the markets.

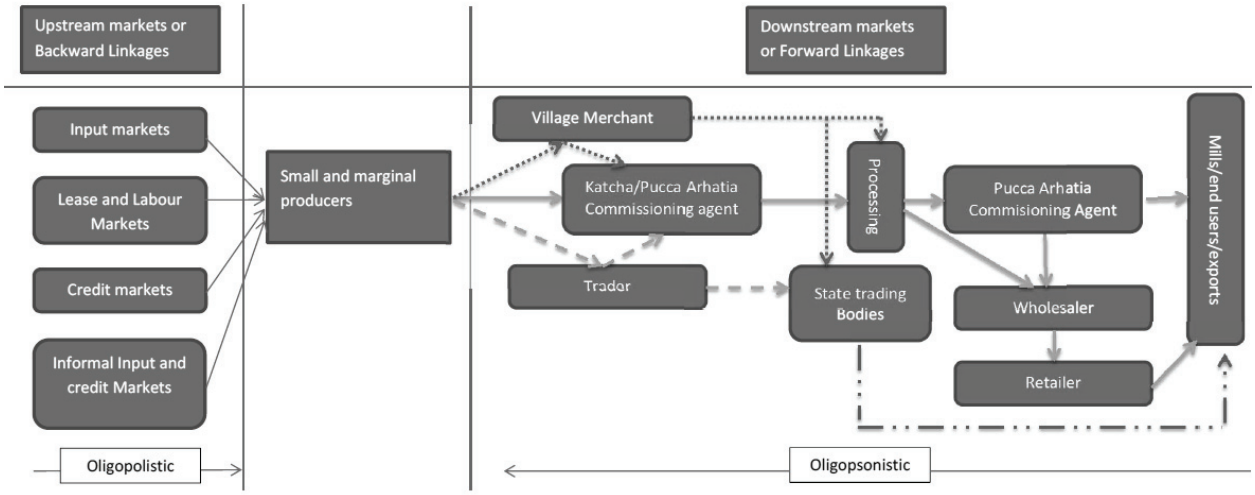
The allocative function of agricultural markets in India is far from efficient as exchange relations are not uniform or equal, nor are they set only in price terms (Bharadwaj, 1985). This means that the production status of individuals and social position of households influence exchange through social dominance and power

equations (ibid). Caste, class and gender are, therefore, important determinants of transaction conditions in agricultural markets. Social discrimination in the markets may prevent access to markets and market goods or allow access on less favourable terms. This form of discrimination is not on the basis of skill, productivity and in many cases actuarial risks such as finance and insurance market risks, leading to 'access failures' (Dorward & Kydd, 2005).

Structure of agricultural markets

Furthermore, agricultural production is linked to the upstream and downstream markets through forward and backward linkages. From the upstream markets, producers' acquire inputs, credit, labour and land in the case of tenant farming and other services required for production. The downstream market on the other hand is where producers sell their produce. Figure 3.2 depicts the structure and various exchange relations in the upstream and downstream markets. Owing to the highly differentiated nature of agricultural markets that involves a large number of firms and individuals, a generic description of markets has its limitations. Therefore, the depiction of markets in Figure 3.2 uses studies and information on cotton, oil and grain markets in India to depict the fragmented nature of the supply chain, the differentiated nature of markets and the various participants in the marketing process. As all POFs explored in this study produce and market one of these goods, the figure is representative of the markets for these commodities.

Figure 3.2: Forward and Backward Linkages in Indian Agricultural Markets[29]



Source: Adapted from Naik and Abraham (2009)
Note: the different coloured lines denote different channels through which goods are sold and distributed in the market.

The upstream markets

The upstream markets consist of organisations and individuals that provide factors essential for agricultural production such as inputs (pesticides, fertilizers and seeds), credit, labour and land. These organisations may be state-supported input cooperatives[30] (fertilizers, pesticides and seeds), credit cooperatives and banks or NGOs providing information, credit or extension services. When producers are excluded from availing credit services from banks, input services from cooperatives and support services from NGOs due to the lack of property rights (in case of tenants) or insufficient collateral, they use the services from unregistered and extra-legal sources such as moneylenders, traders, and private mills (rice and cotton).

The input markets often comprise of local traders and government agencies selling seeds, pesticides and fertilizers to famers. Traditionally, seeds for the next growing season were reused from the year's harvest. With the emergence of hybrid /HYV

[29] The basic structure of this illustration of the downstream markets is adapted from the supply chain of cotton marketed through informal traders, APMC and the Cotton Corporation of India (CCI). The specific marketing channels were identified through field work in 25 different APMCs in Gujarat, Rajasthan, Punjab, Haryana and Karnataka by Naik and Abraham (2009). The marketing channels are similar for rice and oil seeds in India, and other commodities may have fewer or more intermediaries.
[30] The National Agricultural Co-operative Marketing Federation (NAFED) is a federal organization with primary co-operative marketing societies under it at the state level. There are 2937 primary cooperatives in the country with the task of distributing chemical fertilizers, pesticides, seeds and agricultural implements along with non-agricultural commodities like iron and steel, cement etc.

seeds, reuse of seeds leads to lower yields, and seeds need to be bought every growing season. In situations where producers cannot afford certified seeds, when regulated input markets are missing or when input markets are geographically distant, alternative input markets provide uncertified, cheap and often poor quality seeds that increases the risk of crop failure or non-attainment of potential yields. The fundamental problems related to input sourcing, management and use are discussed in section 3.4.3 of this chapter which highlights the importance of R&D in agriculture.

The lease markets in the upstream market cater to agricultural equipment and land leases. The equipment lease markets provide farmers with tractors, tillers, sprayers and transportation which small farm production may not be able to invest in. The land lease markets provide landless farmers and small farmers with land for sharecropping on yearly or seasonal fixed, wage or sharecropping contracts. The rural banks and NGOs are the formal credit institutions that provide credit services in the form of loans, and micro-credit services to producers. In situations where formal sources of credit cannot be mobilised due to poor resource possession (insufficient collateral or outstanding debt), informal credit from money lenders become an important source of capital, making them essential but inefficient actors in the agricultural production process (Ghosh, 2013).

When state approved or registered institutional markets cannot be accessed, alternative markets for land, credit and inputs play a vital role in the rural economy (Harriss-White & Bouman, 1994). Social factors in the form of pre-existing power and network relations of castes and social status play a crucial role in these alternative markets. Often moneylenders are of particular castes who know the farmer personally or through their family members which establishes a guarantee with the borrower (Basu, 1997). The terms of these informal contracts are often arbitrarily determined depending on the relationship between the trader/moneylender and the farmers. This leads to an oligopolistic and exploitative relationship between the markets and the primary producer in the upstream markets (Bhaduri, 1973). Therefore, the major problems resulting from access failure in the upstream markets are sourcing of inputs, seeds and credit. This issue of credit access is discussed in section 3.4.2 Collective actions like POFs need to address these access failures to

ensure availability of essential factors of production on fair terms in order to benefit small and marginal farmers.

Downstream markets

In India**,** the downstream markets or markets linking the primary producer to the end-consumer are highly fragmented with a large number of intermediaries in the supply chain (figure 3.2). The main reason for this is that agricultural produce is traded and marketed in regulated and unregulated markets. Unregulated procurement and marketing is done through intermediaries such as village merchants and commissioning agents that act as middlemen between farmers and retailers or end-users. Regulated procurement and marketing are carried out through mechanisms, rules and guidelines stipulated by various marketing legislation in the country. The three channels through which regulated agricultural marketing is done are through state-trading, cooperative marketing and private trade[31]. State trading in India is done through governmental organisations, such as the Food Corporation of India (FCI), Cotton Corporation of India, Jute Corporation of India and National Agricultural Co-operative Marketing Federation (NAFED), along with specialised commodity boards which are setups for crops such as rubber, tea, coffee, tobacco and spices. State trading through these various organisations is crop specific, where commodities are purchased from the producers directly or through traders, but purchases are limited by their procurement capacity. Cooperative marketing is often done through commodities with high-asset fixity such as milk and fruits like grapes and bananas. In these instances, members who belong to cooperatives sell their produce through them by way of specialised supply/value chains.

A majority of agricultural commodity exchanges takes place through private trade in the Agriculture Produce Marketing Committee (APMC). The APMC is the primary market infrastructure in the country and can be found in all states (except Jammu and Kashmir, Kerala and Manipur) as a marketing platform for the sale of primary agricultural products[32]. Referred to as *mandis*, their main function is to regulate market practices such as weighing, methods of sale, methods of grading and methods of payment. To date, there are 7246 functioning *mandis* in India. The aim of

[31] Annual Report 2006-07 Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India. http://agricoop.nic.in/AnnualReport06-07/AGRICULTURAL%20MARKETING.pdf

[32] Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India http://agricoop.nic.in/

providing a platform for marketing activities and reducing exploitation by traders and mercantile capital proved successful initially, yet over time, power moved back into the hands of middle-men and traders through malpractice, exploitation and rent seeking practices in the *mandis* (Chand, 2012). Until the Inter-Ministerial Task Force on Agricultural Marketing Reforms (2002) recommended amending the APMC act in 2003, APMC had the exclusive right to function as a market. With the amendment enacted in 2003, private agencies and cooperatives now have the opportunity to set up markets to conduct trade, contract farming initiatives can be set up to purchase goods directly from farmers and processors, and bulk buyers can procure products directly from the farmers bypassing the APMC (ibid).

In figure 3.2, the different channels through which cotton, oil and rice are sold are highlighted to illustrate the highly fragmented nature of the APMC. The main actors in the APMC are the commissioning agents or the *arhatias* whose primary function is to procure produce on behalf of the final users who are often the big mills, wholesalers or retailers. The two types of commissioning agents are the *'katcha' arhatia* and *'pucca' arhatia.* The *katcha arhatia* procures produce directly from the farmer or village merchants, or they employ traders to procure produce for them (Naik & Abraham, 2009). The produce brought by the *katcha arhatia's* are often in the raw or unprocessed form such as raw cotton, oil seeds or paddy. The produce is then sold to the *pucca arhatia,* who processes the produce (into ginned cotton, oil, de-husked rice) before selling it to the final buyers who are most frequently mills or wholesalers. The *pucca arhatia* often works with *katcha arhatia,* and in many cases they also procure produce directly from farmers.

Primary producers may not always find it convenient to sell their produce directly in the markets owing to geographical constraints of distance and poor infrastructure, and the risks of not finding a buyer in the market are significant. In such situations, they sell their produce to traders who work for a *katcha arhatia* who scout villages for farmers ready to sell their produce. Farmers also sell their produce to local village merchants who play the role of consolidating produce at the village level before selling to traders or the *katcha arahtia*. Households headed by women are especially prone to being hindered by geographical constraints and constraints of low bargaining power in the markets. In such situations, selling to village merchants at lower prices is the only option. Village merchants and commissioning agents

frequently provide credit services to farmers on the condition that the produce will be sold to them at harvest at a predetermined price.

In this way, an interlinking of the market takes place where agricultural produce is often procured below market price. According to Bell and Srinivasan (1989), "An interlinked transaction is one in which the parties trade in at least two markets (a combination of inputs, credit or land) on the condition that the terms of all trade between them are jointly determined" [33](pp. 73). The different forms of interlinking are land-labour linkages (Bharadwaj & Das, 1975), trader-credit linkages (Harriss-White & Bouman, 1994), and land-credit linkages (Bardhan, 1980; Bardhan & Rudra, 1978; Majid & Nadvi, 1987). Land-credit linkages are conditions where the landlord also extends credit to the tenant to cultivate the land and repayment is often in either cash or kind. Trader-credit linkages are where traders who buy produce or sell inputs such as seeds, fertilizers and pesticides extend credit to cultivators on the condition that they sell their produce at a fixed (often depressed) price to them on which the debt payment is adjusted. Various studies on institutions have focused on the interlinked relations and have evaluated these contracts to have the potential to reduce moral hazard, monitoring costs and uncertainties in the absence of adequate information, while providing essential credit services in the absence of formal institutional options (Bardhan, 1989; Braverman & Stiglitz, 1982). However, the terms on which these contracts are stipulated are determined by the social power of the participants of the contract. Often the tenant or primary producer has low bargaining power (conditioned on gender, caste or class) making these relationships extractive. In credit-labour ties, landlords often extract free or underpaid labour services, in credit-trader ties, producers cannot avail higher prices as prices are fixed beforehand leading to exploitative relationships and forced commerce (Bhaduri, 1986; Bharadwaj, 1985). It is evident from the structure and functioning of Indian agricultural markets that the agrarian mercantile class has a strong influence on credit and commodity markets in India. According to some scholars, (Chattopadhyay, 1969; Prasad, 1974) the mercantile class used this strong influence and power in commodity exchanges and expropriated from small farmers on unfavourable terms. Due to the fragmented nature of the supply chain, the differences between the selling price in the market and the price the final consumer pays can be large. According to

[33] Parenthesis added

Chand (2012) an average of 4 to 6 transactions take place before the produce reaches the final consumer. The trading class are often organised on caste and sub-caste identities and have pre-conditioned consolidated power in the market. As a result of these conditions, there is an oligopsonistic relationship that is carried across the supply chain between different agents.

Often sales are conducted through non-transparent means and the absence of grading and information on quality makes price realisation difficult for small farmers (Naik and Abraham, 2009). Commissioning agents also arbitrarily increase market commission rates leading to an increase in transaction costs (Chand, 2012). Gulati (2009) provides examples of the Azadpur fruits and vegetable market in Delhi and Vashi market in Mumbai where agents' fees range from 6 per cent to 10 per cent and 8 per cent to 15 per cent of total sale value respectively. The fragmented nature of the markets hinders the channels through which information flows in the markets, leading to information asymmetry between buyers and sellers. This poses the problem of signalling in agricultural markets. The problem of signalling occurs when buyers and sellers cannot make marketing or production decisions due to poor information flows within the market. Often fraudulent weighing and under-pricing of produce in the absence of grades is often used to increase margins. Thus, information about the quality of the product in a highly differentiated market where there are many transacted varieties of rice, cotton, tobacco needs grades and standards to determine quality and price of a produce.

Agricultural markets in India are complex institutional arrangements with many forms of exchange relations and highly differentiated commodities being transacted in the markets. The prominent factors that determine these markets are: a) allocative conditions are not set on price terms alone as social factors such as caste, class and gender have an influence on them and b) the supply chain in downstream markets connecting producers to end consumers are highly fragmented with a large number of intermediaries leading to marketing malpractices (e.g. poor weighing practices, no grades and standards), poor price realisation and poor signalling. The challenge for collective action initiatives designed to increase benefits for small and marginal producers is, therefore, to help producers participate in market activities by neutralising the social factors that hinder them and to enable better price realisation by providing marketing services to bypass the fragmented marketing chain. For

example, through collective marketing of produce by small producers reliance on intermediaries can be reduced. Initiatives such as POFs, in this respect, should be able to help address these problems.

The role of intermediaries, such as merchants and traders at the village level, are also highly relevant in the rural economy because of the high search and logistics cost to small producers. Often due to the inability of farmers to store their produce or take it back from the markets they have to 'distress sell' their produce. In female-headed households with limited quantity of produce, although the price offered at a farm gate is a non-competitive price, selling to intermediary may be a better option in the absence of other alternatives. POFs should also enable farm gate purchases at a competitive price to substitute the role of intermediaries. Effective collective action in relation to the institutional arrangement of markets should enable better price realisation for produce sold in the market and reduce marketing costs through measures such as supply chain coordination through buying contracts in order to increase price realised by producers.

Increase in marketable surplus would also entail increase in production or yields in agriculture. In a simple production function; increase in production requires a corresponding increase in factors of production which include land, labour, capital and total factor productivity (TFP). TFPs are factors that account for the change in production not related to land, labour or capital, and in agricultural production these factors entail technology, extension services and management. As the potential to increase land and labour is often limited in small and marginal agricultural production, access to credit (a form of capital) and technology is crucial to increase agricultural production as it increases access to quality inputs. Institutional arrangements to disseminate research information and technology to small producers through extension-based activities are also needed in the agricultural sector along with institutions to provide credit on fair terms. The next two sections will evaluate the existing institutions in the delivery of credit and extension services important for agricultural growth and development.

3.4.2 Credit Institutions and agriculture

The slow turnover of capital and limited surpluses has restricted the scope of internal financing in small and marginal agricultural production. This has made access to

credit crucial in Indian agriculture. The three main sources of institutional credit in India have been the credit cooperatives, commercial banks and the Regional Rural Banks (RRBs). Credit cooperatives were set up primarily to finance rural lending, and in the years following independence in 1947, to finance farming and other small-scale non-farm activities. The role of credit cooperatives in rural lending has fallen since the entry of commercial banks. The share in total agricultural lending fell from 69.5 per cent in 1975 to 15.88 per cent in 2011-12[34]. The main reason for this has been increasing defaults by borrowers, inability to raise resources through increased deposits and cooperatives' increased dependence on external support from the government[35]. Commercial banks in India were not exclusively agricultural credit banks as they served urban areas as well. Commercial banks, however, were mandated by the 'priority sector lending clause' that states that 18 per cent of lending has to be to the agricultural sector[36]. The RRBs were setup in 1975 to prioritise lending to the rural areas and support agricultural production. The aim of the RRBs were to make credit available in rural areas where banking facilities were absent and national banks did not operate (MoF, 2007). They were different from commercial banks in the sense that they focused on small and marginal farmers, rural artisans and agricultural labourers (ibid).

In the years following liberalisation in 1991, changes in the financial sector have led to an emphasis on prudential regulation and a diluted focus on social banking (ibid). Expansion activities of commercial banks in rural regions were inhibited, and branches were shut down. Between 1991 and 2006, seven per cent of banking centres were closed (Narayana, 2011). Presently there are over 14,000 RRBs working in 516 districts in various states. Although RRBs account for 30 per cent of all rural bank branches, their share of total agricultural credit dissemination has not risen over 10 per cent (ibid). The failure of cooperative banks has been disadvantageous since the reach of cooperative banks has been wider than commercial banks with twice the number of rural outlets and four times the number of accounts (MoF, 2007).

[34] Source: Computed from Lok Sabha Unstarred Questions No. 5937 and 7117 on 11.05.2012 and 18.05.2012 found in www.indiastats.com

[35] *Report of the Task Force on Revival of Cooperative Credit Institutions*, 2005, (Chairman: A. Vaidyanathan).

[36] If banks did not meet the 18 per cent target they were given the option of investing the remainder in the Rural Infrastructure Development Fund (RIDF). Many commercial banks have opted for this option in the recent past (Ministry of Finance, 2007).

Since 2002, microfinance institutions have been attempting to increase the reach of institutional credit among the poor. Microfinance fundamentally entails the provision of small amounts of credit for a short period of time to individuals who would otherwise avail the services of informal sources of credit (Ghosh, 2013). In rural India, Self-Help Groups (SHGs) were established to disseminate credit with the help of banks. SHGs are small groups of 10-12 individuals who collectively borrow a specific sum of money without collateral. Individual members vouch for each other and peer monitoring is used to prevent ex-ante moral hazard problems and adverse selection problems and ex-post wilful defaulting on credit repayment (Ghosh, 2013). According to the Microfinance Information Exchange[37] (2012), 75 per cent of micro-credit borrowers were based in Asia (32 and 22 million in Bangladesh and India respectively). Despite this volume, micro-credit programmes were too small to bring about significant changes in the agricultural sector. The cumulative credit disbursed by micro-credit programmes between 1992 and 2006 was only 6% of the total agricultural credit disbursed in 2005-06 alone (Ramakumar, 2010). Besides the problem of borrowed principle being too low to create farm-level capital or to buy sufficient inputs, micro-credit programmes have also been criticised for their coercive tactics to ensure repayment and their exclusion of some groups of women and scheduled castes (Ghosh, 2013).

Liberalisation of the economy in India which resulted in an opening up of the markets has also led to the diversification in agricultural production towards high-value commercial crops such as cotton and horticultural crops (G. S. Bhalla & Singh, 2012). Although these commercial crops bring higher yields and better prices, they have also increased the cost of production (ibid). This, coupled with producers risks related to market price volatility and climatic risks related to rain-fed agriculture, has led to the reluctance of institutional sources to lend to farmers, especially small and marginal farmers leading to an increase in lending from non-institutional sources (moneylenders, traders, intermediaries). Higher rates of interest and the lack of insurance in the form of crop or weather insurances have also led to the increased indebtedness of farmers. The rising cost of production in addition to the diversification of agricultural production and fall in institutional lending have led to

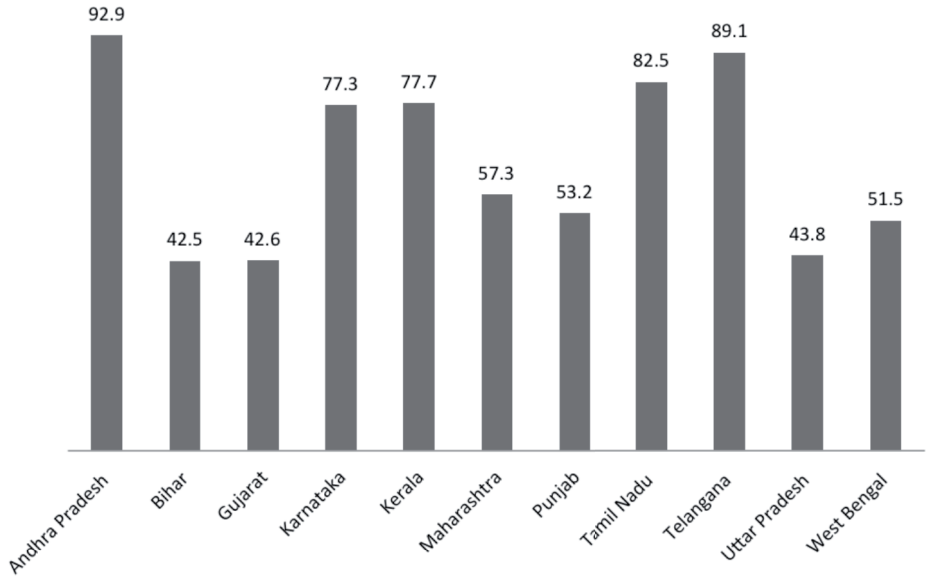
[37]http://www.themix.org/publications/mix-microfinance-world/2013/02/2012-asia-regional-snapshot

the re-emergence of money lenders in rural India as a dominant source of credit (Satyasai, 2008).

Challenges of credit access for agricultural production.

According to the Situation of Agricultural Households Survey (2014) carried out by the National Sample Survey Office (NSSO), 52 per cent of all agricultural households in India are in debt. The level of indebtedness is much high in the South Indian states compared to other regions of the country. Figure 3.3 shows over 93 per cent of agricultural households are indebted in Andhra Pradesh and the levels are much above the national average in the states of Kerala, Karnataka and Tamil Nadu. The NSSO survey also revealed the relationship between the size of landholdings and access to formal credit. Table 3.3 show the indebtedness in the agricultural sector in relation to the landholding size of agricultural households.

Figure 3.3 Percentage of agricultural households in debt in selected states in India



Source: Situation of Agricultural Households Survey, NSSO, 2014

The borrowings of households possessing less than 2 hectares of land (marginal landholders) are higher from informal sources and the percentage of borrowing from formal sources (especially banks) goes up with increase in land size. Furthermore, S.M. Kumar's (2013) study on formal agricultural credit and caste shows how social status impacts access to credit in that lower castes have often been disfavoured in the dissemination of agricultural credit, especially from cooperative banks. Due to this marginal farmers of lower castes are further disadvantaged in accessing rural credit.

Table 3.3 Percentage of indebtedness of different landholding sizes in relation to different sources

	Formal Sources			Informal Sources				
Size of Landholding	Government	Cooperative Society	Bank	Employer /landlord	Agricultural/ professional money lender	Shopkeeper /trader	Relatives or family	Others
<0.01	0.4	1.6	12.9	0.6	63.7	1.4	17.5	1.8
0.01-0.40	1.3	14.6	31.0	0.8	32.4	2.5	14.2	3.1
0.41-1.00	1.7	13.9	37.6	0.8	27.4	6.6	10.6	1.4
1.01-2.00	2.6	14.7	47.5	0.7	23.3	1.5	7.6	2.0
2.01-4.00	1.9	15.6	50.0	1.4	23.8	1.2	5.8	0.3
4.01-10.00	3.8	17.5	50.2	0.4	18.7	1.4	6.5	1.5
10.00 +	1.1	14.3	63.5	0	16.1	0.5	3.8	0.6
All Sizes	2.1	14.8	42.9	0.8	25.8	2.9	9.1	1.6

Source: Situation of Agricultural Households Survey, NSSO, 2014

Among the reasons for low credit dissemination to small and marginal producers from institutional sources are the associated high transaction costs. Despite an advance in information and communication technologies and an improvement in decentralised governance, bureaucratic complexities such as paper work, mortgage procedures, inspection of land and bribes characterise these transaction costs (MoF, 2007). Government and parastatals (e.g. cooperative and rural banks) often do not have enough local knowledge about borrowers, and this makes collateral an important criterion for borrowings (Bardhan, 1996). This disqualifies marginal farmers, tenant farmers and households without proper title deeds to the land from accessing credit. These institutions also do not have access to systems of peer-

monitoring and social sanctions which may provide security for borrowings (ibid). Poor access to institutional credit and the need for credit in farming activities thus make non-institutional sources of credit an important but unviable source of credit for small households, affecting surplus creation and growth in the agricultural sector. These informal institutional arrangements have more local knowledge of borrowers and also possess socially constructed agency based on caste status and class to recover borrowed credit.

According to the Ministry of Finance's *Report of the Expert Group on Agricultural Indebtedness,* 2007, a substantial portion of household debt was for agricultural production purposes, with regional variations. In states such as Assam and Kerala, 40 and 44 per cent of agricultural credit was used for production purposes respectively, while in Karnataka and Maharashtra 78 and 75 per cent of the credit was used for production purposes. The report also points out that indebtedness was relatively low in less-developed states in India, while being high in agriculturally developed states. Between 1995 and 2012, there were 282,400 reported cases of suicide by farmers due to agrarian distress, and 39.2 per cent of these cases were from Andhra Pradesh, Tamil Nadu, Kerala and Karnataka[38]. The report clarifies, however, that indebtedness was an important factor associated with suicides but not the only factor. Other factors emphasized in the report include uncertainties related to the weather, markets, technology, and spurious inputs in the absence of risk-mitigating strategies that put farmers under duress (pp. 88).

This section has highlighted the importance and challenges of agricultural credit institutions in the agricultural sector. Due to high risks and production characteristics of small producers, the reach of formal institutional credit has been limited. This has made informal credit institutions such as traders, moneylenders and landlords an important source of credit despite adverse terms and conditions on which they make credit available. Although SHGs and other micro-credit organisations use peer-monitoring and social sanctions to secure borrowings, their impact have been low due to their low principle size and inability to provide interlinked services such as land and inputs. If POFs are to be effective agents of credit delivery, they should be able to: (a) make credit accessible to small and marginal producers who often do not have

[38] Source: National Crime Records Bureau, Ministry of Home Affairs. Government of India. Compiled from the "Accidental Deaths and Suicides in India" report of various years

sufficient collateral or (b) make sufficient credit available to meet basic production requirements such as inputs (if not long term credit) with minimal collateral.

Apart from high rates of interest charged through informal credit sources and low price realisation for produce sold in the markets, another reason for growing indebtedness includes crop failure. This can result from weather-related uncertainties, lack of knowledge about new technologies and associated growing practices, spurious inputs and lack of general information about changes in environmental conditions such as soil fertility. Furthermore, addressing issues related to crop failure-induced indebtedness requires institutional arrangements for not only research and developing technology, but also for disseminating knowledge about new technologies and associated growing practices which would reduce this problem for small and marginal farmers. The next section evaluates the research and extension service infrastructure in India, and the systems of dissemination to understand their shortcomings and the need to redress them.

3.4.3 Agricultural research and extension

Research and development and technological extension to farms are of utmost importance in order to spur growth in the agricultural sector. The Indian green revolution undoubtedly is one of the best examples of how agricultural science and technology contributes to growth and productivity. India developed from being a food grain importing country in the 1950s to establishing a substantial surplus of food grain in the late 1960s, and since the1970s India has become a food grain exporting country. However, despite increased crop productivity, 48 per cent of Indian children under the age of 5 are malnourished (UNICEF, 2008), almost half the arable land has been classified with deteriorating soil conditions and thousands of farmers have been driven to suicide from the mid-1990s due to crop failures (Raina, 2011). To explain this contrast there is a need to look at the nature, content and direction the agricultural research system has been taking. As an example, The Eleventh Five-Year-Plan report (2008) of the Planning commission states:

> …research has tended to focus mostly on increasing the yield potential by more intensive use of water and bio-chemical inputs. Far too little attention has been given to the long term environmental impact or on the methods and practices for the efficient use of these inputs for sustainable agriculture. These features are widely known but efforts to correct them have not been adequate; at any rate they have not made much of a difference (GOI 2008, pp. 13).

Agricultural research in India is in the public domain and the three major constituents of agricultural research include agricultural policy, agricultural research and extension of research and technology. Figure 3.4 depicts the major components and characteristics that make up the agricultural research and extension framework in India. Agricultural policy is framed by the state through the Ministry of Agriculture (MoA) and is conditioned by international trade and environmental agreements. The policy environment directs the research of the Indian Council of Agricultural Research (ICAR), the State Agricultural Universities (SAUs) and private sector research. Extension activities are undertaken by the Department of Agriculture, the Directorate of Extension Education and various civil society organisations (Raina, 2003).

Figure 3.4 Constituents of agriculture research and extension in India

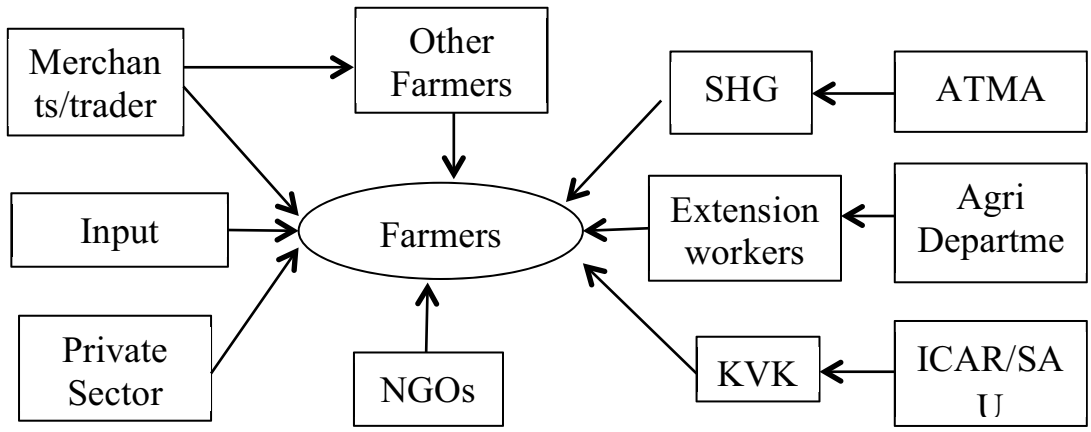
According to Raina (2011), research and extension services in India was "designed to work with elites in a top down fashion and geared to the centrally administered modernisation of the middle and large farmers" (pp. 109). The strong extension bias against small and marginal farmers has led to a focus on the technological dissemination and knowledge of progressive farmers, and only certain kinds of crops and certain regions (where irrigation facilities were available). The main reasons for this extension bias was a misplaced confidence in modern technology and the opinion that ignorance attributed to small and marginal producers tied them to their traditional methods of farming, and their mind-sets were perceived as being difficult to change (Goldsmith, 1990). Input intensive agriculture over the years have resulted in widespread water stress resulting from ground water depletion, soil and water contamination due to increased nitrate levels, reduction in soil fertility due to intense farming, soil erosion due to poor land management and increased water salinity due to over-irrigation in semi-arid regions (MoF, 2007). Therefore, although food

security through surpluses has been met, the stark contrast in lagging development with small and marginal farmers has been high.

Structure of research and extension services in agriculture

The traditional research and extension services in India reflect the policy approach to food security along with the extension bias that was built into the approach. The ICAR at the central level and the SAUs at the state level were set up to plan, coordinate and execute agricultural research (Pal & Saxena, 2003). ICAR and SAUs used the expertise of the *Krishi Vigyan Kendras* (KVK) or the agricultural knowledge centres to disseminate the knowledge and technology they had generated. In the mid 1990's, the Government of India, in collaboration with the World Bank, instituted National Agricultural Technology projects in various parts of the country to decentralise and diversify agricultural research. These projects eventually became the Agricultural Technology Management Agency (ATMA). Some initiatives have been taken by the private sector; however, they have been small, commercial crop-oriented and region specific. ITC's e-choupal initiative is the most well-known, while others have been undertaken by large corporations such as Mahindra, Rallis and Tata. Figure 3.5 depicts the different sources of information and research extension in the agricultural sector in India.

Figure 3.5 Sources of information and extension in Indian agriculture



Traditional sources of information among farmers have often been other farmers, traders, merchants and input sellers. They are, however, unreliable sources of information which sometimes have adverse consequences. Often in order to sell their

produce, input sellers suggest seed varieties or inputs which are unconducive to the growing environment of the farmer, accentuating the risk of crop failure or suboptimal yields. Furthermore, farmers who source this kind of information may subsequently pass this information on to other farmers. Since the early 1990s, NGOs have emerged to play an important role in providing extension services on behalf of the government. They have been instrumental in the formation of Self Help Groups for implementing programmes like watershed management schemes. However, as their sources of information are the traditional research establishments, their role has been limited in this respect.

The two marked changes in research and extension and related activities from liberalisation in 1991 were the reduction in agricultural R&D funding and the amendment of the seed act. The reduction of public expenditure on R&D to 0.49 per cent of GDP (most developing country expenditure averages to 0.7) has put a strain on already slacking extension activities. The National Seed Corporation (estd. 1963) and a network of State Seed Corporations have had the prime responsibility of distributing seeds in India until the New Policy on Seed Development was conceived in 1988 to make the seed sector in the Indian market responsive, and in 1991 a hundred per cent foreign equity was allowed in seed production and distribution. According to the Ministry of Finance's *Report of the Expert Group on Agricultural Indebtedness,* 2007, this had two major consequences in the agricultural sector:first, in the absence of proper regulation, the supply of genuine seeds began to decline and spurious seeds began to flourish in the market; second, the price of seeds shot up, especially with the entry of GMO seeds and seeds borne out of private sector innovation. The added danger of these seeds were, when they were grown without adequate knowledge of input management and land preparation, their propensity to fail or yield sub-optimal harvests increased.

Challenges for extension activities in agriculture

The major challenge of agricultural R&D in India arises out of the lack of effective research-extension linkages, scale and complexity of the agricultural sector and the lack of operational resources to carry out extension activities. Research and extension need to be effectively linked to enable the provision of research information and technology from lab to farm and feedback from farm to lab. This feedback from farms is essential to develop knowledge and understanding of region and crop

specific factors that influence agriculture. However, the top down nature of knowledge and information flow prevents good feedback flow to enable situation specific research (Macklin, 1992).The scale and complexity of the agronomic diversity in India requires the formation of region specific knowledge. In India the existing extension service caters to 90 million farms (Sulaiman, 2003) and the public sector extension services are simply insufficient to cater to this number. There are over 100,000 extension workers in India and depending on the region the worker to cultivator ratio varies. In Kerala, the ratio is 1:300 while in Rajasthan, it is 1:2000 (ibid). In 2011-12, 26 farmer field schools set up to disseminate information in the state of Karnataka trained only 780 farmers. Similarly in the Tamil Nadu 24 farmer field schools set up trained 720 farmers[39]. It is often due to the lack of information access through extension services that farmers rely on other sources like traders for information. In a survey of 247,613 agricultural households in India, the NSSO found that information and extension services sourced from state bodies (or formal sources) were low (expect veterinary services for animal husbandry) and the main providers were private sources such as commercial agents and traders, progressive farmers and mass media (Table 3.4).

Table 3.4 Access to information and extension services from different sources

Source of information and extension services	Percentage of access
Extension agent	11%
KVK	6%
Agricultural University/college	2%
Private commercial agents (traders etc.)	19%
Progressive farmers	57%
Radio/T.V./newspaper/internet	37%
Veterinary department	21%
NGO	3%

Source: Situation of Agricultural Households Survey, NSSO, 2014

Due to the scale and complexity of the agricultural sector in India, the lack of a sufficient operational budget has hindered extension activities. The reduction in

[39] Source : Lok Sabha Unstarred Question No. 4314, dated 7.5.2007, & Lok Sabha Unstarred Question No. 2789, dated 11.12.2012 found on www.indiastats.com

public expenditure has further accentuated this problem. The operational budget for extension activities is low in India and 85-90% of the Department of Agriculture's budget goes on salaries, with only about 15% available for organisational support (Raina, 2003). This restricts the potential of these bodies to disseminate information. Another important challenge in agricultural extension in India is simply the way extension activities are perceived in India. van den Ban and Hawkins (1998) point out that in India extension is viewed just as the provision for information when demanded by the producer and technological change when research bodies deem it necessary. Extension, therefore, does not extend to aiding farmers in input, resource and land management, and in developing skills necessary for these activities or the provision for any organisational support.

Research and extension services in the Indian agricultural sector have been closely linked with the political and economic need to attain self-sufficiency in food production and achieve food security in the country. This policy influenced agricultural research in a direction that relied on high yielding input intensive variety of crops which over time has had environmental externalities. As research and extension was biased towards large producers or producers with access to resources such as irrigation, the benefits were not evenly spread (Raina, 2011). They were also highly centralised, top-down processes that have not adequately considered regional variations in geographical and climatic conditions. In the post-liberalisation period, reduction in public expenditure in agriculture and the rising cost of technology has led to the emergence of spurious inputs in the markets. Extension services is India have limited reach due to poor research and extension linkages, the scale and complexity of agriculture, low resources available for extension and how extension and its role in agricultural development in India is viewed. Thus, an important good that POFs need access to is research and extension services. This will help to crucially improve production practices, increase access of small and marginal producers to new technologies and knowledge, and also help reduce externalities such as environmental degradation. Access to research and technology comes at a high initial cost owing to search and information cost. However, once it is accessed, it can be disseminated to others at no (or little) additional costs. In this scenario, POFs formed through collective action can reduce per capita cost of accessing information and technology. This also requires linkage with research institutions and

research and extension disseminating bodies, which may be possible through these POFs.

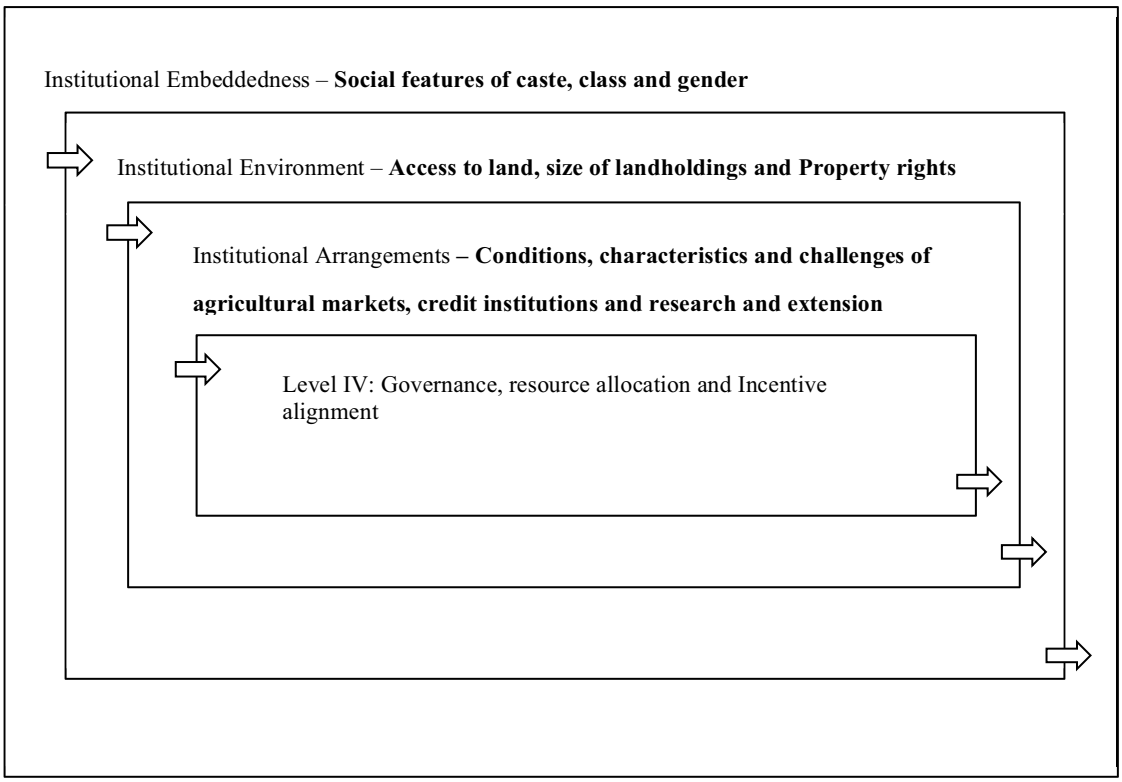
This section assessed the structure and characteristics of markets, credit institutions and institutions for research and dissemination in the agricultural sector. Just as institutional arrangements determine the purpose, institutional arrangements also determine the functions and aims of Producer Organisational Formats and the challenges they aim to address. The various POFs explored in the latter parts of this thesis aim to address concerns and challenges mentioned in this chapter such as access to credit, markets and research and extension. This assessment also showed the challenges faced by small and marginal producers in accessing these institutions due to poor external economies of scale and social influences of caste and gender. Not all POFs provide all of these goods and services; rather, they provide them in different combinations. This greatly influences how these producer organisations are organised and the economic changes they bring to small and marginal producer members. Producer organisational formats are also institutional arrangements involving a subset of producers governed by a certain set of rules and regulations situated in the social context and institutional environment described in this chapter. They are also influenced by other institutional arrangements and they are fundamentally designed to address concerns and challenges faced by their small and marginal farmer members situated in this institutional scenario.

3.5 Conclusion

In summary, this chapter has assessed the institutional context in which agricultural production takes place in India in order to understand the challenges small and marginal producers face. The institutional context of agricultural production is characterised by its institutional embeddedness, the institutional environment it is situated in and the various institutional arrangements that influence and determine production conditions. Understanding this is important because Producer Organisational Formats are formed and coordinated as collective actions to address some of the challenges characterised within this institutional context. Therefore, any attempt to explore how producer organisations are structured on organisational, social and economic terms needs to be done with reference to this institutional context.

Using the framework developed in chapter two, this chapter highlights the characteristics of institutional embeddedness, institutional environment and institutional arrangement in the agricultural sector in India (3.6). The social context characterised by caste, class and gender in which agricultural production is embedded plays an important role in determining an individual's level of access to factors of production, markets and information.

Figure 3.6 Institutional factors influencing agricultural development



This institutional embeddedness influences the institutional environment characterised by property rights regimes and access to land, which is the most important factor in agricultural production. It establishes the conditions in which a majority of agricultural producers in India are small and marginal due to the issue of fragmentation of landholding below a threshold size of viability. An important purpose of POFs, therefore, is to address the disadvantages in the institutional environment of Indian agriculture that small and marginal agricultural producers face. The resource structure and social characteristics of small and marginal producers also affects their access to institutional arrangements of markets, credit

institutions and institutions that undertake research and dissemination activities. Thus, small producer viability crucially hinges on the ability of farmers to effectively access resources and services from these institutional arrangements, and this forms the key aim and function of producer organisational formats.

The next two chapters comprise of four case studies of Producer Organisational Formats from the states of Karnataka and Tamil Nadu. These chapters will look at how these different producer organisations emerge and are structured to address the various production and access challenges discussed in this chapter. Chapter 4 compares two Joint Liability Group-based producer organisations in the state of Karnataka. The chapter identifies the major institutional challenges members of each of these organisations faced and how they were structured on organisational, social and economic terms in an attempt address some of these concerns.

Chapter IV: Credit providing collective action initiatives - Two cases from Karnataka

4.1 Introduction

Producer organisation formats were formed primarily to deal with the production challenges faced by small and marginal producers. The major challenges they face were in accessing essential goods and services necessary for production. Producer Companies (PC), Joint Liability Groups (JLG) and Farmers' Federations (FF), were the three producer organisational formats identified for the study, and the four case studies in this thesis show how they were structures in organisational, social and economic terms. In this chapter, Shri Kshethra Dharmasthala Rural Development Project (SKDRDP) and Sridevi Farmers Welfare Society (SFWS) of Karnataka were cases of two Joint Liability Group initiatives explored to understand how they were structured, and how they access credit, inputs and extension services. It also assesses how these organisations were similar and differ from each other, and how this influenced their functioning. Using the theoretical framework developed in Chapter 2, this chapter will explore the organisational, social and economic features, the incentive structures and how resources were distributed in the two cases in order to understand the nature of challenges each group faced in organising as collective actions and how these challenges were addressed.

The two cases compared in this chapter are Joint Liability Groups whose primary function is to provide credit to their members. Although there are more than 300,000 Joint Liability Groups in India today, a majority of them have not been able to bring benefits to their members to same extent as these cases explored in this chapter. I argue that these two cases are unique because they successfully coordinated collective action and provided goods and services such as inputs, extension services, labour sharing services and mechanisation services to its members, while most other Joint Liability Groups only provided credit. From these cases it is also clear that the external support from the state and organisational support from an NGO, along with previous experience of coordinating collective activities and the use of federated

small groups were crucial for enabling collective action and preventing social dilemmas. In these two case studies we also see social capital arising from religious ideology and cultural similarities as a crucial factor in the coordination of collective action characterising the social features of the two cases. In economic terms, these cases revealed that although there were changes in profit resulting from collective action, households with marginal landholdings did not make sufficient profits to depend solely on agriculture. The case of Sridevi Farmers Welfare Society is unique as it shows how sharecroppers without property rights were able to address some production issues such as credit and input access as well as negotiate fair sharecropping contracts.

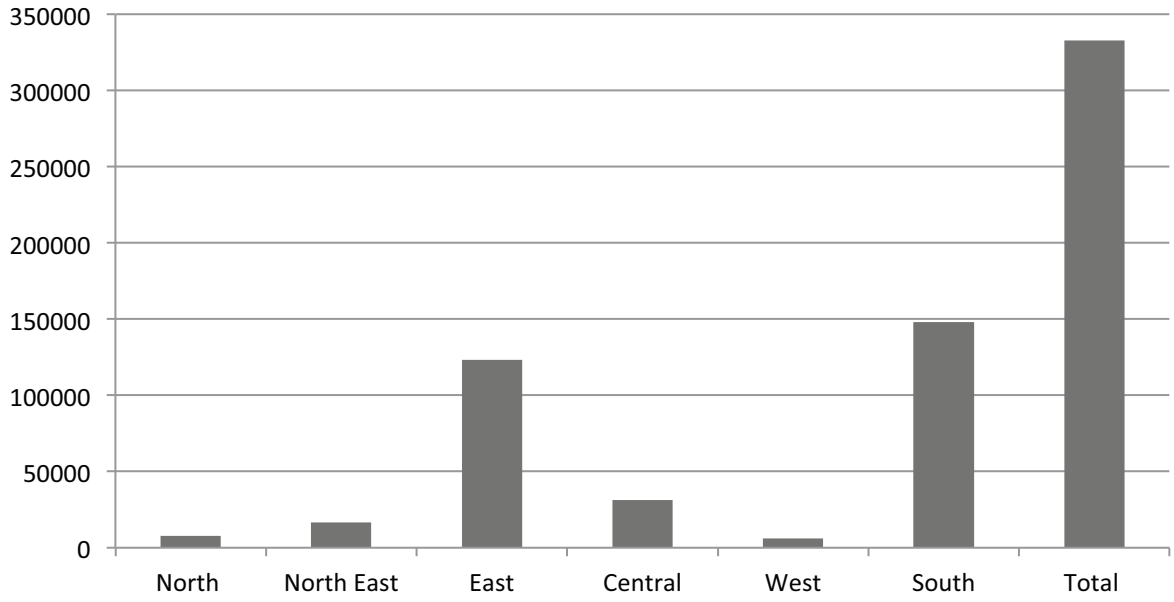
This chapter is divided into four parts: the first section assesses the nature and characteristics of Joint Liability Groups in India; the second and the third sections comprise the two case studies of Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society respectively, where their organisational, social and economic features and the resource allocation and incentive alignment features are studied. The concluding section of this chapter compares the two cases for their similarities and differences as JLG organisations coordinating collective action.

4.2 Joint Liability Groups

The Joint Liability Group scheme was started by National Bank for Agriculture and Rural Development (NABARD), under the directions of the Reserve Bank of India's (RBI) in 2004-05 to increase 'financial inclusion' and aid tenant farmers, tenants with verbal contracts, sharecroppers and small and marginal farmers' access to collateral-free loans[40]. According to the NABARDs guidelines, informal groups of 4 to 10 individuals/households form borrowing groups through which credit is disseminated for farming activities. As of March 2012, there were 332,707 Joint Liability Groups formed in India with the highest density of groups in the South and Eastern parts of India[41] (Figure 4.1).

[40] Source: Guidelines for financing Joint Liability Groups and Tenant Farmers, Reserve Bank of India, 2006
[41] The estimated number of JLGs in South and East India are 148,119 and 123,132 respectively.

Figure 4.1: Number of joint liability groups in India (as of 31.3.2012)



Source: Rupnawar and Kharat (2014)

Ghatak and Guinnane (1999) argue that joint liability has the potential to solve information asymmetries, lower transaction costs, prevent adverse selections (sorting and screening) and reduce moral hazard problems associated with accessing and recovering credit. When lending is done through groups, there is more information available about borrowers as members in groups screen each other for reliability, and they also monitor each other (peer monitoring) increasing repayment and reducing moral hazards (actions on the knowledge that its cost or consequence will be paid by someone else) (Ghatak & Guinnane, 1999). Due to these advantages, Joint Liability Groups (JLGs) are now an integral part of the first Financial Inclusion Plan (FIP) (2010-2013) of the Reserve Bank of India and measures are being taken to increase the number of Joint Liability Groups in the current FIP (2013-16) (GOI, 2014).

Joint Liability Groups in themselves are not producer organisations and in most cases the only collective activity they undertake is to share liabilities for borrowed credit. They often do not have the resources, technical expertise or the organisational skills to form producer organisations. Joint Liability Groups are considered semi-formal groups because only the financial institution that provides them with loans recognises them. In order to access additional goods and services such as extension services and

subsidies, different groups of joint liability groups under the guidance of NGOs s register themselves as a society or a federation to expand their activities. NGOs coordinate linkages with the state and financial institutions (e.g. NABARD and the local banks) to enable access to inputs, extension services and also undertake joint initiatives such as labour sharing, along with credit. They also provide managerial expertise to organise producers into groups and help govern their various activities. This chapter explores the cases of two such Producer Organizational Formats in the state of Karnataka (Table 4.1)

Table 4.1 Joint Liability Groups

Name	Location	State
Sridevi Farmers Welfare Society (SFWS)	Koppal District	Karnataka
Shri Kshethra Dharmastala Rural Development Project (SKDRDP)	Dakshina Kannada and Chikmagalur Districts	Karnataka

4.3 Case I: Shri Kshethra Dharmasthala Rural Development Project (SKDRDP) – Pragithi Bandhu Model

The Shri Kshethra Dharmasthala Rural Development Project is an NGO based in the Dakshina Kannada district of Karnataka. The NGO was set up in 1982 as a charitable wing of the Dharmasthala temple, an 800-year old establishment, to undertake charity and social work in the region. Over the years the NGO has implemented life insurance and pension schemes, women empowerment schemes, microfinance schemes, set up de addiction centres among other schemes and community development measures. Their collective action program was called '*Pragithi Bandhu'* (meaning "friend of progress") and it was a joint liability based rural development program that was formed to help small and marginal farmers with challenges of accessing formal credit. This large initiative operated in nine districts of south and south-western Karnataka and had more than 163,000 members in over 25,000 Joint Liability Groups. Many of the members of the project were devotees of this temple.

The initiative provided credit, information and extension services (i.e. information about good agricultural practices and technology adoption) to its members and coordinated a unique labour sharing scheme. Under this scheme, members of the groups were mandated to work on each other's land for one day each month. In a group of five members, each member gets five labour days a month from the group. The Shri Kshethra Dharmasthala Rural Development Project had active collaborations with the state agricultural departments and it helped carry out training and extension dissemination activities for rural development.

Table 4.2: Features of the organisation

Strength of the initiative	163,000 members
Group structure	Federated groups of 5 members
Collective goods obtained	Labour, information, extension services, credit

Data for this study was collected from Dakshina Kannada and Chikmanglur districts of Karnataka. Dakshina Kannada district was chosen because the headquarters of Shri Kshethra Dharmasthala Rural Development Project was located there, and it was the first region where this program was implemented. Chikmanglur district, in contrast, was the newest region where the program was started and has been active for just over four years. For this study, 42 primary producers were surveyed in both districts and production data was also collected to determine the changes of collective action brought to producers.

4.3.1 History and context of the group

Dharmasthala is a famous temple town and pilgrimage centre for Jains and Hindus located in Dakshina Kannada district of Karnataka. For centuries the temple had played an important social and administrative role in the lives of the people in the region and in neighbouring districts. The overseer of the temple was given the title of '*Heggade*'[42] and had been the traditional lawgiver and dispute-settler for devotees of the temple. His other duties were to manage the temple and its activities, which involved charitable activities. The Shri Kshethra Dharmasthala Rural Development

[42] The Heggade is a hereditary title and the person bestowed with the title has a near deity-like relevance to believers. D. Veerendra Heggade is the present 'Dharma Adhikari' or the overseer of the temple since 1968

Project was established to carry out these charitable duties or *'Abaya dhana'* of the temple.

Karnataka was one of the few states in India where the third round of land reforms[43] was implemented in the 1980s with some success. According to Deshpande and Torgal (2003), in the pre-reform period, the Dakshin Kannada region had one of the highest tenanted landholding sizes, with 54.4 per cent of holdings and 43.6 per cent of cultivable land under tenure. Land reform in this region saw 77.72 per cent of all applicants for land ownership rights getting the land they laid claim to (ibid). The average size of the land that tenants received was quite small (approximately one acre) and many new farmers were not able to cultivate their land because of poor access to resources such as credit, extension services and quality inputs. Due to this, some of them left their land fallow while continuing to work as manual labourers.

The Shri Kshethra Dharmasthala Rural Development Project began its Pragithi Bandhu (PB) groups in the early 1990s to motivate and support farmers in cultivating their own land. In 1991, Self-Help Groups (SHGs) with 5-8 members each, focusing on small group savings and labour sharing arrangements, were formed. The labour sharing scheme of the initiative was an integral part of the Pragithi Bandhu initiative. Although this redressed concerns of labour availability at no cost, small group savings was not sufficient to provide the necessary capital for agricultural production. Furthermore, savings through labour sharing did not free up enough capital for other farm investments. Because of these limitations, the Joint Liability model was initiated in 2001 to provide the members of the Pragithi Bandhu groups with credit required for farming activities. These groups were one of the first joint liability models initiated in India, emerging earlier than the NABARD initiated models.

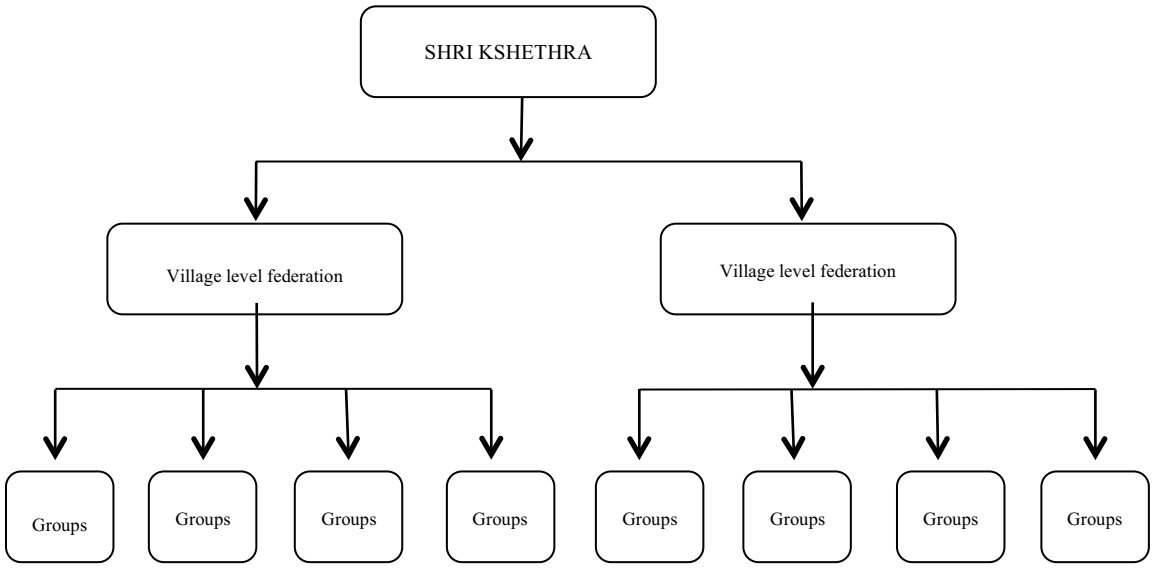
4.3.2 Organisational features

The Pragithi Bandhu model was hierarchically organised and the basic units were the farmers' groups, which comprised of 5 to 8 members. A typical group consisted of member households who were in geographical proximity to each other. The group sizes were kept small to complement labour sharing arrangements where small

[43] The third round (1970s and 1980s), known as the radical stage, aimed at giving the land to its actual cultivators. Although the first two rounds (abolition of intermediaries and providing security for tenure) were implemented to some extent in India, the third round was implemented only in a few states. Kerala and West Bengal were the states where this was more successful.

groups were necessary for effective labour rotation and monitoring. Every 25 to 30 PB groups came under a village level federation made up of a representative from each group. Each village-level federation had an independent inspector or '*sevaniritha'* whose responsibility was to inspect groups and their functioning. The village level federation reported directly to the regional office of Shri Kshethra Dharmasthala Rural Development Project (Figure 4.2).

Figure 4.2: Structure of organisation



A certain criterion was followed when primary groups were formed or when villages were adopted into the scheme. In the region or village where new groups were being formed, the elders of the village, political leaders and influential people of the region were involved and taken into confidence. Although these individuals or groups may not participate in the initiative, according to Shri Kshethra Dharmasthala Rural Development Project officials, this was important to gain local level support for the activities of the initiatives. The reputation, religious and administrative significance of the temple in the region also worked to validate this initiative at the local level. Village level politics and caste- and class-based hindrance were therefore minimal in this initiative.

The organisation structure was a top-down one, where the NGO coordinates collective action and other activities through the groups. Performance of the groups were constantly evaluated and graded by inspectors and the village level committee.

Group grades were based on the regularity on which group activities, such as labour sharing, repayment of loans, savings and meetings, were undertaken. The grades then determined the group's eligibility to access credit and other inputs and services from Shri Kshethra Dharmasthala Rural Development Project. The A grade was given to groups that were functioning well, B grade for groups with minor defects, C grade for groups with some problems such as credit recovery and D grade for groups marked for closure. Groups were disbanded if there was an outstanding loan for repayment, if people migrated or if there were incidences of death among members. An auditor conducted a study of the groups' accounts and presented a balance sheet with the assets and liabilities of the groups. In 2008-09, out of the 13,110 groups that were graded, 303 groups (2.1%) were marked as D and 539 groups received (4.1%) C grades[44]. The presence of selection protocols and evaluation criteria goes to show that the producer organisation had a code of conduct characterised by rules and regulations that were strictly implemented in the groups. These rules and regulations formed the rational controls of the groups, preventing the emergence of social dilemmas, such as shirking (not participating in labour sharing) and wilful default on credit repayments.

The external support for the Pragithi Bandhu groups came from Shri Kshethra Dharmasthala Rural Development Project, the NGO supporting this program. The NGO played an important role in helping the initiative form linkages with the state made available collective goods such as credit and extension services, thus playing a coordinating role. The NGO had an administrative role by which it obtains commitments from members and supported the formation of groups, and, therefore, it also takes on the role of enabling cooperation. Shri Kshethra Dharmasthala Rural Development Project had been involved in many grassroots level initiatives, and over the years they gathered the technical and management expertise needed to coordinate such activities. This previous experience was crucial in enabling them to coordinate this large initiative. The organisation also has no size-effect as the benefit to individual members did not reduce with an increase in its size. The financial resources of the NGO, its linkages with the state, previous experiences and management resources allowed the group to expand, making it a large initiative. Therefore the main features that characterise the organisation of Pragithi Bandhu

[44]SDRDP 2008-09 Annual Report.

groups were a) the external support from the NGO, b) small federated groups that enabled monitoring and c) previous experience of collective action. The management expertise and the resources of Shri Kshethra Dharmasthala Rural Development Project helped the initiative expand, thus has no group size effect.

4.3.3 Social features

Networks, norms, trust and values which facilitate collective action and predispose individuals to cooperate is what is referred to as social capital. Social capital that facilitates collective action is referred to as structural social capital, while social capital predisposing individuals to cooperate is referred to as cognitive social capital. Social capital played an important role in the formation, maintenance and functioning of primary Pragithi Bandhu groups. A certain criterion was followed when primary groups were formed, or when villages were adopted into the scheme. Resource homogeneity and geographical proximity of different member households were considered crucial in the formation of new groups. Therefore, different members in a group often had similar landholding sizes or resources and farm land in the same location. Familiarity and geographical proximity of households brought with it a level of social capital that increased cohesion within the groups. Pre-existing networks and trust of the neighbourhood, therefore, crucially contributed to the social capital of the group. According to Shri Kshethra Dharmasthala Rural Development Project officials, groups were self-selected and members chose which group they wish to belong. This also helps in the creation and maintenance of social capital within groups. Shri Kshethra Dharmasthala Rural Development Project's group based activities in the region had also helped in building social capital for over two decades. Norms for good conduct, trust and values from previous experiences gained from participating in collective action helped in the promotion of collective activities of the Pragithi Bandhu groups. Social capital in these groups was also maintained and promoted through purposive measures, such as mandatory group meetings, savings groups and the sharing of labour.

Members in Pragithi Bandhu groups that were surveyed belonged to different castes groups. The major caste groups were the *Gowdas* and the *Lingayats*, *Poojaris*, *Bhandaris*, *Naikas* and the *Upparas* belonging to the Other Backward Castes and Kurubas and the *Lambanis* belonging to the scheduled tribe and Scheduled Caste category (table 4.3). The survey indicated that 67 per cent belonged to Other

Backward Castes and 33 per cent belonged to Scheduled Caste and Scheduled Tribes. In the survey, groups that had members belonging to different caste groups were considered heterogeneous groups, while groups with similar caste members were considered homogeneous groups. Fifty two percent of the survey participants reported that they belonged to socially heterogeneous groups (table 4.4).

Table 4.3: Caste composition of participants (n=42)

Caste level	Number of respondents	Percentage
Other Backward Castes	28	67
Scheduled Tribes	14	33

Table 4.4: Social Characteristics of the groups in the survey (n=42)

Characteristics	Number of respondents	Percentage
Homogeneous	20	48
Heterogeneous	22	52

High social capital also contributed to low attrition rates within the organisation. 45 per cent of the households in the survey have been in the Pragithi Bandhu groups for over 10 years, and 33 per cent of the surveyed households have been in the groups for less than 5 years (Table 4.5), and most of these households were surveyed in Chikmagalur District where this initiative was relatively new. Hence, the networks, norms and networks evident in these areas form structural social capital which facilitates collective action in Pragithi Bandhu groups.

Table 4.5: Years members have been in the Initiative (n=42)

Years in groups	Number of respondents	Percentage
>10	19	45
5 to 9	9	21
2 to 4	14	33

A major part of the loyalty and group ideology was furthermore derived from a faith-based affiliation to the organisation that initiated this endeavour. Religious ideology was an important factor in group behaviour and dynamics. As Shri Kshethra Dharmasthala Rural Development Project was an arm of a religious establishment,

the affiliated faith and belief systems may have influenced an individual's propensity not to free ride. One farmer in the initiative stated,

> We have a moral obligation towards our neighbours and a religious obligation to our faith. We have a *karma* not to cheat on our labour sharing and to ensure that we pay our loans back on time. More than any organisation to which we owe allegiance to this is for our faith that we make sure this happens.

An official at the Shri Kshethra Dharmasthala Rural Development Project headquarters stated that this was encouraged within the organisation as it helped in the development of groups and maintains group-based activities:

> …I think the spiritual component plays an important role. We always think that we should use spiritual component for development. It brings discipline and commitment to development. We use it. We consciously inculcate spirituality in people in that sense. We don't encourage any 'go to temple' or anything. We have people from all faiths. Catholics …Muslims ... We encourage to believe in what you have, your faith but bring this spiritual attitude with you[45].

However, geographical and cultural proximity to the temple may also have influenced faith-based sense of obligation. In the neighbouring district of Chikmagalur, approximately 90 kilometres from the temple, groups surveyed did not show a similar allegiance. As one farmer stated:

> …no, we don't see our obligations that way. Yes it is a faith based organisation but our obligations are more to other members of the groups and we take care not to let each other down and I would not say it is because of the faith of the organisation or my faith.

Of the 17 farmers interviewed in different villages in Chikmagalur, only two mentioned having a religious obligation not to free ride. The rest stated that members of their group were friends and neighbours, and that there was a moral obligation not to free ride. A majority of the respondents of the survey said labour sharing was the main factor that influenced their participation in Pragithi Bandhu groups. The other main benefit mentioned was the credit that was made available through the Joint Liability Group initiative.

Shri Kshethra Dharmasthala Rural Development Project has also undertaken a number of gender based development activities since the early 1990's. These developmental activities were undertaken through SHGs called '*Jnanavikasa* women's SHG', with the objective of disseminating and promoting savings activities,

[45] Interview Manaorma Bhatt

family planning, child care and nutrition, social empowerment and health education among others. Women's only Pragithi Bandhu groups were also present in the initiatives to support women-headed households. In the absence of a male member, in many groups women substituted the men in labour sharing. This showed that the initiative had a strong gender focus to include and accommodate women in their initiative.

Networks, norms and trust played a crucial role in the functioning of groups. The Pragithi Bandhu initiative took care to maintain this social capital by using pre-existing networks and trust that were present from the groups' earlier group-based activities in the formation of groups. Religious ideology was a major source of structural and cognitive social capital in Pragithi Bandhu groups as it predisposes and facilitates collective action in some regions of the initiative. Group formation guidelines that consider geographical proximity of members to each other and previous experience of participating in group activities by members was also a major source of structural social capital in the groups. The social capital found within the groups helped in implementing social controls that supported rational controls (rules and regulations) in coordinating group-based activities and preventing social dilemmas. The presence of women's groups, specifically formed to tackle gender specific issues of agricultural production has also helped women-led households within the initiative.

4.3.4 Economic features

The majority of the members in the group were small and marginal farmers who grew both perennial and seasonal crops. The major perennial crops were spices such as pepper, ginger and cardamom, plantation crops like rubber and coffee along with arecanut; the seasonal crops they grew included rice and various vegetables. The Pragithi Bandhu scheme provided a combination of private and public goods to its members to help them with their production activities. The major goods provided were labour through labour sharing, credit and research and extension services to support farming activities. Only members owning land were eligible to be part of the group. Additionally, members of the groups were expected to work their agricultural land and not use hired labour (in lieu of them) for labour sharing practices. Although many farms use additional hired labour on the farms during preparation and harvest periods, this was not part of the initiative itself. Due to this, larger farms which use

only hired labour do not participate in this venture, helping to make the groups economically homogeneous. Labour sharing has brought both tangible (reduced labour costs) and intangible benefits (creation of social capital) to members in the Pragithi Bandhu groups.

According to the survey, an average of 45 man-labour days[46] or 13,483 rupees was saved per year per household through this arrangement. Some groups voluntarily took part in additional labour sharing than was stipulated by the initiative. According to Ponnappa, a member of a Pragithi Bandhu group, labour sharing had freed up family labour, and, due to this, members of the household could migrate to towns for higher paying seasonal jobs or hire themselves out as wage labourers. Sixteen farmers out of the 42 farmers that were interviewed said they or one of their family members migrated to urban areas in search of work which paid a higher wage. Twenty-three of them said that they hired themselves out as manual labourers to earn additional income for their families.

Collateral-free credit was another input that was provided by this collective action. Farmers in groups were eligible for credit amounts between 25,000 and 100,000 rupees per growing season. Credit was also given to groups to buy essential farming equipment such as water pumps and tillers, thus enabling capital formation at the farm level. Loans were sanctioned on recommendation by the village level federation whose decisions were based on group grades, resources and repayment capacity. The interest for the loans was fixed at 10 per cent per annum. The assured availability reduced the dependence of members on informal sources of credit from money lenders and other non-institutional lending sources. The geographical location and cropping patterns of Pragithi Bandhu members also reduced risks of crop failure and therefore potential risks of default. Since the Dakshin Kannada district was located on the windward side of the Western Ghats which received the benefits of the yearly south-west monsoons, drought risks in this region were lower than in arid and semi-arid regions. Also, perennial crops such as coffee, spices, arecanut grown in this region can withstand drought-like conditions more than seasonal crops such as rice and cotton.

[46]This is referred to as man-labour days because the daily wage for men is higher than the daily wage for women. In the coastal region of Karnataka, the daily wage for men is 150-200 rupees while for women it is 100 rupees.

The Pragithi Bandhu initiative did not undertake or extend any marketing activities to its members. The prime reason for this was due to the variation in the crops that was grown by different members in the groups. Instances of farmers jointly marketing their produce in some regions were observed, although this was not a set practice. Farmer's markets at the local level were being initiated; however, there has been no attempt so far to initiate forward linkages or contracts with the market. Commodity markets for spices, coffee and rubber were efficient because marketing and sales were achieved through alternative channels made available by the respective commodity boards of these produces.

Shri Kshethra Dharmasthala Rural Development Project actively collaborated with agricultural universities to help farmers' access information and technical knowledge in order to improve farm and field level practices. Experts were invited to conduct demonstrations and training programs for farmers to assist them in cultivation practices and to manage their land better. The state has played an important role in supporting the organisation as well as making available information and technical knowledge for the dissemination to primary producers. National Bank for Agriculture and Rural Development (NABARD) has made funds available to implement System of Rice Intensification or SRI, a method to increase yields, reduce water use, reduce cost of cultivation and environmental stress. Due to Shri Kshethra Dharmasthala Rural Development Projects active involvement in developmental activities, the government used them to implement other programs like Village Development Programs (VDP) through which land management practices, livestock care, health care awareness and other activities were carried out. Funds and subsidies that were available for farmers from the government were made also extended to the farmers of the groups.

The main economic features of the Pragithi Bandhu groups were that the initiative provides members with both public goods (information and research and extension services) and private goods (credit). Once the good was made available no member could be excluded from its access of consumption except under conditions of non-compliance to rules and regulations. This allowed the access of resources by members irrespective of location, social identity or economic endowment. Women's groups in the Pragithi Bandhu model further addressed specific gender-based concerns of poor access in the groups.

4.3.5 Resource allocation and incentive alignment in the groups

According to Dr. Manjunath, the executive director of the Shri Kshethra Dharmasthala Rural Development Project, a majority of the participants of the initiative were small and marginal farmers. The survey of 42 farmer members shows that the average size of landholdings in the group was 4 acres (1.6 hectares)[47]. With regard to irrigation, a majority of the respondents had access to different sources of irrigation and only 26 per cent of the respondents undertook rain-fed cultivation and were exposed to drought risks (table 4.6). This showed that the resource structure in this initiative was largely homogeneous. As the organisation was governed and overseen by an NGO, the role of privileged groups in the initiatives was absent.

Table 4.6: Access to irrigation by farmers (n=42)

Irrigation Condition	Number	Percentage
Rain fed	11	26
Well	7	17
Bore well	15	36
Tank	7	17
Canal/river	2	5

The collective goods made available in this initiative were excludable but non-rivalrous. Excludability came from the fact that members who did not follow group norms and protocols, such as labour sharing and attending group meetings, could be excluded from borrowing credit from Shri Kshethra Dharmasthala Rural Development Project. The goods were non-rivalrous within the group since the provision of a good to one member did not reduce its availability for another member. Therefore, the distribution of goods among the groups and within the groups were not conditioned on social or economic factors but were based on compliance to the rules, regulations and expectations of the initiative. The utility of collective goods in the initiative was fixed, which meant that larger landholders did not benefit more from the goods made available in the initiative. Furthermore, all members had to participate in labour sharing and were provided with a fixed amount of credit, which may have discouraged larger farmers from participating in the initiative.

[47] The smallest landholding size in the survey was half an acre or 0.2 hectares

The main incentives for participation in the initiative were purposive, solidary and material in nature. Shared beliefs in the value of labour sharing (purposive), religious affiliation of members (solidary) and economic necessity (material) predisposed members to participate in collective action. Twenty three per cent of respondents cited religion as being a major factor influencing participation (table 4.7) and this was a major source of cognitive social capital of the group.

Table 4.7: Factors influencing participation in collective action (n=42)

Particulars	Number of respondents	Percentage*
Labour	32	**76,19**
Credit	12	**28,57**
Information	3	**7,14**
Extension benefits	8	**19,05**
Ideology/religion	10	**23,81**

* As respondents cited more than one factor as their influence, the percentage and numbers are higher

The economic changes the initiative brought about to different members of the groups were the major source of material incentive to the group. Table 4.7 reveal that a majority of the respondents of the survey cited access to collective goods made available by the initiative influencing their decision to participate. This has helped reduce cost of production through the labour sharing carried out by the groups and accessing credit at interest rates set by the banks. Shri Kshethra Dharmasthala Rural Development Project has also been able to provide credit for farming and capital formations, such as purchasing equipment, along with extension services including field demonstrations to provide information about improving cultivation practices (Table 4.8).

Table 4.8: Changes from collective action

Particulars	Nature of benefits
Labour	According to the survey conducted for the study (n=42) the average labour sharing savings was 13,483 rupees
Technology	System of Rice Intensification (SRI), farming machinery
Credit	Farming credit access at reasonable interest rates has helped reduce dependence on informal sources of credit
Marketing	Collective marketing on own initiative

Using production data collected from 42 respondent households the profit and change in profit resulting from collective action was computed. Table 4.9 shows the average net profit, change in profit and percentage variation from net profit for different categories of landholdings. Some groups undertook only the minimum requried amount of labour sharing and therefore every group was able to save 6000 rupees. Marginal landholding household (<2.5 acres) showed the highest change in profits followed by the small landholders. The percentage of change was larger because the labour requirement in smaller holdings could be met more fully through labour sharing, while large landholdings had to continue hiring additional labour to meet their requirements. Larger changes in profits were seen in groups who took up labour sharing beyond the required limits. Some groups undertook six times the amount of labour sharing than what was mandated, while others undertook only the minimum. This was observed in all land holding categories. The provision of multiple goods and services to members were responsible for a major part of the changes that the Pragithi Bandhu scheme brought to its members which has shown to be the major difference of this initiative compared to other Joint Liability Group initiatives that provide only credit to its members. As most members belonged to the group for over 10 years and a majority over fiver years, changes in costs resulting from reasonable interest rates and extension services could not be calculated for this group.

Table 4.9: Changes from collective action in Shri Kshethra Dharmasthala Rural Development Project (n=42)*

		Max	Min	Average	Median
Marginal	Net Profit (π)*	156,600	6,000	39,905	29,325
< 2.5 acres	Change in Profit (δπ)	36,000	6,000	12,943.48	10,000
	Percentage change from net profit			32.44	34.10
Small	Net Profit (π)	214,295	16,000	75,586.82	54,800
2.5 - 5	Change in Profit (δπ)	36,000	6,000	12,090.91	9,600
	Percentage change from net profit			16.00	17.52
Medium and large	Net Profit (π)	225,100	22,400	118,020.8	104,562.5
> 6 acres	Change in Profit (δπ)	36,000	6,000	12,942.86	9,600
	Percentage change from net profit			10.97	9.18

* The profit function used to compute this is given in appendix VI

The case of the Pragithi Bandhu scheme shows the importance of external support, in this case through NGO intervention, in the formation and coordination of collective action. The other organisational feature of small federated groups and previous experience of organising were also crucial for the coordination of collective action in this initiative. Religious ideology played an important role and has contributed to the social capital which has been crucial for addressing social dilemmas (wilful defaulting on repayments, freeriding, moral hazard problems). It was an important source of cognitive and structural social capital that predisposed individuals to participate in collective action, enabled cohesiveness among group members, and maintained group-based activities such as labour sharing. In economic terms, the provision of other goods and services along with credit was crucial for improving the viability of producers in the groups. The goods that were made available to members were non-rivalrous and non-excludable within the group, which helped to sustain the interest of members to participate in the initiative. However, it was also apparent that in the case of marginal landholding households, it did not sufficiently raise household incomes so that families could solely depend on agriculture. Increased returns from farming under the initiative still remained an important material incentive for members to participate in this collective action. In the next section, the case of Sridevi Farmers Welfare Society is discussed to compare how the two cases are similar and different.

4.4 Case II: Sridevi Farmers Welfare Society

Sridevi Farmers Welfare Society (SFWS) is a Joint Liability Group (JLG) based producer's organisation located in Kartigi, Koppal District in the north-eastern part of Karnataka. This case was unique because 80 per cent of its 300 participants were tenant farmers who lease land from bigger landowners for cultivation every farming season. In the absence of property rights, landless farmers in India have no access to institutional credit and subsidised inputs. Their dependence on informal institutions like money lenders and intermediaries make them vulnerable in market transactions. Sridevi Farmers Welfare Society presents a case study of a group of sharecroppers who setup a Joint Liability Group in 2009 to jointly access machinery, credit, and inputs such as pesticides and fertilizers through collaborations with National Bank for Agriculture and Rural Development (NABARD) and the Karnataka State Cooperative Marketing Federation Limited (KSCMF). This organisation comprises

of 300 tenant farmer members cultivating over 1500 acres of leased land. Unlike Shri Kshethra Dharmasthala Rural Development Project, Sridevi JLG Farmers Welfare Society members grow only rice. For this study, thirty members of this initiative were surveyed and the results are discussed throughout the following.

Table 4.10: Features of the organisation

Strength of the initiative	300 members farming approximately 1500 acres of leased land
Group structure	Federated groups of 5 members
Collective goods obtained	Inputs: Fertilizers, Pesticides, credit, machinery

4.4.1 History and context of the group

Kartigi is located on the 'left bank' canal system of the Tungabadra project[48] in Koppal District. The 225 kilometre long canal system transformed this once semi-arid region into a major rice-growing belt of Karnataka. Located on the state border with Andhra Pradesh, the agricultural transformation brought an influx of Telugu speaking migrant agricultural labourers into the region. Over time, many of these seasonal workers settled down, becoming tenant farmers to big land owners who often found it difficult to hire and manage seasonal labour.

In the absence of title deeds (property rights) for the land they cultivate, these tenant farmers cannot access institutional loans from banks, subsidise fertilizers and other inputs such as seeds distributed by the state, or avail minimum support price for their produce. To compensate for this missing market of essential services, landlords, money lenders, input suppliers and mill owners began providing interlinked services including credit, inputs and purchasing services to tenant farmers. Furthermore, interlinked land-credit markets began to emerge between landowners and tenants. This has led to the growth of indebtedness and agrarian distress in the region.

[48]The Tungabadra project, which dammed the Tungabadra River in 1953, stores 180,000 million cubic feet of water used for generating hydro-electricity and irrigating the parched regions of the erstwhile Madras, Hyderabad and Mysore states (now mostly Andhra Pradesh and Karnataka). Presently, its irrigation network comprises of a three-canal system – the left bank canal (225 km long), the lower level canal (349 km long) and the high level canal (196 km long) irrigating over 300,000 hectares of land. The left bank project that irrigates over 121,405 hectares of land has converted the regions in the Raichur and Koppal districts among others into the 'rice bowls' of Karnataka.

Sridevi Farmers Welfare Society was set up in response to this condition of sharecropping farmers in this region. It began as a philanthropic endeavour by Nagaraju, a large landowner and proprietor of a local rice mill, to help local tenant farmers in the region. Being a second-generation Telugu migrant, Nagaraju wanted to initiate a project through which tenant farmers of his community could access institutional credit and reduce their dependence on moneylenders and other credit agents. Using his influence and standing in the local community, he started a Joint Liability Group scheme with a group of tenant farmers in collaboration with Pragathi Gramin Bank, the local bank and National Bank for Agriculture and Rural Development (NABARD). While the Joint Liability Group enabled access to credit for cultivation, the problems of sourcing inputs in the market remained a concern for agricultural producers. In order to tackle this problem, the group registered itself as a society and formed the Sridevi Farmers Welfare Society in 2009. Once they registered as a society, they formed linkages with fertilizer and pesticide cooperatives to source inputs and avail subsidies.

The registration process and formation of these linkages was complex as it involved different departments and ministries of the government. The financing of the group was by National Bank for Agriculture and Rural Development (NABARD), under the Ministry of Finance; the inputs sourced were through collaboration with the Ministry of Fertilizers and Chemicals; and technical support (mechanisation) for cultivation came under the jurisdiction of the Ministry of Agriculture. This required high level of coordination and involved high search and opportunity costs. When the organisation was being registered as a society, the group had to justify why they intended to form another group when there were government societies responsible for the distribution of inputs to farmers[49]. The registration of the society had to undergo a chain of scrutiny[50] before being approved. Considering these challenges, initiatives such as this would not have been able to emerge without proactive external support from NGOs or effective leadership. Joint Liability Groups in themselves could only provide credit to tenant farmers. However, by registering as a society, they were able to avail other goods collectively. It is often civil society organisations such as NGOs

[49] The existing societies in the district were *Raithra Seva Sahakara Naimitha* (RSSN) and *Vyavasaya Seva Sahakara Naimitha* (VSSN). According to informants, these societies sold fertilizer allotments given by the government for distribution in the open market while siphoning the difference as a profit. Their record books, however, showed the allotments were made to needy farmers.
[50] This chain of scrutiny often involves a background check, review of the aims of the organization, and an audit of its documentation and various collaborations it undertakes.

who have the agency to coordinate and liaise with the state to provide services to groups. In this case, the leadership initiative of an individual was able to coordinate the formation of groups.

4.4.2 Organisational features

The primary structure of the groups was based on the guidelines of Joint Liability Group regulations stipulated by the National Bank for Agriculture and Rural Development (NABARD). According to the regulations, each group should comprise of five members who stand as collateral for each other for the credit the bank lends through the federation. Beyond this structural setup, the rules and regulations of the Joint Liability Group societies were self-formulated, and credit institutions were not involved in their implementation.

Figure 4.3: Structure of the federation

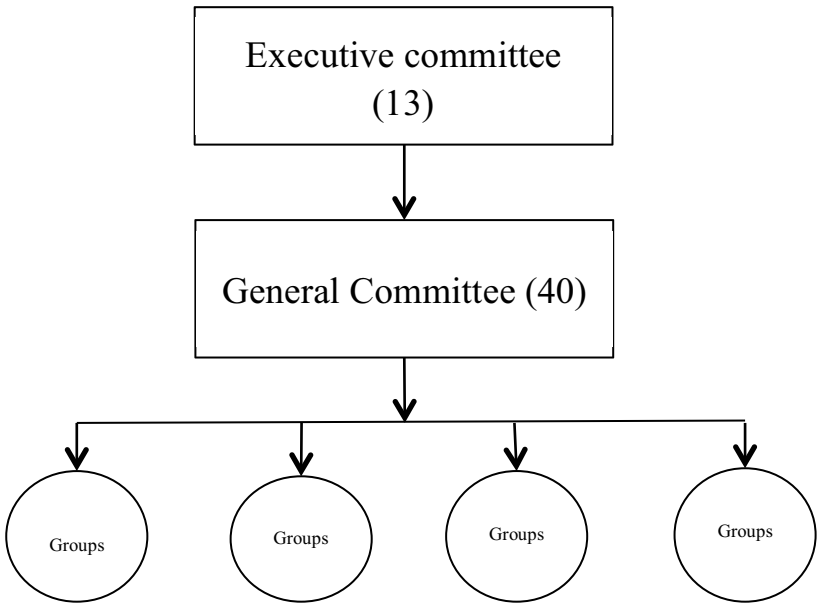


Figure 4.3 depicts the basic structure of Sridevi Farmers Welfare Society. The different borrowing groups form the primary level of the organisation. A member from a group or two was selected to represent the group in a 40-member general committee. Each committee member stood as a guarantor for various groups in the

case that members defaulted. The committee members had to compensate the defaulted amount and settle the accounts with members within the group. Thirteen members from the general committee were part of the executive committee responsible for input purchase, stock inventories, distribution of inputs and managing the federation. A general body meeting was convened every month where decisions and issues concerning the society were discussed with all members of the initiative.

In order to build up confidence and rapport with the banks, a strong emphasis was placed on the repayment of loans. The primary task of farmers, after the sale of their produce, was the repayment of loans to the banks. The 40 member of the executive committee were selected based on their economic standing in the community. They were often members who own their own land and were the privileged group of Sridevi Farmers Welfare Society. The role of the privileged group based general committee was to prevent default of payment. Some respondents spoke about coercion being used by general committee members regarding repayment of credit. Similar to the case of Shri Kshethra Dharmasthala Rural Development Project, the organisation played a coordination role as well as a cooperation role. The leadership of the group formed ties with other organisations such as banks and input cooperatives (fertiliser and pesticide) to coordinate various activities of the group, while also giving importance to coordinating and forming groups, thus enabling cooperation.

The individual groups were used only to provide loans and inputs, and no other activities were carried out jointly. Therefore, the linkages and support to the group was from credit institutions and input cooperatives. Leadership was a key element in the sustenance of the initiative. Nagaraju's standing in the Telugu-speaking community and his connections with the local bank, National Bank for Agriculture and Rural Development (NABARD), and district authority helped reduce the organising costs of setting up the initiative. It was observed that Sridevi JLG Farmers Welfare Society had a negative size-effect as the activities of the group were monitoring intensive, and the functioning of the group hinged on its linguistic and tenant farming identity. Additionally, the group's administration had little experience or management expertise to coordinate a larger initiative. The main organisational features of SFWS were: that the external support it received from leadership was crucial to form linkages with the state and parastatal organisations to access goods

and services. The primary groups were small and federated to enable monitoring and efficient credit recovery; strict rules and regulations about how credit and inputs were disseminated and how repayment of the loan needed to be carried out were essential rational controls the organisation undertook to prevent social dilemmas. The organisational feature that sets Sridevi Farmers Welfare Society apart for the other cases explored in this thesis is the lack of previous collective action experience among members. This was reflected in the absence of group-based activities such as group meetings and other purposive measures to cultivate and maintain social capital.

4.4.3 Social features

Approximately 93 per cent of the members in Sridevi JLG Farmers Welfare Society were from a Telugu-speaking minority community in Kartigi, a Kannada-speaking region. Members of this initiative belonged to the *Kamma, Chaudhry, Lingayath, Kapu* and *Lamini* castes. The Kapu and Lamini castes are scheduled castes while the Kamma, Chaudhry and Lingayaths are considered Other Backward Castes. In the survey that was conducted for this study, a majority of the participants (63 per cent) belonged to the Kamma community which was the dominant caste (Table 4.11). When asked regarding the social homogeneity of their groups, 47 per cent of the respondents said they belonged to groups in which all the other members were from the same caste (table 4.12).

Table 4.11: Caste Composition of members surveyed SFWS (n=30)

Caste	Number of Respondents	Percentage
Kamma	19	63
Chaudhry	3	10
Kapu	3	10
Lamini	3	10
Lingayath	2	7

Table 4.12: Social characteristics of the groups SFWS (n=30)

Characteristics	Number of respondents	Percentage
Homogeneous	14	47
Heterogeneous	16	53

As majority of the members in Sridevi JLG Farmers Welfare Society belong to the Telugu speaking minority community in a Kannada speaking region, the level of solidarity among members of the group was high. This identity and solidarity brought with it trust, networks and norms (valuation of expected behaviour) to the functioning of the group contributing to its social capital. This linguistic identity along with the fact that tenant farmers could acquire goods they would otherwise not be able to attain also predisposed members to participate in collective action. Visits to Kartagi and different farmer households revealed that no member to date has defaulted on their loan repayment, nor did any farmer leave the society. This low attrition was due to the benefits the group provides to farmer members who would otherwise have to depend on informal sources and their adverse terms to source credit and input. This showed that there was a high level of interest among members to stay in the group which helped muster cognitive social capital that predisposed individuals to cooperate. Therefore, despite the group having no previous experience of coordinating collective activities, cultural homogeneity of the group helped build social capital within the initiative.

The influence of caste-based power, however, was prevalent in the organisation of the group and its governing structure. Economic endowment of members (land owning members) determined their standing and influence within the federation. Most land owning member were from the Kamma castes and, they made all decisions in the federation. Their status was also used in ensuring that members of the groups did not default, thus playing a monitoring role. Thus, norms characteristic of caste hierarchies played an important enforcing role within the initiative.

The major social feature of Sridevi Farmers Welfare Society was the group's cultural homogeneity. As members belonged to the same cultural group of the region's Telugu speaking community, this was also a major source of cognitive social capital. Group-based activities among the members were limited as the groups were formed only for the dissemination of credit and inputs. As members in the groups had no previous experience in organising, and there were no group-based activities such as distribution of extension services and group savings taken up, the reliance on groups was low. Purposive measures to build social capital such as meetings and information sharing were absent in groups. This meant that structural social capital predisposing individuals to act collectively, although present, was weak. Alternatively, stringent

monitoring procedures using privileged groups and their influence in the community reduced the reliance on peer monitoring. In this group, although social controls were used to influence repayment schedules and adherence to rules and regulations, the role of rational controls were stronger.

4.4.4 Economic features

Sridevi Farmers Welfare Society made available private collective goods to members. Credit, fertilizers and pesticides and mechanised farm equipment were the main goods. Although there were plans to initiate marketing activities through the Agricultural Produce Marketing Committee, they had not been initiated yet. Each member in the group was given 50,000 rupees as credit to farm five acres of land. The federation did not stipulate how much land individuals could lease, however, credit and input support was provided only to cultivate five acres of land. The entire credit sum was not given in cash; fertilizers and pesticides worth 35,000 rupees were given to each member, and 15,000 rupees in cash was given for other expenditures, such as labour and machinery rent. This ensured that most of the credit lent was spent on production activities.

The major change Sridevi Farmers Welfare Society has brought about, other than the provision of credit, has been fertilizer and pesticide inputs. A critical challenge facing tenant farmers has been the sourcing of inputs from the markets at a fair price or the retail price. In the region, due to low bargaining power of tenant farmers or the need to buy inputs on credit, prices charged to them was often higher than the retail price. In order to make inputs available to its members at a fair price, the federation established collaborations with the Karnataka State Cooperative Marketing Federation Limited (KSCMF), the apex cooperative institution in the state responsible for the distribution of agricultural inputs and implements. This collaboration allowed for the bulk purchase of fertilizers and pesticides by the federation at wholesale prices. Another advantage was that inputs could be purchased during the off seasons when prices were lower[51]. Sridevi Farmers Welfare Society also collaborated with the Karnataka state Agricultural Department to purchase a rice transplanter through the help of a subsidy[52]. With the turn to mechanisation during

[51] Only 80% of the discount was passed on to the farmers, while the federation, as a corpus for its activities, retains the remaining 20%.
[52] A loan of 5 lakhs and a subsidy of 4.6 lakhs were given by the Agricultural Department of Karnataka.

the sowing process with the help of the purchased rice transplanter, members could reduce the cost of labour.

Furthermore, the availability of credit for farming may have diminished the role of traders and mill owners as informal credit agents; however, the moneylenders still had a role in supplying credit for private consumption purposes. The survey reveals that 40 per cent of farmers still had dealings with informal credit sources, 10 percent had dealings both formal and informal sources, and 27 per cent had no credit relationship other than with the federation (Table 4.13).

Table 4.13: Different sources of credit after collective Action (n=30)

Particulars	Number of respondents	Percentage
No credit	8	27
Informal	12	40
Formal source (banks)	7	23
Both	3	10

Extension services, however, were not provided by Sridevi Farmers Welfare Society to its members. Channels of information dissemination to improve farming and other land management practices to maintain soil health and nutrition levels were evidently lacking. Additionally, collaboration with technical organisations or agricultural universities to source information regarding better practices and environmentally safe practices were also missing. A farmer revealed that:

> We have not demanded that any such services be given to us from the federation. We lease out land for a growing season and sometimes for a year and often the next sowing season, we may not lease the same piece of land. So generally, we try to get out as much as we can from the piece of land we lease by high fertilizer application and readily available canal water[53].

Clearly, the focus of most tenant farmers was to maximize output from the land through input intensive agriculture. The availability of canal water and subsidised inputs from the society made it possible for farmers to have this focus. An important input not provided by the joint liability group was seeds. The farmers often sourced it from the market or from traders. In order to save on input costs, respondents revealed that uncertified seeds were used which have the risk of being spurious. This practice

[53]From field notes collected during the survey.

and the absence of extension services have led to high variations in yields on the farms of different members. Table 4.14 shows 13 bag differences in yield among tenant farmers in similar agro-climatic and irrigation conditions. The average yield per acre was 402 kilos, which was low for intensive input, irrigated farming.

Table 4.14: Average yield for five acres (Bags of 75 kgs) (n=30)

Particulars	Min	Max	Difference	Average	Std.dev
Yield per acre	32	45	13	39.93	2.91
Yield per acre after lease	18	31	13	25.62	3.07

4.4.5 Resource allocation and incentive alignment in the groups

Although a majority of members participating in the initiative were landless sharecropping farmers, some members owned land. Around 20 per cent of members surveyed for this study owned land. As the region was located in the catchment area of a canal irrigated zone, all members had access to irrigation facilities and this reduced drought risks for these farmers. The resources allocated to members of the initiative were non-rivalrous and non-excludable within the group. This meant that members could not be excluded from accessing or using the collective good once made available, and the use of the resource by one member did not reduce its availability for another member. However, the cultural homogeneity of the group revealed that cultural identity may have been an exclusionary principle of the group.

In terms of distribution of resources in the group, the utility of collective goods made available to the group was fixed. This meant that the amount of credit and inputs given to each member of the group was fixed irrespective of whether the member leased or owned additional land. Fifty thousand rupees worth of credit and inputs were given to cultivate five acres of land. Members with additional land had to source resources for cultivating it outside the initiative. However, access to mechanisation had variable utility in the initiative. The transplanter that was owned by Sridevi Farmers Welfare Society could be leased by all members of the initiative, and members with additional land were able to save on labour costs.. This was a major incentive for landowning members to be a part of the initiative.

The solidary incentive for participation in the group was the cultural identity of the members, as well as the economic identity as sharecropping farmers. Belonging to the same linguistic group brought with it elements of trust and norms that were crucial for the formation of the groups. Their identity as sharecroppers also helped mobilise interest as they shared similar challenges of poor access to credit and inputs. However, the material incentives were the major factor that predisposed individuals to participate in this initiative. Sridevi Farmers Welfare Society made available credit, fertilizers and pesticides as well as farm machinery to its members. This helped to reduce costs of production by over 3,500 rupees per acre and transportation costs by over 1000 per farmer. The use of the transplanter has helped save 1,715 rupees per acre in labour (transplanting and weeding) and nursery costs (Table 4.15). The availability of these goods was made possible by the networks that the leader of Sridevi Farmers Welfare Society had with the state.

Table 4.15: Changes in cost of production before and after collective action (Rs/per acre)

Particulars	Before	After	Percentage change
	Input costs		
Fertilizer and Pesticides (incl. transportation costs)	8,510	7,000	17.74
	Labour Costs		
Sowing	2,000	1,115	44.25
Weeding	600	230	61.66
Harvesting	2,000	2,000	0

The other major benefit of organising as a group was that members were able to prevent the exploitation of high rents. Land lease agreements were fixed contracts of bags of rice per acre. In Sridevi Farmers Welfare Society, the rent was between 12-16 bags of rice of 75 kilos each per acre, depending on conditions such as soil health and distance from the canal (Table 4.15). The average price of land lease was often known to members of the group giving them information to bargain. Similarly, different members also shared information regarding market prices of grain. Although this may increase awareness of market prices among farmers, it may not have resulted in price realisation. Table 4.15 reveals that prices varied by about 300

rupees per bag of rice in the markets or mills where the grains were sold. Although these services were not made available by the initiatives, the organisation of groups enabled the sharing of information to bring about some changes in bargaining. These formed the material incentives for members to stay in the groups, and the benefits predisposed members to participate in collective action.

Table 4.15: Lease rate and market price of farmers

Particulars	Min	Max	Difference	Average	Std.dev
Lease Rate Per Acre (Bags per Acre)	12	16	4	12.47	5.06
Average Market Price (Price per bag*)	900	1,200	300	980.83	46.72

* In rupees

Using production data collected from 30 farming households, the net profit and change in profit was calculated to determine the changes brought about through improved access to inputs, credit and mechanisation (Table 4.16). The three categories of producers in Sridevi Farmers Welfare Society were: sharecroppers who did not own any land, partial sharecroppers or small landholders who additionally leased land, and large farmers (above 10 acres) who leased land only to be a part of the initiative (the privileged group). Larger changes in profit were seen for sharecropping farmers and land leasing small farmers. For both these categories, the percentage change in profit resulting from collective action was around 30-32 per cent.

For the larger landowners, credit and input provision did not bring much change in input costs. The change in profit for large land owners was through mechanization. The use of Sridevi Farmers Welfare Society's transplanter helped the large landowners reduce labour costs by 1255 rupees per acre. The relatively large size of leased land and improved bargaining of rents have helped producers make reasonable returns.

Table: 4.16: Change from collective action in Sridevi Farmers Welfare Society * (n=30)

		Max	Min	Average	Median
Only lease	Net Profit (π)	59,333.33	21,571.67	41,456.77	39,566.67
	Change in Profit (δπ)	14,084.43	9744	12,501.81	12,687.50
	Percentage change from net profit			30.16	32.07
Partial lease - small	Net Profit (π)	101,070.67	22,676	55,425.33	56,538.67
	Change in Profit (δπ)	20,740	16,975	18,230	18,230
	Percentage change from net profit			32.89	32.89
Partial lease-large	Net Profit (π)	554,713.33	109,340	358,497.89	40,9451.67
	Change in Profit (δπ)	38,310	25,760.00	32,244.17	32,662.50
	Percentage change from net profit			8.99	7.98

* The profit function used to compute this is given in appendix VI

In sum, the main organisational features that enabled the formation of Sridevi Farmers Welfare Society was the external support it received from a leader through whom linkages were formed with the National Bank for Agriculture and Rural Development (NABARD) and input cooperatives. These linkages characterised the main economic features of the group. As sharecroppers they were able to access credit which helped them to address the credit supply effect of not possessing property rights. This formed a major incentive to form and participate in collective action. They were also able to negotiate fair sharecropping contracts from landlords. However, they did have long term contracts as lease agreements were only for a year. As a result, sharecroppers did not have security for their land, and, therefore, did not invest in extension services to improve land quality. The main social feature of the group was that it was a culturally homogeneous group as all members belonged to a Telugu speaking minority in Karnataka. This was a major source of cognitive social capital that predisposed individuals to cooperate. Their economic identity as

sharecroppers sharing similar problems also facilitated collective action in this group. Sridevi Joint Liability Group Farmers Welfare Society was an example of collective action addressing concerns of credit flow concerns and production disadvantages of sharecropping and tenant farming in Koppal district in Northern Karnataka.

4.5 Discussion

Joint liability groups in themselves are not organised as collective actions capable of bringing about access to collective goods and services other than institutional credit. Therefore, despite the large number of such groups being promoted by National Bank for Agriculture and Rural Development (NABARD), very few emerge as organisations promoting collective action. Sridevi Farmers Welfare Society and the Pragithi Bandhu scheme were examples of initiatives that have organised themselves as producer groups to access inputs such as subsidised pesticides and fertilisers and extension services along with credit to improve the agricultural production conditions of its members. Although both these initiatives were Joint Liability Groups, they were structured differently according to their unique economic conditions and the necessities of their stakeholders. In this section, the similarities and differences of these initiatives are compared to highlight the factors that influence the structure of these initiatives coordinating collective actions. Table 4.19 highlights the similarities and differences of the Pragithi Bandhu scheme (PB) and Sridevi Farmers Welfare Society (SFWS).

Table 4.19: Similarities and differences of PB and SFWS

Features	Similarity	Differences
Organisational	- Joint liability group initiative supported by NABARD - Hierarchically organised - Small federated groups - Centralised decision making - Formal rules of	- PB was governed and managed by an NGO, while there was no NGO support or intervention in SFWS. - PB had previous experience in organising collective action, while SFWS was a new initiative - PB was a large initiative compared to SFWS - SFWS had a negative group size effect while PB had no size effect.

	functioning (rational controls) - Cooperation and coordination role of the organisation	
Social	- Heterogeneous caste groups in both initiatives - Importance of social capital in organising the initiative (social controls)	- The major source of social capital for PB was from previous organising experience and religious capital based on their ideology - Homogeneous cultural identity of members in SFWS was a source of social capital - PB had gender specific initiatives - Purposive measures to encourage group activities were taken to build social capital in PB - Dominant caste members and members with resource endowments influenced governance in SFWS
Economic	- Credit a major collective good - No marketing initiative - Collective goods were non-excludable - Lower risks due to high rainfall and access to canal irrigation	- PB grew multiple perennial and seasonal crops, While SFWS members grew only rice - PB provided credit and extension services, SFWS provided credit and inputs and no extension services. - SFWS was able to make favourable tenure contracts

Resource allocation	- Collective goods were non-rivalrous - Majority of members were homogeneous resource (land and irrigation) endowment - Collective goods had fixed utility in groups	- PB comprised of small farmers, while a majority were landless farmers in SFWS. - Access to mechanisation had variable utility in SFWS
Incentive alignment	- Material incentives to organise were high - Solidary incentives played a major role in maintaining groups	- Purposive incentive in the form of religious beliefs played a major role in PB

4.5.1 Organisational similarities and difference

The Pragithi Bandhu scheme of Shri Kshethra Dharmasthala Rural Development Project (SKDRDP) and Sridevi Farmers Welfare Society (SFWS) were both hierarchically organised hybrid institutions with a highly centralised decision making structure. Considering the two initiatives provide credit as a major good, they comprise of small federated groups of 5-8 members to serve the purpose of joint liability and labour sharing. Small groups enable monitoring of various activities of members and prevent social dilemmas such as defaulting on payment and shirking in labour sharing activities. Rules and regulations as rational controls were crucial in these groups to prevent wilful defaults on repayment and shirking in the case of labour sharing. The main organisational differences between the two initiatives were with regard to how the groups were governed, their previous organisational experience and the size of the initiatives. Pragathi Bandhu groups were governed by the NGO and not by stakeholders, while Sridevi Farmers Welfare Society, in practice, was governed by a privileged group of economically powerful members.

The reputation of Shri Kshethra Dharmasthala Rural Development Project, the NGO supporting the Pragithi Bandhu scheme, and the influence of leadership and the privileged group in the case of Sridevi Farmers Welfare Society, was crucial in acquiring external support and forming ties with financial institutions such as National Bank for Agriculture and Rural Development (NABARD), technical institutions such as agricultural universities, and cooperatives that provide inputs to bring changes in agricultural practices and production costs. The NGO and leadership played a coordinating role. They also enabled cooperation as they played a role in obtaining commitments from different participants, helped in the formation of groups and helped manage and promote group-based activities.

Another major organisational difference of Sridevi Farmers Welfare Society and Pragithi Bandhu scheme was the size of the initiative. Sridevi Farmers Welfare Society as an initiative identifies itself as a minority group and had limited expertise in managing large initiatives. Therefore its scope to expand is limited. Shri Kshethra Dharmasthala Rural Development Project was a large organisation that has been involved in community-based development work for decades. Its reputation, experience and expertise in organising collective initiatives and its linkages with the state has helped it expand its developmental activities in other regions of the state of Karnataka. Therefore the Pragithi Bandhu scheme had no group size-effect while SFWS's potential to expand was limited by its negative group size-effect, which means that the larger the group became, its organisational effectiveness could potentially diminish. Therefore, the main organisational factors which have influenced collective action in the two groups were external support, federated group size and previous experience in the case of the Pragithi Bandhu scheme.

4.5.2 Social similarities and differences

A comparison of social features of the two groups reveals that there were more differences than similarities. This was because these organisations were influenced by their social and ideological characteristics, and this has played an important role in how these two respective organisations were structured and function. Social capital in both these groups was crucial in the organising and regulating these groups. Sridevi Farmers Welfare Society can be identified as an initiative comprising of Telugu-speaking tenant farmers in Koppal district. Owing to this cultural identity, the cognitive social capital predisposing individuals to cooperate was high. Shri Kshethra

Dharmasthala Rural Development Project as an NGO identified itself as a religious NGO undertaking development. Its religious identity contributed to the groups' cognitive and structural social capital and defined the perception of collective obligation to each other. The traditional influence of the temple in the local community has also reduced potential interference from rural elites mustering their support for the initiative in the region. Over two decades of experience in participating in group-based activities have also helped generate structural social capital through network relations and trust in various groups, helping also to facilitate and sustain collective action initiatives.

Structurally, the groups under the Pragithi Bandhu scheme were socially heterogeneous as members of different castes participated in groups. In Sridevi Farmers Welfare Society, the Kamma caste, land-endowed group formed the privileged group within the organisation. The power coming from resource endowment and caste status was used in the enforcement of rules in the initiative. There were also no other purposive measures to build social capital in Sridevi Farmers Welfare Society and group-based activities such as savings groups, mandatory meetings, and group-based provisions of extension services were missing in this initiative. On the contrary, purposive action in the form of labour sharing, mandatory group meetings, savings group activities and information sharing helped to nurture structural social capital in the Pragithi Bandhu scheme. There were also 'women's only' groups under the Pragithi Bandhu scheme to support female-headed households in farming activities. Restricted by its identity as a sharecropper and linguistically homogeneous group, Sridevi Farmers Welfare Society was an exclusive group where other social groups may not be accommodated. Conversely, Shri Kshethra Dharmasthala Rural Development Project as an NGO has approached its initiative with an inclusive aim by accommodating farmers of all castes and religions, and this has enabled them to expand their initiative to other regions of Karnataka. The main social feature influencing collective action in the two initiatives were cognitive social capital from religious ideology and cultural similarities and structural social capital from previous experience in the case of the Pragithi Bandhu scheme. Social capital was a crucial element for enforcing social controls and complimented rational controls characterised by rules and regulations to prevent the emergence of social dilemmas.

4.5.3 Economic similarities and differences

The main economic characteristic of the members in both these initiatives was their land endowment. In the case of Sridevi Farmers Welfare Society, a majority of the members were landless, while a majority of the members of the Pragithi Bandhu scheme were small and marginal landholders. Therefore, the primary aim of these organisations was to redress the challenges of poor access to credit, inputs and extension services that concerned these groups. The Pragithi Bandhu scheme and Sridevi Farmers Welfare Society were mainly credit-providing organisations which also made other services such as labour sharing, inputs and extension services available to its members.

The provision of collateral-free credit runs the risk of unintended default in situations of crop failure, and wilful defaults when groups or individuals refuse to repay. Though Joint Liability Group initiatives may help in reducing wilful defaults, there was still a risk of unintended defaults due to vagaries of the weather that could lead to crop failures. Therefore, many organisations such as NGOs do not initiate agricultural lending on large scales due to high risks associated with weather dependent crop failure. For this reason the location of these two initiatives was crucial in the provision of credit to its members. The Pragithi Bandhu groups were located in a region with high seasonal monsoon, while Sridevi Farmers Welfare Society was located on the banks of a major canal system that effectively reduced the risks of crop failures and increased the capacity of members to repay borrowed credit.

The main collective goods made available to members of the Pragithi Bandhu groups of the Shri Kshethra Dharmasthala Rural Development Project were labour sharing benefits, credit and extension services which have helped reduce production cost in agriculture. Tenet farming in India is challenging due to sharecroppers' inability to access credit, subsidised inputs and extension services provided to the farm sector in India. This was due to the lack of property rights which prevents access to institutional credit. Considering the small size of land holdings in India, sharecropping may have the potential to address issues relating to small land size if sufficient tenure security was provided. Sridevi Farmers Welfare Society was an example of how collective action could help tenant farmers access credit and inputs to increase production by addressing issues of access to credit and inputs. However, in the absence of long-term contracts, farmers were not keen to invest in methods

necessary to improve practices or access extension services which can potentially increase yields. This was reflected in the low yields despite high levels of fertiliser application and access to irrigation. This may also be due to poor soil conditions resulting from mismanaged high input agriculture. In this way, an additional advantage collective action has brought about has been increased bargaining power in negotiating land rents. The tightened regulation and credit discipline within the group ensures the credit provided to farmers is used for farming. It is crucial to note that economic necessity among members and the disadvantages that small farmers face predisposed members to participate in collective action.

4.5.4 Similarities and differences in resources allocation and incentive alignment

The similarities of these two initiatives in relation to how resources were allocated and incentives were aligned were more than those regarding aspects of their structure. This shows that these initiatives had similar aims of increasing access to resources and services to improve production conditions of their members. However, the means of achieving them varied as they were conditioned by their unique geographical, resource and social characteristics. This makes the understanding of how collective action is structured in organisational, social and economic terms crucial in determining how initiatives can achieve their economic goals.

The primary difference between the resource structures of the two groups was that Sridevi Farmers Welfare Society was an initiative that comprised largely of sharecroppers who cultivated leased land, while in the Pragithi Bandhu scheme, members possessed property rights to their farms. In both cases, the majority of members participating shared similar resources structures (small and marginal or sharecropping farmers) and therefore also similar production challenges. As organisations which coordinated collective action, all the goods that were made available to members were non-rivalrous, and in the case of Sridevi Farmers Welfare Society, they were non-excludable. Members could be excluded from accessing credit in Pragithi Bandhu scheme if groups did not adhere to group activity protocols. All collective goods that were made available to members had fixed utility, therefore, all members, irrespective of resource endowment, had access to these resources. Only mechanisation had variable utility in Sridevi Farmers Welfare Society and since farmers owing land could gain more through reduction of production cost. This was

also an incentive for more resource-endowed farmers who formed the privileged group of the initiative to stay in the producer organisation.

In both initiatives, material incentives proved crucial for the functioning of the group as they increased viability of small and marginal production, compared to if they would not have organised. This was the central incentive for different members of the group to organise. Solidary incentives were also important to facilitate members to cooperate and conform to the rules of the group. In the Pragithi Bandhu scheme, the religious beliefs of the group and the NGO coordinating the initiative gave purposive incentive to some members of the group.

4.6 Conclusion

This chapter looked at two cases of credit-providing producer organisations in the state of Karnataka to understand how these initiatives were structured in organisational, social and economic terms. This shed light on how small and marginal and landless agricultural producers were able to access credit, inputs and extension services that were otherwise not available to these groups. This chapter also assessed how these groups were similar and differed from each other. They were similar in terms of their hierarchical structure, federated small groups and ability to provide goods that were non-rivalrous and non-excludable to all its members. However, they were different in regards to how they were organized (NGO or leadership), and how they were governed (NGO or privileged group). They were also socially different in terms of the social groups they served (exclusive and inclusive groups). The resource endowment of members (small and marginal and landless), the crops they grew (seasonal and perennial) and they services they provided (labour sharing, mechanisation, input provision) differentiated the groups in terms of their economic features. These differences emerged as a result of the variations of the organisations' aims and purposes and prevented the potential social dilemmas that might emerge. The next chapter looks at two producer organisations in the state of Karnataka and Tamil Nadu. In contrast to Pragithi Bandhu scheme and Sridevi Farmers Welfare Society, these two cases are non-credit providing organisations with a strong focus on marketing and value addition which provide additional considerations for analysing how they are structured or incentivised differently.

Chapter V: Non-Credit collective action initiatives- The Cases of Farmers' Federation and Producer Companies

5.1 Introduction

Aharam Producer Company (APC) and Savayava Krushikara Sangha (SKS) like Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society are two producer organisations in the states of Tamil Nadu and Karnataka respectively that emerged to address similar production challenges of access for their small and marginal producer members. Unlike the cases in chapter 4, these organisations did not provide agricultural credit to their members. These organic cotton growing producer organisations however, have been able to successfully integrate their supply chain (Aharam Producer Company) and form forward contracts with a textile company (Savayava Krushikara Sangha) through which they have been able to attain higher premium price. In this chapter, the cases of Aharam Producer Company and Savayava Krushikara Sangha are studied to understand how they are structured in organisational, social and economic terms. This will help to see how they differ from credit-providing organisations that were looked at in the previous chapter, as well as how they differ from each other as a producer company and farmers' federation.

This chapter points out that the characteristics of Producer Organisational Formats (POFs) as producer companies, joint liability groups and farmers' federations may not matter, as performance crucially depends on how they identify region specific challenges and structure themselves to address these challenges. This chapter, in contrast to chapter 4, comprises of non-credit providing organisations, and, I argue, that the nature of goods (credit, marketing services) provided by Producer Organisational Formats depended on geographical factors such as rainfall and climatic risks, infrastructure such as canal systems and the ability to form linkages with the state and markets. In the two cases explored in this chapter, the main collective goods were in the form of inputs (seeds), information and extension services, marketing services and value addition services. The main interventions in

these initiatives were in the downstream markets which were absent in the cases explored in the previous chapter. Similar to chapter 4, the two cases assessed here highlight the role played by federated small groups, previous experience of organising, external support as organisational features and structural and cognitive social capital as social features in how producer organisations are structured. Aharam Producer Company and Savayava Krushikara Sangha, however, differ from the previous cases in terms of their goods and services they provide to their members. The critical point this chapter makes is that the collective goods the producer organisations accessed influences the behaviour and propensity of members to free ride or shirk and, therefore, organisational and social features of group vary accordingly.

This chapter is divided into four parts. The first part looks at the main characteristics of farmers' federations and producer companies in India. In this section, the reasons for their comparison in this study are also established. The second and third part of this chapter assesses the structure of the two cases and how resources are allocated and incentives aligned within them. The last part concludes the chapter by comparing the organisational, social and economic features of the two organisations to understand how they are similar and differ from each other. These case studies show how non-credit providing producer organisations are organised and coordinated to address production and access concerns among small and marginal agricultural producers to improve surplus creation at the household level. Crucially, it also shows how achieving this is conditioned on how resources are allocated and incentives aligned in these initiatives.

5.2 Producer companies and farmers' federations in India

Producer companies are formally recognised producer organisations whose functions and structure is mandated under the Companies Act of India. These companies comprise of members involved in activities such as producing, harvesting, procuring, grading, handling, marketing, selling, exporting of primary produce or importing of goods and services for production. Presently, there are 300 producer companies in

India involving 500,000 farmers[54]. There are another 200 companies in the process of being formed and another 1000 organisations were sanctioned in 2013. This is largely due to that fact that in recent years, there have been attempts to promote organisations such as producer companies to improve productivity in the agricultural sector and other non-farm sectors involved in production and marketing of agricultural commodities. In the 2013 budget speech, the Finance Minister, P. Chidambaram, stated that 50 crore rupees (500 million) has been earmarked to provide support for registered producer organisations, and each producer company is eligible to avail a maximum of 10 lakh rupees (1 million) as support to be used as working capital[55]. These policy initiatives by the government to support and promote such organisations in India as a means to improve productivity are important. However, the success of these organisations depends on their ability to access these schemes and provisions and effectively distribute them among their members.

Farmers' federations are not structurally mandated in policy like producer companies or through schemes of parastatals as in the case of joint liability groups. They emerge through NGOs or leadership interventions with the aim of organising collective action to enable access to specific goods or services for agricultural production. These organisations register themselves as trusts or societies to legitimise their functioning. As a result, the actual size of this segment or classification of their activities is hard to determine. The term 'farmers' federations' is used in this study to denote the form of collective action involving primary producers that are not structurally producer companies or joint liability groups. Although their features may differ from case to case, their similarities lie in the nature of collective action, the collective goods they acquire and the legal form of their identity.

There are no specific guidelines as to how members and production activities are to be organised within the company. The guidelines and legislature mandates only the general governance structure of the producer company as they do in most business firms. The nature of goods, the type of service provided, how services are disbursed among members and how social dilemmas are addressed will depend on how producer companies are organised as collective actions. Therefore, Aharam Producer

[54] http://www.thehindubusinessline.com/industry-and-economy/agri-biz/govt-steps-in-to-provide-link-between-farmers-retail-chains/article4530325.ece
[55] Source: ibid

Company, the producer company identified for this study, is not different from the Savayava Krushikara Sangha a farmers' federation or from the Joint Liability Groups assessed in the previous chapter in terms of its aim to improve access to its small and marginal producer members.

The cases of Aharam Producer Company and Savayava Krushikara Sangha were chosen for comparison for their similarities and differences. First, in terms of similarities, both of the organisations were produer organisations coordinating collective action. Second, Aharam Producer Company and Savayava Krushikara Sangha were initiatives that undertook the growing of organic cotton, and therefore faced similar challenges. Third, both the initiatives were non-credit Producer Organisational Formats, but undertook post-harvest marketing interventions (farm gate sale of cotton at premium price and value addition). The differencs was that they were situated in different states in south India and that they were different formats carrying out similar activities. Table 5.1 details the location of the two cases.

Table 5.1 Cases for the study

Name	Location	State
Aharam Producer Company	Madurai District	Tamil Nadu
Savayava Krushikara Sangha	H.D. Kote Taluk, Mysore District, Karnataka	Karnataka

5.3 Case I: Aharam Producer Company

Aharam Producer Company (APC) is an incorporated company located in the Madurai district of Tamil Nadu. This initiative is one of the flagship projects of Covenant Centre for Development (CCD), an NGO that has been working on livelihood and social issues in the region for over three decades. The producer company (PC) is one of a series of development initiatives that Covenant Centre for Development has undertaken to effectively integrate primary producers into the markets. Aharam Producer Company is a producer company with seven divisions of cotton, mango, groundnuts, vegetables and coconut coir and a weaving and handlooms. Although the company was setup in 2005, different divisions were added to it consequently. Only the cotton division of the company and its stakeholders were

studied as farmers grew similar crops (cotton), making it comparable with the case of Savayava Krushikara Sangha, a cotton-growing collective action initiative. Additionally, the cotton wing has established its own spinning factory in an attempt to integrate the supply chain. Cotton from farmers were procured by the company, ginned, spun and the yarn is then sold to the market. The proceeds from this were disseminated among primary producers.

This initiative had 250 members who collectively access inputs such as seeds, R&D benefits like extension services, information and training and marketing benefits of the integrated supply chain and value addition to bring economic viability to small and marginal agricultural producers (Table 5.2). Therefore, the private goods this collective action provided its members are inputs, marketing services, technical expertise for organic farming and returns from value addition. The public goods it provided were extension services and information about good growing practices. Twenty-two respondents were interviewed for this case study using a detailed questionnaire.

Table 5.2: Features of the organisation

Strength of the initiative	250 members
Group structure	Federated groups of 12-18 members
Collective goods obtained	Seeds, growing technology, information, training, joint marketing, value addition, organic farming

5.3.1 History and context of the group

Aharam Producer Company is an initiative that is supported by the Covenant Centre for Development (CCD) is an NGO working on livelihood-based initiatives in Madurai district of Tamil Nadu, since 1988. The initial focus of Covenant Centre for Development was to rehabilitate at-risk adolescents in towns, who had migrated to urban areas in search of a livelihood due to agrarian distress in rural areas. A majority of the child migrants were from the drought-prone areas of the Ramnad Plains of Tamil Nadu[56]. In order to deal with this problem, Covenant Centre for Development

[56]The districts in this region are Madurai, Shivagangai, Vrithunagar and Ramanathapuram.

began development programs and livelihood-based activities in different villages in and around Madurai. The initial development activities targeted women through the formation of Self-Help Group (SHG) savings schemes to help them to support their families during the lean drought periods. During droughts, male members of the families often migrated into cities in search of work. This organisation was among the first to start SHG-based activities in the region.

Since Self-Help Group models were unable to effectively raise income levels and living standards in rural areas, Covenant Centre for Development began initiatives that attempted to link producers and livelihood activities to the markets. Its first initiative was a Ford Foundation-funded project to conserve medicinal plants in the region, promote home-based healing systems and traditional knowledge in the year 2000. This project helped set up a federation of 2000 medicinal plant gatherers called *Muligai Sagupediyar Muligai Sekharipur Sanghanghalin Kootameppu* (MSMSSK), which means: the federation of medicinal plant gatherers and cultivators. MSMSSK was set up as a public limited company in 2000[57]. The success of this venture and the amendment of the Company's Act that enabled the formation of producer companies led to the formation of 'The Aharam traditional crops Producers Company' (APC) in 2005. In 2008, Covenant Centre for Development set up 'Adaram Energies Initiative Private Limited', a private limited company, with the assistance of funds from British Petroleum (BP). In 2011, another private limited company called Kalasam Sacred Foods private was established as a joint venture with CSR Capital, a Danish firm involved in rural development investments. When BP withdrew support because of the financial crisis, CSR Capital took over shares in the Adaram Energies Initiative as a minority stakeholder.

The focus of this case, the cotton division, is one of the seven divisions that make up Aharam Producer Company. This division was setup in 2009 after Bestseller Foundation, Denmark, extended a grant to Covenant Centre for Development to implement the Better Cotton Initiative (BCI) standards in cotton cultivation in the

[57] A Public Limited company is a company registered under the Company's Act with a minimum of 7 shareholders and no maximum limit of shareholders. Shares in the company are easily transferable unlike a private sector company. The gatherers and anyone who invests in MSMSSK hold the share in this company.

region[58]. This program required the formulation of operating procedures for growing cotton responsibly guided by proper information dissemination and extension activities. This made it necessary for the formation of farmer groups for the dissemination of information, capacity building and operationalisation of a cotton procurement system. Once the initiative was implemented and the project completed, Aharam Producer Company adopted the initiative as its cotton division.

Covenant Centre for Development had good ties with the state and its various departments that use their services in agriculture-based capacity building in other regions of Tamil Nadu. Since the 1990s, the state has actively engaged the NGO for disseminating extension and training activities. In Madurai and the neighbouring districts[59], Covenant Centre for Development provided extension and agricultural support services to farmers on behalf of the government. This has legitimised the Covenant Centre for Development as a relevant government service provider and has also helped in acquiring international funding for its other activities. Therefore, the linkage the NGO had with the state was significant in establishing various collective initiatives and organisations. In this respect, Covenant Centre for Development has similarities with the case of Shri Kshethra Dharmasthala Rural Development Project discussed in the previous chapter.

5.3.2 Organisational feature

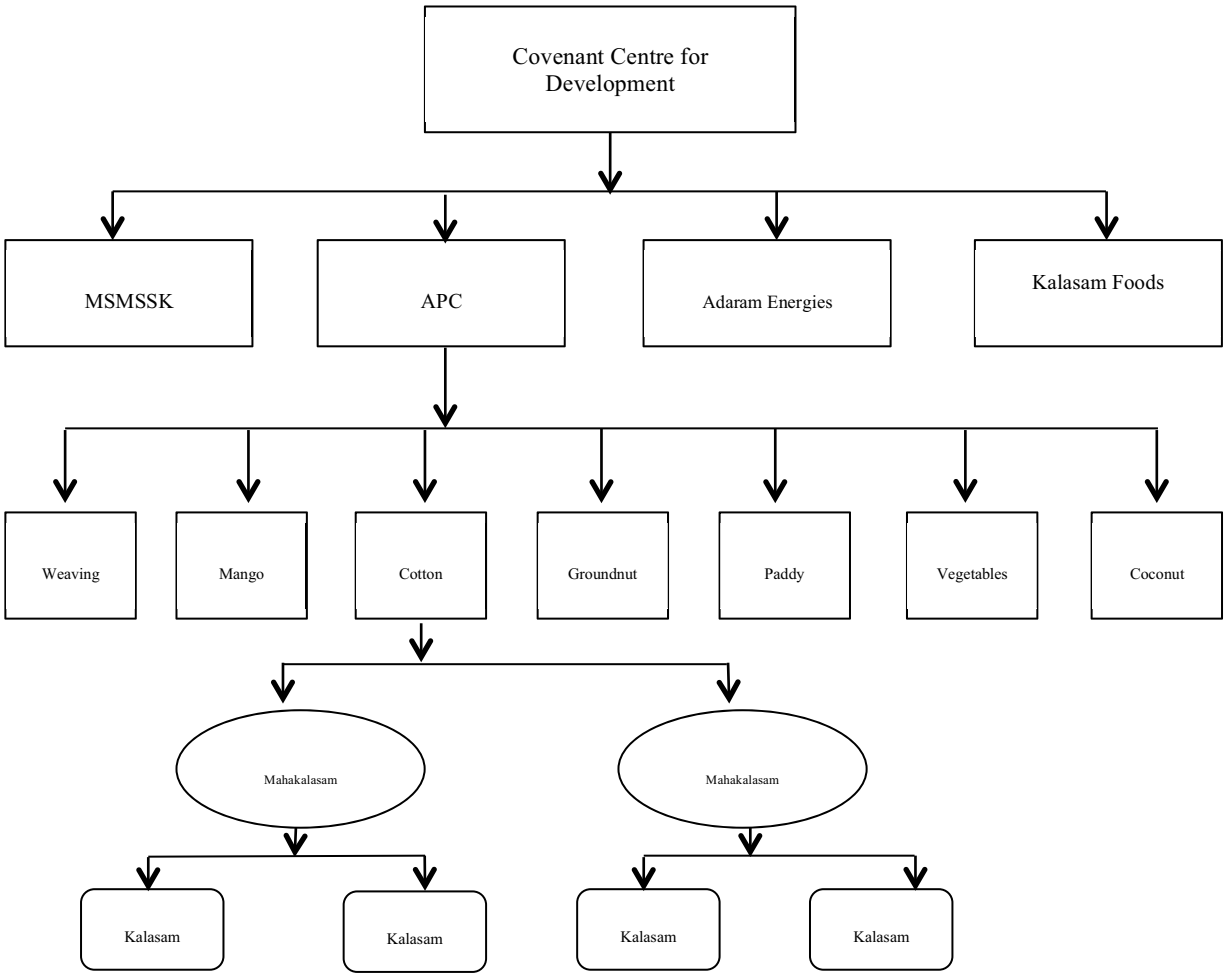
Aharam Producers Company (APC) had seven federations under it dealing with commodities such as cotton, mango, groundnuts, vegetables and coconut coir and a weaving and handloom division (Figure 5.1). The stakeholders of the producer company were the different federations and not individual primary producers. The federation represented groups of primary producers who elected bearers to represent them at the federation level. This made it top down and hierarchical organisation coordinated by the producer company. The federation comprised of savings group or *'kalasam'* with 12 to 18 members who jointly saved a fixed amount of money every week within the group. *Kalasam* is a sacred earthen saving-pot symbolic of the

[58] BCI is a standard of practices that aim to make cotton growing environmentally less harmful, improve livelihoods and bring about supply chain innovations. The fund provided by Bestseller foundation was 60 lakh rupees of which 15 lakhs was in the form of rolling fund by which cotton could be purchased from its member farmers.

[59]Covenant Centre for Development has been associated with a state-run programme called Mathi, under the Tamil Nadu Corporation for Development of Women. Recently, the International Federation for Agricultural Development (IFAD) entered into an understanding with Covenant Centre for Development to replicate its federation structures in the Mathim region in Nagapattanam.

Meenakshi temple of Madurai. This respected symbol was chosen to denote a sacred duty by members towards their groups. Different savings groups at the village level (or 2-3 villages) fell under a sub-federation called the *'mahakalasam'* (*maha* meaning greater).

Figure 5.1: Structure of the organisation



Regions where the groups were to be formed were first identified based on geographical considerations. Continuous settlement areas or a cluster of villages were identified and progressive farmers with larger resource endowments were educated about the potential benefits of organising and asked to support the initiative. Groups of 12-18 people were then formed, and members were trained in basic record keeping and informed about various functions and duties of groups and group members. Additionally, the previous savings group functions of SHGs were maintained. The

NGO therefore played a coordinating role connecting the initiative with the state and donor organisations in the past. It also played a role in enabling cooperation through the formation of groups and implementation of rational controls or rules and regulations. In this way it is similar to the credit providing producer organisations assessed in chapter four.

Members were sensitised about the aims and intentions of the group, rules and regulations were made clear and purposive measures such as group meetings and group information sharing were implemented which were the organisation's rational controls put into place to coordinate collective action. Covenant Centre for Development's previous experience in organising group initiatives was instrumental during the formation of the cotton division. Capacity-building initiatives were essential in educating members about the basic functions and activities of the groups. Federating groups into smaller sizes helped in the monitoring of groups, as well as building social capital by mandating regular group-based activities. Another aspect of the group was that there was leniency in the enforcement of rules. The common problems of non-conformity, according to officials, were due to poor awareness and issues in the groups. These include poor practices such as not conforming to organic farming protocol, not keeping proper records of farm activities, not attending meetings and spraying banned pesticides such as DDT (dichlorodiphenyltrichloroethane) on crops. Consequently, these people were identified, and the group's or federation representatives re-educated them on good practices. The flexibility of rules was allowed because non-conformity did not have severe repercussions on the other members of the group. For example, defaulting on payment in Joint Liability Groups affected all members of the groups, while non-conformity to (uncertified) organic protocol had little effect on other members of the group resulting in social dilemmas.

The main organisational features of Aharam Producer Company are with regard to its external support, previous organisational experience and group size. This initiative was coordinated by Covenant Centre for Development, an NGO working in the field of development for decades. This had helped form linkages with state as well as international donor agencies along with development-centred venture capital bodies to support various initiatives. Previous experience of coordinating group-based activities and livelihood activities greatly helped in the formation of groups. The

basic administrative units of Aharam Producer Company were the primary groups. These federated groups were larger than the other cases in this study with 12-18 members. Unlike credit providing organisations, the risks of social dilemmas such as defaulting was lower in Aharam Producer Company, and the relatively less importance placed on peer monitoring allowed for lenient rational controls and larger groups. Certification was done internally, and this informal system had no strict adherence contracts. In the absence of formal compliance procedures, the consequences of free riding were not high. This allowed for larger groups in Aharam Producer Company.

5.3.3 Social features

Social factors were given a lot of consideration when the groups were formed in order to reduce friction and foster group cohesiveness. Villages in this region were a confederation of smaller hamlets which were in close proximity to each other. These hamlets were often segregated on caste lines, or in some cases, based on *jatis* or sub-castes. Therefore, they were by default socially homogeneous. These preconditions determined and influenced the formation of groups in Aharam Producer Company. The main castes within the cotton growing villages were the *Marvars*, *Thevars*, *Gounders,* which were categorised as Other Backward Castes (OBCs) and Scheduled Castes (SCs). A majority of the respondents of the study were Thevars and Gounders, and in the villages visited, only one member belonged to the scheduled caste (Table 5.3)

Table 5.3: Caste composition of respondents in the study (n=22)

Caste	Number	Percentage
Thevar	13	59.09
Gounder	8	36.36
SC	1	4.55

Homogenous groups were formed based on family and clan structures and named after their clan's religious deity. Meetings for group activities were often carried out on the sacred ground of the temples to give the group and the initiative legitimacy. Villagers or different villages used these meeting points traditionally to solve their inter-communal and domestic disputes. Due to the strong caste identities in different villages there were no attempts to form mixed groups. In this way, pre-existing norms were considered in forming and managing the groups. While enabling the formation

of groups, the village level social dynamics also played a role in hindering group formation. In 2011, three groups were discontinued in the federation due to village-level disagreements. Pre-existing village level conflict was the reason for this. Often conflicts between hamlets were traditional[60] and this particular conflict reignited when the producer company formed groups in a hamlet that was not approved by another social group. This led to group slowly withdrawing from the activities before dropping out altogether.

Caste-based identities in the case of Aharam Producer Company formed the cognitive social capital in the group predisposing members to form homogeneous groups. At the same time, religion also played an important role in forming positive attitudes towards cooperation, contributing to the group's cognitive social capital. Geographical considerations, caste-based considerations and previous experience of organising helped the initiative use pre-existing norms, networks and trust in the formation of the group. This structural social capital facilitated the coordination of collective action in the region. These social controls supplemented the lenient rational controls to enable and maintain cooperation in the primary groups and in the Cotton initiative of the company.

This initiative has also been beneficial to women involved in agricultural production in the region. Due to better wages in the neighbouring state of Kerala and higher wages in the construction industry in larger towns, men often migrate out of the farms in search of work. Consequently, women have to take up the task of farming. Due to the presence of female-headed households, the company also formed women's only groups in villages. Rajamma, a respondent from a women's group in the Aharam Producer Company, states that the support and benefits from the federation made it easier for them to continue cultivation. The extension activities and inputs have helped them in production. The biggest support of the initiative, according to a women's group member surveyed in this study, was marketing support. Farm gate purchases reduced exposure to adverse market practices such as under grading, improper weighing and low pricing that women were frequently more vulnerable to.

[60] Interview with Kumresh

In sum, the main social feature governing the structure of this producer organisation was the rigid caste relations prevalent in the region. Caste identities formed the structural and cognitive social capital in the group. The various groups were socially homogeneous. The initiative also had women's groups that aimed at addressing gender-based disadvantages in production and marketing. Religion did play an important role in the organisation as religious symbols were used to identify groups and legitimise group based activities.

5.3.4 Economic Features

Growing of organic cotton had been the central aim of the cotton wing of the Aharam Producer Company. Although organic farming was formally introduced with the Better Cotton Initiative (BCI) standards, many growers in the region have been default organic growers even before the initiative started. A majority of farms in this region are rain-fed, and effective application of fertilizer cannot be done without timely rain or access to irrigation as the fertilizer would not dissolve into the soil. Therefore, farmers have been practicing basic organic farming methods with poor yields in the absence of good land management practices.

The collective goods made available through the producer company were information and extension services and marketing practice of procurement and value addition. The individual groups were used in the dissemination of information, and extension and training activities in organic cultivation. Information regarding timing of summer ploughing, seed treatment, manuring, manure preparation or good practices like proper picking and cleaning cotton was given to farmers. Experts from different organisations including universities and NGOs conducted extension education programmes to educate stakeholders in good production and post-harvest practices. Value addition was done through the spinning mill belonging to the cotton division. Raw cotton was procured from villages, ginned in local ginneries, spun and sold as yarn in the market. The company did not provide credit services to its farmer members due to the high risk of rain-fed agriculture. Approximately 60 per cent of the farmers surveyed had access to formal sources of credit from banks and 14 per cent of farmers in the survey admitted to being in debt bondage with local moneylenders. The activities of moneylenders in the region have reduced after the emergence of SHGs and financial inclusion initiatives in the past two decades. Local banks have been active in this region extending loans to farmers under the guarantee

of the SHGs. The role of Covenant Centre for Development has been instrumental in this development. However, 40 per cent of farmers surveyed in the study did not have access to institutional credit and had to use the services of moneylenders.

Under the initiative, cotton was procured from the famers through procurement centres set up in each village. The cotton is instantly weighed and payments were made promptly to farmers. As the produce was not 'certified' as organic there was no premium paid for the produce[61]. The procured cotton was spun into yarn before being sold in the market. The profits were then distributed to member farmers through the groups. However, the spinning unit owned by the federation was presently not running on capacity. Electricity shortages[62] and inadequate yields were reasons for this. The capacity of the spinning unit was 250 kilos a day and presently it is functioning at 110 kilos under its capacity. In order to increase capacity, there was also a need to expand the initiative to include more farmers. However, hindrance in sourcing of working capital has limited this endeavour.

The changes this initiative had brought about were through linkages that enabled the provision of information and extension services and better marketing practices in the downstream markets. The changes collective action had brought were better practices at the farm level helping to reduce the cost of production, reduce marketing costs and value added benefits at the market level. According to internal studies conducted by Covenant Centre for Development, the groups on an average had been able to bring about a 10 per cent increase in price[63]. This, according to some farmers and the federation coordinator, was a result of better quality seeds and farm management practices that reduced wastage of resources. At the market level, unfair marketing practices had been noted to bring down income by 30-40 per cent in crops like cotton, especially when grades were not determined at the markets. The common problems were improper weighing, and underpricing of cotton. A purchaser within the federation narrated the following incident:

[61] Organic certification was not considered by the organization because Aharam procured the cotton for value addition. It was reasoned that certification required higher monitoring and implementation costs. The market for which the cotton was produced for did not require organic certification.
[62] There were 12 hour power cuts in the state and in early 2012 the mill had been able to process only 70-90 tonnes. With no power shortages it can process close to 200 kilos a day.
[63] Interview Tachinamurthy

> …I was in the field during buying time, we had packed, loaded the raw cotton to the ginning factory… one old lady came in for the selling of cotton and (s)he brought 14 Kgs of cotton…this is a very small quantity, and the price was some 26 or 28 rupees, while the market rate was 24 something, but we gave a fixed (price of rupees) 26. When we did her weighment, she saw that (it was) 14 kilos…she left because she was not satisfied. But she soon returned saying that the village local dealer weighed it and said there was only 11 kilos…. through improper weighment, a trader can cheat a farmer by almost 40 per cent of his yield according to the total volume.

Through village level procurement systems, transaction costs of transportation, lower price realisation due to poor bargaining power and the inability to find reliable buyers were mitigated. Additionally, the value addition component helped farmers realise a higher price for their produce compared to selling raw cotton in the market.

5.3.5 Resource allocation and incentive alignment in the group

All members in the producer company were small and marginal farmers with an average landholding of 3.65 acres (1.4 hectares) (table 5.5).Therefore, they had homogeneous resource endowment in terms of ownership of land. However, with regard to access to irrigation, table 5.4 shows that out of the 22 respondents surveyed in the study, 36 per cent of them had access to irrigation. In agriculture, especially in semi-arid conditions, access to irrigation is crucial and yields are drastically influenced by water stress. Table 5.5 shows that average yield per acre were sometimes four times higher in some households than others. Additionally, access to irrigation also determined the kind of crops that were grown by farmers. Almost all members of the groups grew cotton because of the support given by the federation and also due to its drought resistant quality. Horticulture crops, paddy, onions and chilli were also grown by farmers who had access to irrigation. Therefore, the resource heterogeneity of members and their farming practices in the group was high determined by their access to irrigation and the type of crops they grew.

Table 5.4: Irrigation sources for farmers (n=22)

Source	Number of respondents	Percentage
Well	7	31.82
Bore wells	1	4.55
Rain fed	12	63.64

Table 5.5: Size of landholdings in the Group (n=22)

	Max	Min	Difference	Average	Median	Std. Dev
Size of Landholdings	6.00	0.75	5.25	3.65	4.00	1.39
Fertilizers and pesticides (Expenditure in Rupees)	425	0	485.71	144.67	117.50	488.23
Yield per acre Cotton (Quintals)	5	1.2	3.80	2.02	1.50	1.30

Similar to other initiatives, the goods made available to the group were non-rivalrous and non-excludable within the group, and therefore, no member was excluded from benefiting from the goods once they were made available. However, members had varied utility to the goods and services provided by the initiative, and households with access to irrigation had more surplus and therefore higher surpluses from the initiative. In terms of incentive structures, members had solidarity incentives as well as material incentives to participate in collective action. Homogeneous caste and exclusion of other castes brought with it caste-based solidarity from pre-existing norms and networks. The presence of women's group was also a solidary incentive for female-headed households to participate in collective action. The material incentives to cooperate were high for both irrigated farming households and non-irrigated farming households. The main reasons for adopting organic farming have been to reduce the cost of production and manage resources better under non-irrigated conditions. Organic farming often utilized biofertilizers and pesticides that were often made from resources available at the farm level, and this has helped reduce the cost of production. Organic farming was also knowledge and management intensive as most fertilisers and pesticides needed to be prepared at the farm level, and integrated pest management and nutrition management procedures needed to be followed. This form of intensive management followed in organic farming also helped crops handle water stress better[64] .

[64] Interview Tachinamurthy

For irrigated farming households, the main changes brought about by the company were from marketing of produce and value addition incentives. Small farmers and women were especially vulnerable when undertaking marketing activities. Direct procurement from farms by the federation has helped reduce losses resulting from poor marketing practices of intermediaries by over 20 per cent according to officials at the federation. Interviews with famers also revealed that there has been a substantial reduction in marketing costs. This is a result of reduced transportation costs (4-5 trips to the market every harvest for different picks). Standard grade-based price reduced moral hazard problems through proper weighing, assured sales and immediate payment (Table 5.7). However, hindrances in production resulting from electricity shortages, the company has not been able to purchase all the produce from its members[65]. Although cotton was purchased by the company from 77 per cent of the respondents, 23 per cent of its members had to sell their produce in the open market and could not avail the benefits of marketing (Table 5.8). Therefore, some members were de facto exculded from accessing a good that was stated to be non-excludable.

Table 5.7: Benefits of collective action

Particulars	Perceived Percentage change
Cost of production	-10%
Marketing cost	-20%

Table 5.8: Methods of sale by member (n=22)

Marketing	Number of respondents	Percentage
Federation	17	77
Traders, APMC	5	23

Table 5.9 depicts the average and median net profit, the changes in profit resulting from collective action calculated from 22 respondents surveyed for this case study. The highest (max) and the lowest level of benefit (min) individuals attained are also presented along with the average and median returns in different landholdings sizes. This is to determine the extent to which changes have occurred in each of the land holding categories. The results show that marginal farmers gained most on an

[65] As mentioned in footnote 62, powercuts lasting 12 hours a day in 2012 led to the spinning mill running under its capacity by 60 per cent. Due to this the company could not procure all of its members cotton.

average, as many of them who were making losses began making a slight profit. The high variation between the maximum and minimum was due to the farmers' access to irrigation. As the region is semi-arid with poor access to irrigation, the levels of yield were not as high as other cases such as Savayava Krushikara Sangha which will be discussed in the next section. Larger landholding sizes did not mean better yields as output in rain-fed agriculture was low compared to irrigated lands due to water stress. The average net profit of producers was not high enough to sustain a livelihood only through farming, and additional incomes had to be gained from remittances from members working in various towns and manual labour.

Table 5.9 Changes from collective action in Aharam Producer Company*

		Max	Min	Average	Median
1-3 acres	Net Profit (π)	17,250.00	-310.00	4,989.29	2,690.00
	Change in Profit ($\delta\pi$)	10,912.50	2,737.20	4,435.61	4,365.00
	Change in net profit (%)			17.75	162.27
3-5 acres	Net Profit	136,750	6,700	40,027.14	2,6405
	Change in Profit	13,785.33	1,586.25	7,103.8	7,764.2
	Change in net profit (%)			17.75	29.40
> 5 acres	Net Profit	16,000			
	Change in Profit	7,200			
	Change in net profit (%)	45			

* The profit function used to compute this is given in appendix VI

A majority of the respondents stated that the general economic benefits or material incentives for joining the Aharam Producer Company were the reasons why they stayed in the company (86 per cent), while 18 per cent suggested that solidarity to their neighbours and friends was also a reason to remain in the group (Table 5.10). Women members stated that the support of the federation has made production and marketing easier for them. This shows that economic necessity also played an important role in predisposing individuals to act collectively.

Table 5.10: Reasons for staying in the group (n=22)

	Number of respondents	Percentage
General economic benefits	19	86
Marketing	8	36
Women's Group	4	18
Price realisation	3	14
Solidarity	4	18

In the Aharam Producer Company, the main organisational features were external support, group size and previous experience. Support from Covenant Centre for Development and the linkages it had with international donor agencies and other international bodies has helped in the coordination of the initiative. The implementation of Better Cotton Initiative (BCI) protocol and the experiences of coordinating it were important for the formation of the producer company. The group size in the initiative was larger than other cases as the need for peer monitoring and sanctions was lower. However, the initiative still used federated groups of 18-20 individuals. In terms of its social features, Aharam Producer Company was an exclusive group comprised of Other Backward Caste (OBC) producers. The pre-existing rigid caste dynamic in the region hindered the formation of inclusive groups. Religious symbolism and caste identities provided the structural and cognitive social capital for the coordination of collective action, and the distinctive economic feature of the group was the absence of credit as a collective good. This was largely due to the higher risks associated with rain fed agriculture, which a majority of the members of Aharam Producer Company practiced. Other collective goods acquired were research and extension services (public goods), marketing services, and value addition (private goods). Nevertheless, the returns from farming in this initiative were the lowest among the four cases largely due to the drought prone nature of the location. The average net profit on marginal farms in Shri Kshethra Dharmastala Rural Development and Savayava Krushikara Sangha were 39,905 and 23,437 rupees respectively.

5.4 Case II: Savayava Krushikara Sangha Farmers' Federation

The *Savayava Krushikara Sangha* (SKS) is a farmers' federation located in HD Kote *taluk* of Mysore district in the state of Karnataka. Although this region has rich biodiversity and natural resources, it is among the most underdeveloped *taluks* in the state. Savayava Krushikara Sangha was formed in February 2006, and as of 2012 it had 244 members in 11 villages cultivating 318 hectares of land (785 acres). A majority of its members were small and marginal farmers, with an average landholding size of 3.2 acres per member. Certified organic cotton was the main crop grown by farmers in the federation and the collective goods that the group accessed for its members were inputs, information, specific growing technologies, extension services, marketing benefits and group organic certification. This has helped to reduce the cost of production and attain higher price margins in the market, while reducing environmental externalities resulting from declining soil fertility.

This case is an example of how marketing contracts through corporate support were enabled through collective initiatives. As there were no premiums for organic cotton in agricultural markets in India, the federation formed forward linkages with a textile manufacturer, Appachi Cotton Company[66] that extended support to certify organic produce and procures cotton at an organic premium, higher than the market price. Forty-four primary producers were surveyed for the study, which helped acquire information regarding the organisational, social and economic features of the initiative. Unlike other producer organisations of this study, Savayava Krushikara Sangha kept production cost records of its members, which was used to analyse changes in production costs and marketing costs brought about through collective action. The sample size of the production data used in this analysis was 59 farmer households and data was acquired for the fourty four pimary producers surveyed in the study in addition to 15 household not surveyed for their organisational, social and economic features.

[66] Appachi Cotton Company is an establishment involved in Corporate Social Responsibility initiatives like promoting Organic Farming and responsible farm management since the early 2000s. It has established a Non-Governmental Organization called CARE, which works with small and marginal cotton growing farmers in the states of Karnataka, Tamil Nadu, Orissa and Madhya Pradesh. Appachi Cotton exited the program in 2011.

Table 5.11: Features of the organisation

Strength of the initiative	244 members, 318 hectares (785 acres)
Group structure	Federated groups of 7-10 members
Collective goods obtained	Seeds, growing technology, extension services, organic certification, extension, joint marketing

5.4.1 History and context of the group

HD Kote is located in the catchment area of the Kabini reservoir in Mysore district. It is a bio- sensitive region where the major crops grown were cotton, tobacco, finger millet, maize, oilseeds, and pulses under rain-fed conditions and paddy, sugarcane, vegetables and flowers under irrigated conditions. Over the years, agricultural distress resulting from drought conditions and depleting ground water levels due to changing cropping patterns has led to productive family labour migration to adjoining districts and cities in search of employment. State intervention and support through 'Myrada' (or MYKAPS as it was later called), an NGO, introduced development activities such as hybrid cotton cultivation, watershed management programs and land development to mitigate these risks and prevent seasonal migration of family labour from farms.

In order to deepen the impact of these interventions and address more specific problems in agricultural production, including access to inputs, information and extension activities, a group of large landowning, environmentally conscious farmers or 'lead farmers' formed an organic farming association to replicate the results that they observed on their farms through better land management practices. This resulted in the formation of the Kakana Kote Savayava Kutumba Sangha (the Kakana Kote Organic Farming Families' Association). This association soon disbanded due to organisational and management difficulties. The group was formed under the guidelines of the Organic Farmers Association of India (OAFI), a pan-India organisation of farmers that promoted and certified organic farming. All members of the association were required to strictly adhere to its standardised growing protocol. However, variations in ecology, resource endowment of farmers and levels of awareness among farmers made it difficult for the group to conform to many of its

requirements. Having mobilized people and resources to start a group, members decided to leave OAFI and form an independent organic famers association under the name Savayava Krishikara Sangha in 2006. The group was formally registered under the Societies Act that same year.

The federation began under the patronage of the MYKAPS, who provided it with office space and personnel with developmental experience to launch the initiative. The federation initially used the reputation of the NGO and its traditional goodwill to establish itself in the community. The NGO was also instrumental in liaising with the government, agricultural universities and other centres of research to form linkages for information and extension activities to be made available.

5.4.2 Organisational features

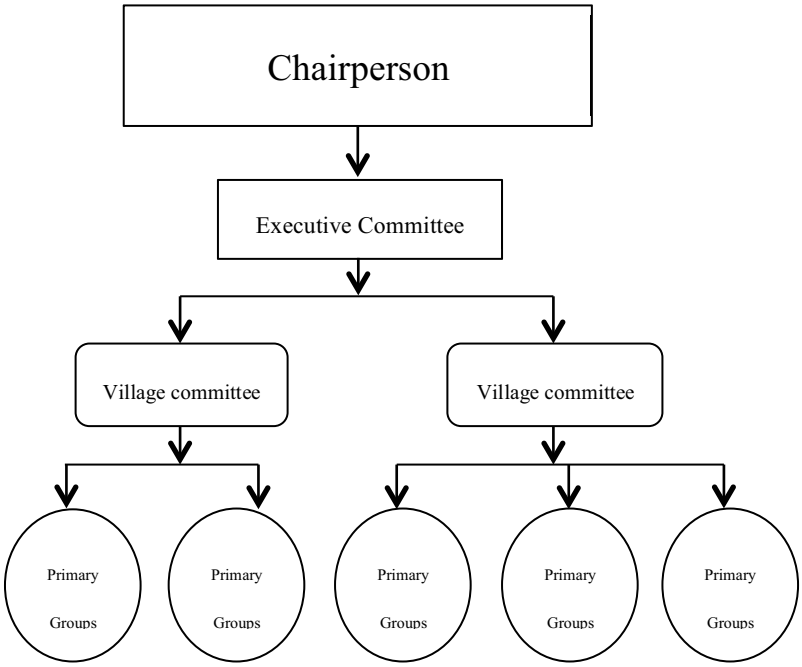
The governance structure of Savayava Krushikara Sangha was hierarchical and individual groups of 7 to 10 members[67] formed the basic unit of the group. Again, as in the case of Shri Kshethra Dharmasthala Rural Development Project and Aharam Producer Company, the members' geographical proximity was a major criterion in the formation of the group. One member from each group is represented in the village committees and different villages' elected one member from the village level committee to the executive committee at the federation level, which in turn elected a chairperson (figure 5.2). One representative from Appachi Cotton and one from MYKAPS, the supporting NGO, were also present in the executive committee. All members of the committee were participating members of the group. The chairperson and the executive committee were responsible for all decisions made in the federation concerning collective goods and benefits supplied to individual groups through the village committee. This formed a bottom-up form of organising as cooperation rather coordination.

The federation had a strict internal control system which set the norms of membership along with procedures for sanctions of violations. Among the strict norms was the banning of genetically modified seeds, chemical fertilizers and cultivation of tobacco. The farmers were mandated to attend meetings and training sessions regularly and to keep records of their expenditures and farm level activities.

[67] In order for a group to form, there were to be at least five interested farmers in the village. If there was a village level committee in that village, it would assess the group and determine whether there was enough motivation within the group to join the federation.

Failure to comply with these requirements in cases of serious offences (like the use of GMOs, or chemicals) could lead to expulsion from the groups, or suspension or review for less serious offences. Although the organic protocols were strictly followed, the farmers often defaulted on regularity of bookkeeping[68] and attendance of meetings.

Figure 5.2: Structure of Savayava Krushikara Sangha federation



Internal audits were conducted twice a year along with one external audit by the Institute of Marketecology (IMO), the Swiss based certifying body. For a farmer to become a member of a federation, his village had to have a minimum of five interested farmers who were willing to become organic farmers, adhere to the internal control system and follow organic protocol for three years, after which they became certified organic growers. Failure to comply with the requirements potentially demoted the farmer along with his group from their 'certification' status that could lower the final price of their produce[69]. Therefore, in Savayava Krushikara Sangha, there was a high level of monitoring required within the groups to prevent social dilemmas, such as moral hazard problems, that may have emerged due to non-

[68] 20 members in the survey of 44 member farmers said they were illiterate. Although this was a challenge, defaulting on regular bookkeeping was more widespread.
[69] Full organic certification requires 3 years to attain. Serious cases of non-compliance would lead to revoking of organic status of the farmer.

compliance to certification requirements. As a result, strict rules and sanctions along with the peer monitoring was important in the groups. Small federated groups were crucial in enabling peer monitoring by members of the groups. Rules and regulations or rational controls in the group were very strong compared to the Aharam Producer Company due to the organic certification that was undertaken by the initiative.

Many farmer members of Savayava Krushikara Sangha had prior experience of being involved in collective activities under various watershed management programs run by Myrada in this region. The watershed program was a government program aimed at collectively managing common pool resource through watershed development associations, watershed committees, and Community Managed Resource Centres (CMRCs) in order to increase availability of water for agriculture. The activities of the user groups were supplemented with the formation of savings groups through Self-Help Groups. The formation of new groups in Savayava Krushikara Sangha benefited from the existing organisational experience participants had gained from these programs. The other purposive measures to increase group based activities were regular meetings to plan activities of the groups at the village and federation levels. Weekly meetings were especially frequent during the sowing and the harvest seasons where information dissemination activities were most needed. Monthly income and expenditure patterns of the federation were also shared in the meetings to create financial transparency.

The main organisational features of Savayava Krushikara Sangha were its external support by privileged group and the NGO, previous experience of members, and the size of the primary groups. External support for the formation of the groups came from a privileged group of 'lead farmers' and the NGO. The formation of groups and the initial coordination of groups were made possible by NGO support provided by MYKAPS. The lead farmers and the NGO were also responsible for enabling the formation of linkages to Appachi Cotton Company. Therefore, the lead farmers and the NGO played an important coordinating role in enabling cooperation. Members of the groups had previous experience of participating in group-based watershed management activities and the NGO had experience coordinating such group activities and this complemented the new initiatives. The size of the groups in the initiative was between 7-10 members. As Savayava Krushikara Sangha undertook certified organic cotton cultivation, adherence to organic protocol was crucial. Strict

rational controls and the small size of the groups enabled peer monitoring which were crucial to prevent social dilemmas arising from non-compliance of protocol.

5.4.3 Social features

Organic farming is knowledge and management intensive and organic certification has high non-compliance consequences. Certified organic cotton production required the formation of internal control systems to manage inclusion and exclusion, violations and sanction, extension services, training, and reporting. Networks, norms and trust played a vital role in the organisation and management of collective action. The groups' involvement in collective watershed management activities had given most of the members' previous experience in collective action. When the new initiative to grow organic cotton was introduced, the older groups were maintained and new groups were formed only in areas where watershed management groups did not exist. This enabled the use of existing networks and norms to promote and coordinate group-based activities. This helped to increase cohesion and reduce social dilemmas within the newly formed groups. Furthermore, the entry qualifications to the federation were strict and not determined by resource conditions alone, but rather on the levels of interest to adopt organic farming. The applicant had to be approved by the group and the village committee before they could join the initiative.

A survey of 44 farmers in the federation revealed that 80 percent of them belonged to the Other Backward Castes category (*Gowda*, *Naika* and *Lingayat*), 16 per cent were scheduled castes (Scheduled Caste) and four per cent to the upper castes (*Brahmin* and *Shetty*) (Table 5.12). A majority of members in the federation belonged to the upper or middle castes as these groups traditionally owned land, and, unlike Aharam Producer Company, there was no evidence of overt caste-based discrimination in group formations. A criterion for membership in the federation was that members should own the land they cultivate, and, therefore, only a few individuals belonging to scheduled castes were present in the group. This may have been due to the lower number of scheduled castes owning land in this region.

Table 5.12: Caste composition of respondents of the case study (n=44)

Caste	Number of Respondents	Percentage
SC	7	16
Gowda	17	39
Naika	16	36
Lingayat	2	5
Brahmin	1	2
Shetty	1	2

Groups at the village levels were formed by involving influential 'elders' of the village. This was an important step as existing institutions of interaction at the village level were woven into its social fabric. For example, the traditional method of selling cotton involved traders coming to particular villages, taking into confidence an influential person of the village (often incentivised by monetary gifts or bribes[70]), who in turn gave his support allowing the trader to influence transactions, often on adverse terms. The groups, therefore, further required the support of the local elite as a means of negating the influence of these traditional practices.

Purposive measures to build and maintain social capital mandated regular group meetings and the distribution of inputs and marketing through groups. This helped build structural social capital within the groups. Extension activities related to better growing practices and technology adoption were often given at the village level and this required an increased interaction and cooperation among members. In federated groups, peer monitoring was used to check social dilemmas relating to non-compliance. However, there were still tendencies for a group or groups in a particular village to jointly default. The village level social elites often determined the propensity of local groups in a region to default or adhere. If lead farmers or dominant farmers in villages were highly motivated, others in the group or village remain motivated[71]. If the dominant farmers wilfully defaulted, there were instances where the group or the entire village followed.

[70]The bribe according to one respondent was close to 10,000 rupees to the village partner for nothing more than support and space to conduct transactions in the village. The local partner ensured that there would be no opposition to the traders pricing.
[71]Interview with L N Rama Rao, a farmer in the group.

Social capital in the form of solidarity and loyalty to the group prevented free riding, while at the same time increased the possibility of joint defaulting. The level of attrition in groups was low as there were tangible benefits in the form of inputs, reduced cost of production (through better access to quality seeds, technology, and information) and low marketing costs. The average time members spent in the group was four and a half years (Table 5.13). The benefits of collective action and previous experience of organising that contributed to the shared values and attitudes in the groups contributed to its cognitive social capital predisposing individuals to cooperate. Therefore, the role of social capital as a social control, similar to other groups explored in this thesis, played an important role in preventing the emergence of social dilemmas. Therefore, social controls along with rational controls helped in the enforcement of organic protocol and procedures required by the certifying organisation.

Table 5.13: Number of year's spent in groups by members

	Maximum	Minimum	Average	Median	Std.Dev
Time in Group	6	0,8	4,40	5,00	1,86

There were women members in different groups of the initiative although they were not active participants in group-based activities such as extension services and marketing. The reason they were registered in groups was because property rights were in their name and the federation mandates the registration of individuals possessing title deeds to the land. Group-based activities and marketing were attended by male members of the family (sons or sons-in-law). The federation did not take up any gender sensitive or gender focused activities to aid or support women-led households in the initiative.

Members of Savayava Krushikara Sangha primary groups belonged to different social groups as caste-based identities were not as rigid as in the regions where Aharam Producer Company operated. Formation of groups based on geographical proximity of households helped mobilise existing social capital in the form of social networks. The initiative also mandated that members participate in group-based activities such as group meetings and group information dissemination activities. These purposive measures helped build structural social capital within the groups. Social capital in groups was crucial to ensure adherence to organic protocol and

prevent non-conformity that affected all members of the group. However, in some cases social capital also led to group defaults and joint non-compliance.

5.4.4 Economic features

Cotton was the major crop that was grown by the members of the federation. Crops like finger millets and pulses were often grown as intercrops along with cotton. The collective goods made available to members of the group were seeds, information, extension services and marketing, and these were largely focused on cotton and cotton growing. Similar to other groups in this study, the collective goods were non-rivalrous and non-excludable to members within the group. This enabled a reduction in the cost of production and price realisation through improved market practices and improved soil health on farms. Supply of organic cottonseeds was essential for certified organic production as per the IMO standards. The federation provided its members with certified organic seeds each season. The certified quality of the seeds assured a higher germination rate than conventional seeds purchased from the 'black' market or ginners[72]. According to Mani Chinnaswamy, Managing Partner and Proprietor, Appachi Cotton, the procuring partner of Savayava Krushikara Sangha:

> The base input is the right seed, because half the problem is solved when they sow the right quality seed… right quality of seed… even if it gives one quintal extra yield… one quintal is like 4000 rupees, is almost 50% of his cultivation cost.

At the marketing level, organic premiums were given to the certified produce (10 per cent above market price). Since there is no established organic premium in the markets, prices were determined by the legitimacy of organic certification. Often textile companies such as Appachi Cotton Company adhered to international textile standards needed certified organic cotton that could not be sourced from the open market. The Appachi Cotton-SKS agreement was a legal yet non-binding contract, which meant that there were no judicial implications for not adhering to the contract. The federation had a price-fixing committee consisting of five members: two federation members, 2 people from Appachi Cotton and a local farmer with cotton selling experience. They fixed the procurement price of cotton annually, and this became the procurement price. Farm gate purchase and the use of electronic

[72] Traditionally seeds for the sowing season are purchased from the local ginner, who sells it as a by-product of his activity. Here the seeds are not sorted or certified and could contain different varieties of seed cotton with differing quality.

weighing during procurement has helped reduce transaction and transportation costs resulting from poor buying ans selling practices in the market[73]. Informants for this study revealed that there has been a 15 per cent increase in profits as a result of better marketing practices and price realisation.

Although Appachi Cotton purchases cotton only from the farmers, all produce grown on the farm was organically certified. Intercropping was an essential part of Integrated Pest Management practices, and often pulses and vegetables were used for this. The other farm organic products were sold to niche buyers in the neighbouring cities of Calicut and in Bangalore. Although they do not fetch premiums as high as cotton, there was a 2 - 4 per cent premium depending on the produce and the demand in the market. Savayava Krushikara Sangha did not provide credit to its farmers, and Table 5.14 shows the different sources of credit for farmers in the federation. Thirty eight per cent of the respondents in the study stated that they still used the service of moneylenders.

Table 5.14: Nature of credit to members of the federation (n=44)

Nature of Credit	Number of respondents	Percentage
Formal	13	29.55
Informal	17	38.64
No Credit/non response	14	31.82

Cotton was the major crop grown by the members of Savayava Krushikara Sangha and many of the collective goods made available to members such as seeds, extension services, information and organic premium price were targeted toward cotton growers. Therefore, in effect, this encouraged most members of the initiative to grow cotton. The other major collective good of the initiative was organic certification. Similar to Aharam Producer Company, credit was not made available to members as the organisation did not have linkages with NABARD or corpus funds from which it could lend to its members. It was unlikely they would have initiated such an initiative as the risk of crop failure was high in this drought prone area.

[73] Interviews with traders revealed that their methods of pricing and procurement were to counter the poor practices taken up by the farmers. Farmers in order increase weight of cotton added stones in their sacks and drenched portions of the cotton etc. The trader in order to account for these practices, delibrately lowered procurment prices. Poor prices according to them were a result of years of poor practice and mistrust from both sides.

5.4.5 Resource allocation and incentive alignment

The average landholding size among in the group (from a sample size of 59) was 3.2 acres (1.2 hectares) and therefore could be considered an initiative of small and marginal farmers. However, there were also some large and middle farmers in the group, and the largest land holding size was 25 acres. Similar to Aharam Producer Company, access to irrigation determined the economic advantage rather than size of landholding. Forty-one per cent of farmers in the survey had access to bore wells, which gave them an advantage for diversification of crops like paddy, ginger, turmeric, sugarcane and horticultural crops (Table 5.15). There the resource structure in the groups was heterogeneous.

Table 5.15: Source of irrigation for respondents (n=44)

Irrigation source	Number of Respondents	Percentage
Rainfed	27	61.36
Bore well/well	17	40.91

The goods that were made available were non-rivalrous and non-excludable within the group, and therefore all members were able to access and use the collective goods. The utility of the collective goods access varied as households with access to more land and access to irrigation could gain more from the marketing services provided by the initiative. Members with more utility were also the privileged group of the initiative. The solidary incentive to participate in collective action came through pre-existing networks and norms created from previous experiences of jointly participating in watershed management programs. Also, as members were friends and neighbours, the initiative used already existing social capital to coordinate the collective action.

The material incentives of the initiative were high as marketing services and premium prices helped reduce costs and increase farm surpluses. According to an internal Farmers Field School study conducted in 2008, cost of cultivation compared to cultivating Bt cotton[74] in the initiative was grossly less (table 5.16). Organic

[74] *Bacillus thuringiensis* or Bt is a bacterium commonly found in the soil. Bt has natural insecticidal qualities and isa major component in insecticides. In genetically modified crops (GMO) such as Bt cotton, corn, soya, potato,bringal, the bt gene is inserted into the seeds, making them naturally resistant to certain types of pests. 93% of the cottonseeds sown in India have Bt technology. In 2011-12, according to the Ministry of Textiles, Government of India, 12.18 million hectares in India was under cotton cultivation and according to the Ministry of Agriculture, 11.3 million hectares was under Bt Cotton cultivation.

cultivation, the study stated, reduced the cost of cultivation by 59 per cent and increase profit by 68 per cent at a cost benefit ratio of 1:3. The major reduction in cost of cultivation was due to the use of organic fertilizers and pesticides which are often prepared on the farm using local materials. Information and effective farm management practices through extension services were critical inputs that enabled better production. Farmers Field School[75] and Integrated Pest Management (IPM)[76] training were periodically carried out with the support from the state agriculture department. Informants for this study also revealed that there has been a 15 per cent decrease in costs as a result of better marketing practices and price realisation.

Table 5.16: Comparison of production cost changes through collective action (in rupees)

Particulars	Conventional (Bt Cotton)	Collective action	Percentage Difference
Seed	1900	1140	40
Cost of Cultivation	7450	3070	58.79
Earnings	14500	15950	10
Profit	6960	11740	68.67

Using the production data maintained by Savayava Krushikara Sangha, the profit made by different farmer households was calculated, and the changes in profit resulting from collective action were assessed for different groups based on landholding size (< 1 acre, 1-3 acres and >3 acres). Table 5.18 reports the highest (Max) and the lowest (Min) along with the average and then median level of profits for three different landholding size categories. Reduction in production cost, increased market price realisation and reduction in marketing costs were seen as major reasons for changes in profits. The percentage change in profits resulting from collective action interventions were higher with lower land sizes as smaller farmers were most affected by poor input and information access, lower price realisation due to poor bargaining power and higher marketing costs resulting from poor marketing

[75] Farmer Field Schools are a community-based, practically oriented, season long field study program involving farmers facilitated by extension staff or other farmers to educate them on effective, progressive and sustainable farm practices.
[76] Integrated Pest Management: (IPM) is a pest control strategy using a combination of complementary methods like mechanical and physical devices along with genetic, biological and chemical management.

practices such as improper weighing and under-pricing. As collective action addresses some of these issues that may not concern larger farmers (due to better bargaining power and access to inputs), the percentage change in profits were higher in smaller farms. Similar to the other initiatives, marginal farms and some small farms still did not generate enough surplus and agricultural income for households to depend solely on agriculture despite the changes brought about through collective action (Table 5.17). This agricultural income had to be supported by additional income through manual labour.

Table 5.17: Changes from collective action in Savayava Krushikara Sangha* (n=59)

		Max	Min	Average	Median
<1 acre	Net Profit	27,601.46	12,127.29	23,437.28	26,154.58
	Change in Profit	13,304.8	6,228.096	11,697.22	12,964.08
	Change in net profit (%)			49.91	49.57
1-3 acres	Net Profit	67,320.64	29,980.85	48,234.33	53,856.51
	Change in Profit	31,140.48	13,868.23	22,390.32	24,912.38
	Change in net profit (%)			46.42	46.26
> 3 acres	Net Profit	213,181	79,942.87	111,027.6	106,590.5
	Change in Profit	76,197.49	28,574.06	39,684.69	38,098.74
	Change in net profit (%)			35.74	35.74

* The profit function used to compute this is given in appendix VI

In Savayava Krushikara Sangha the main organisational features that enabled collective action were external support, previous experience and small group size. External support from MYKAPS and the privileged group helped in the formation and coordination of the initiative. Previous experience of participating in group-based activities by members and experience of coordinating group-based activities by the NGO were crucial to the group. The small federated group also helped in peer monitoring and identifying non-compliance. The main social feature of the initiative was how it mobilised existing social capital in coordinating group activities. Formation of groups based on geographical proximity helped the use of existing networks. As caste dynamics were not very strong, mixed groups could be formed.

However, gender-based initiatives within the organisation were missing. The main economic feature of the group was that the groups produced certified organic cotton, which was sold at a premium price. Savayava Krushikara Sangha is an example of how the nature of collective goods made available can determine how the initiative is organised. Adherence to organic protocol and the consequence of non-conformity determines the strictness of rules and regulations and systems of sanctions. This in turn determined the main organisational features of group size in the initiative. The other collective goods that were made available to producers were organic cotton seeds, information and extension services and marketing services where cotton was purchased at the farm gate. These collective goods helped increase profit among members, although similar to other initiatives, marginal farms could not produce sufficient surplus.

5.5 Discussion

The cases of Aharam Producer Company and Savayava Krushikara Sangha can be seen as examples of how initiatives promoting collective actions can increase access to inputs, information and extension services, enable farm gate purchases, increase price realisation, and in the case of Aharam Producer Company enable integration of the value chain. One key difference between these cases and the cases assessed in the previous chapter is that Aharam Producer Company and Savayava Krushikara Sangha were non-credit providing organisations. However, unlike the earlier cases there were interventions in the downstream markets such as farm gate purchases, marketing interventions (organic premium) and value addition. A key similarity between the two sets of cases were that the role of NGOs and privileged groups (in the case of Savayava Krushikara Sangha) was crucial in the formation of the groups and in enabling linkages with the state to provide collective goods such as extension services. In this section, the similarities and differences of the two initiatives discussed in this chapter are compared to highlight the factors that influence the structure of these initiatives coordinating collective actions. Table 5.18 highlights the similarities and differences from the two cases.

Table 5.18: Similarities and differences of Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society

Features	Similarity	Differences
Organisational	- Hierarchically organised - Cooperation and coordination - Federated groups - Centralised decision making - Larger primary group size than JLGs - Prior experience in collective action - NGO support in group formation and functioning - Small initiatives	- APC was a Producer Company while SKS was a Farmers Federation - APC was governed by an NGO support while SKS had representational governance - APC had lenient rules and regulations while SKS had strict rules and regulations in line with organic protocols - SKS had a high entry cost which required adherence to organic protocols
Social	- Geographical considerations in group formation - Social capital from previous organisational experience - Social controls - Sensitization of rural elites - Purposive measures to maintain social capital	- APC had homogeneous caste groups, while SKS had mixed caste groups - Religious symbolism was used to maintain social capital in APC - APC had women-specific groups to tackle gender-based disadvantages in farming - High levels of peer monitoring was required in SKS
Economic	- Majority small and marginal landholders - Non-credit groups - Organic cotton growing - Emphasis on extension services	- APC had an integrated supply chain, while SKS had established market contracts - SKS had organic certification, while APC produced uncertified organic cotton

	- Farm gate procurement	- SKS acquired a premium price for organic cotton - APC increased returns to farmers through value addition
Resource allocation	- Heterogeneous resource endowment - Non-rivalrous and non-excludable collective goods within the group. - Variable utility	
Incentive alignment	- High material incentives - High solidarity incentives - Variable utility providing privileged group incentives	

5.5.1 Organisational similarities and difference

Aharam Producer Company and Savayava Krushikara Sangha are hierarchically organised hybrid institutional arrangements. The decision-making structures in these organisations were highly centralised. With regard to these features, they are similar to Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society. The size of the groups was small in Savayava Krushikara Sangha compared to Aharam Producer Company. In this regard it shared similarity with the Joint Liability Group based collective actions that required high levels of monitoring to prevent defaults. In Savayava Krushikara Sangha, the primary groups were small to enable monitoring for non-compliance. Similar to Shri Kshethra Dharmasthala Rural Development Project, the two cases assessed in this chapter had prior collective action experience which made the formation and coordination of activities easier. The role of the NGO (Covenant Centre for Development and MYKAPS) in supporting group formation was also instrumental in the emergence of the group. It enabled the coordination of collective action by forming linkages with the state and the markets. It also helped in enabling cooperation through the formation of groups and promoting group based activities. Unlike Shri Kshethra Dharmasthala Rural Development Project, Aharam Producer Company and Savayava Krushikara Sangha were smaller

initiatives with strength of around 250 members. Although both these groups had the potential to expand this was limited by the inability to find funds to incorporate and form more groups. In the case of Savayava Krushikara Sangha, the option to expand was limited due to the lack of potential to identify organic cotton markets and form contracts.

The primary organisational difference between Aharam Producer Company and Savayava Krushikara Sangha is that the former is a producer company and the latter is a farmers' federation. This difference, however, did not contribute to any variation in the performance of these two organisations. This point to the fact that rather than organisational form, the type of collective goods (certified organic, extension services, marketing and value addition interventions) influenced how collective action is governed. The production of certified organic cotton that required adherence to strict certification protocol characterised the rules and regulations or rational controls that governed Savayava Krushikara Sangha. There was great emphasis in adhering to rules and regulations, and there were also systems of sanctions to prevent noncompliance. In this respect, Savayava Krushikara Sangha was similar to credit-providing organisations that required strict adherence to repayment schedules. Therefore, screening of members before being admitted into the organisation was given importance in Savayava Krushikara Sangha. Although Aharam Producer Company was an organic cotton growing initiative, with the lack of organic certification and premium prices paid for cotton, there was flexibility in dealing with non-compliance, and in comparison to Savayava Krushikara Sangha rational controls were not strictly enforced.

5.5.2 Social similarities and differences

Social capital from networks, norms and trust was integral in the functioning of both the Aharam Producer Company and Savayava Krushikara Sangha. Prior organisational experience of the members and the NGOs helped support the formation of these initiatives.. The experience of members in collective action was useful as these members understood the expectations and importance of group-based activities such as meetings, joint training and dissemination of information through groups. This previous experienced shaped the structural social capital in both the groups that facilitated collective action. In order to maintain the structural social capital gained, both these organisations enforced purposive measures such as group

meetings and the sharing of information. Sensitization of the rural elites (dominant caste and landed individuals) to the importance and aims of the initiatives was also an important measure that was taken by the organisations to prevent interference and muster support for the organisation.

The primary difference between Aharam Producer Company and Savayava Krushikara Sangha was that the groups formed by the former were homogeneous groups comprising of OBC members. Traditional caste dynamics and rigidities of the region were mainly responsible for this homogeneity, and such initiatives of collective action do not have the ability to reconcile these social structures. Therefore, Aharam Producer Company was an exclusive group similar to Sridevi Farmers Welfare Society, and caste identities were a source of cognitive social capital predisposing or preventing individuals from cooperating. In these cases, social controls had an exclusionary effect in collective action. Aharam Producer Company also had women's-only groups similar to Pragithi Bandhu groups that addressed gender specific concerns such as poor access to information, extension services and markets. Aharam Producer Company also used religious symbols in naming its organisational units and groups to legitimise their activities and functions as an organisation. This was another source of cognitive social capital. Savayava Krushikara Sangha had mixed groups where members were from different castes, and through observations in the field it was apparent that caste differences did not influence the working of groups. The influence of dominant caste and economically better off individuals was, however, substantial. Defaulting or compliance of influential members sometimes determined whether other members at some localities conformed or defaulted. As Savayava Krushikara Sangha required high levels of peer monitoring, structural social capital generated from purposive measures such as group meetings and geographical considerations in group formations were instrumental in the formation of social controls. Social controls in the case of all groups were instrumental in complementing rational controls in governing the activities of the groups.

5.5.3 Economic similarities and differences

Both cases presented in this chapter were formed to improve production and marketing conditions of small and marginal agricultural producers. As the regions in which they were formed came under substantial water stress, and the availability of

canal irrigation was absent, organic farming was promoted to reduce the cost of production. Credit as a collective good was not provided due to higher risks of climatic uncertainties in the region, and also because there were no linkages to institutions such as NABARD. Therefore, the main economic similarities between the two groups were that they were non-credit providing famer initiatives that promoted organic farming. Organic farming is knowledge intensive and required training in input and land management (manuring, organic pesticide preparation) and integrated pest management, and therefore, extension services through collaborations with state agricultural universities and the agricultural department of the different states were essential services the two organisations provided its members. Similar to the Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society, the collective goods that were provided to members of the groups were both non-excludable and non-rivalrous, and this meant that all the collective goods that were created or accessed by the organisation were made available to all members of the group indiscriminately.

The primary difference between the two groups was that Savayava Krushikara Sangha produced certified organic cotton, and while Aharam Producer Company followed an internal organic standard, the cotton produced was not certified. Certification required strict adherence to protocols of organic standards, and this characterised many of the rules, regulations and sanctioning systems of Savayava Krushikara Sangha. The advantage of certification over non certification was that members were able to get an organic premium price when they sold their cotton on contract to the Appachi Cotton Company. The main intervention in the downstream market attempted by Aharam Producer Company was the integration of the supply chain by spinning the cotton produced from producers and selling it as yarn. Although the benefits in previous years have been passed on to primary producers, the challenges of the mills running under capacity and infrastructural problems of power outages are challenges beyond the capacity of the two organisations to deal with. Through interventions at the farm and marketing levels, both the organisations have been successful in bringing about changes in the cost of production, reduced marketing costs and higher price realisation. However, despite these interventions, marginal farms did not make enough surpluses to solely depend on agricultural income, and thus needed to add supplemental income through wages from manual labour. When comparing the cases in the two different states of Karnataka and Tamil

Nadu in terms of their organisational, social and economic features, there was no observable influence of institutional environment or institutional arrangements resulting from difference in these states. Challenges of agricultural production and marketing were similar in both the cases.

5.5.4 Similarities and differences in resource allocation and incentive alignment

With respect to resource allocation and incentive alignment, both the cases of non-credit providing producer organisations explored in this chapter were similar. They differed quite drastically from credit providing collective action explored in chapter four in terms of their resource allocation, but were similar in their resource alignment structures. In both Aharam Producer Company and Savayava Krushikara Sangha the resource endowment of producers were heterogeneous with respect to access to irrigation. Although on an average the land sizes were largely small and marginal, members with access to irrigation were able to attain higher yields and reduce drought risks in production. Compared to the credit providing cases where there was access to irrigation or higher rainfall reducing the risks of crop failure, credit was not provided. Another major difference between the two set of producer organisations was the nature of resource distribution among members. Unlike credit dissemination, utility from marketing services was conditioned based on the yield of the farmers. Therefore farmers with larger landholdings or access to irrigation gained more from the collective goods. In this way, this is similar to the access to mechanisation services in Sridevi Farmers Welfare Society, where members with property rights and larger landholdings were able to reduce labour costs. If credit were provided to farmers in Aharam Producer Company and Savayava Krushikara Sangha, conditioned on access to irrigation, variable utility may have discouraged arid and semi-arid cultivators from participating.

Similar to the Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society, the material incentives were also high in the two cases. Despite the surplus not being sufficient for households to depend solely on agriculture for livelihood, the higher surpluses generated through collective action was an incentive for small and marginal farmers to participate. The variable utility of the collective good (marketing services) incentivised more resource-endowed farmers to participate in collective action. The benefit of this was that they helped support the

initiative at the village level and helped reconcile traditional power influences that could have hindered the functioning of the initiative. Similar to the cases in chapter four, solidary incentives were also high in the groups. Social capital and previous experience of participating in collective action encouraged members to remain in groups and undertake group based activities.

5.6 Conclusion

This chapter looked at two cases of producer organisations in the state of Karnataka and Tamil Nadu to understand how these initiatives were structured in organisational, social and economic terms. Unlike the cases of Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society assessed in chapter four these initiatives were non-credit providing collective action initiatives that provided information and extension services for organic farming, inputs for the premium price for cotton (Savayava Krushikara Sangha) and value addition (Aharam producer Company) as the main collective goods. In assessing how Aharam Producer Company and Savayava Krushikara Sangha were similar and differed from each other, the main observation in this chapter was that the type of collective good that was provided determined how the initiative was organised. Savayava Krushikara Sangha which produced certified organic cotton had a higher risk of social dilemmas resulting from non-conformity, and, therefore, required stricter rules, regulations and sanctions than Aharam Producer Company where social dilemmas did not have high consequences. In this respect, Savayava Krushikara Sangha was similar to credit providing initiatives in chapter four. The other main difference between the groups was that in Aharam Producer Company, caste identities were strong and rigid making the group an exclusive group, while Savayava Krushikara Sangha had mixed groups with members belonging to different castes. The organisation or the interventions did not have the scope or the power to address the influences of traditional social influences, but had to work within these in order to make the initiative work.

Aharam Producer Company and Savayava Krushikara Sangha also had many similarities in the ways they were structured. These initiatives like Shri Kshethra Dharmasthala Rural Development Project and Sridevi Farmers Welfare Society were hierarchically organised with federated groups and a centralised decision-making system. Social capital from pervious collective action experiences were instrumental

in the formation of the latter initiatives and economically similar to the other cases in that they provided goods that were non-excludable and non-rivalrous once they were made available to their members. These similarities and differences point to the influences of social context, resource structures (availability or irrigation and associated risk) and the aim and purpose of the groups (organic and non-organic, credit and non-credit) in the functioning of collective action and how organisations coordinating them are structured. The next chapter concludes the thesis by summing up the main findings of this thesis and assessing their implications on policy and future research.

Chapter VIII: Conclusion

6.1 Introduction

Agricultural production in India is predominantly carried out by small and marginal farmers. Small producer agriculture faces a number of challenges in relation to access to markets, institutional credit, research and extension services and lumpy inputs such as management and mechanisation. Due to the size of the population dependent on agriculture in India, addressing these problems are central to the growth and development of the agricultural sector and poverty reduction. In many countries, especially Japan, South Korea and Taiwan which have agricultural sectors based on small farms, cooperatives have played an important role in neutralising disadvantages through state-provisioned extension services, key inputs, irrigation and market intervention operations. In India, however, cooperatives have faced many challenges. They have often had limited impact due to poor organisation and management, political interference, financial irregularities and corruption within the organisation. Along with cooperatives, other community-centred programmes based on collective action such as Self Help Groups (SHGs) providing microcredit, extension services and management of natural resources through watershed management programs have also met with challenges. Various academic works have shown that within these initiatives the non-cooperation of members, mismanagement of funds, vested interests of the bureaucracy or various stakeholders and improper functioning have been inhibiting factors. Hierarchical social structures based on strong caste identities in India have also been additional factors that have limited the impact of these initiatives and collective action in general. Despite these challenges, government plans, policy reports and research have cited the need to develop collective producer organisations to address small producer disadvantages.

Collective action is a complex phenomenon with a large number of organisational, social and economic features influencing how they are structured. Research on collective action in common pool resources have show how initiatives in one location may succeed while a similar initiative in another region or context may not lead to similar results. Owing to this complexity, although there has been a policy focus to support producer organisations in the agricultural sector, limited undertanding of the

functioning, inpact and potential of these organisations has prevented the adoption of concrete support measures and subsidies to promote such schemes more widely. The importance of collective action initiatives in the agricultural sector and the limited understanding of how these are stuctured to address challenges that small agricultural producers face has motivated this research on emerging producer organisations in India. The aim of this research has been to bring a deeper understanding of how agricultural producer organisational formats are structured and to explore how resources might be better allocated and incentives aligned in these initiatives. This understanding is crucial for determining the potential that producer organisations have in addressing the challenges faced by small producer agriculture and to promote them more widely in India.

This study of new cooperativism identified three formats of producer organisations prevalent in India to understand their structure and potential. Joint Liability Groups (JLGs), Producer Companies (PCs) and Farmers' Federations (FFs) were the three Producer Organisational Formats analyzed in this thesis. Four organisations in the states of Karnataka and Tamil Nadu were purposively sampled to carry out a comparative case study analysis. Sridevi Farmers Welfare Society (SFWS), Shri Kshethra Dharmastala Rural Development Project (SKDRDP), Aharam Producer Company (APC) and Savayava Krushikara Sangha (SKS) were the four cases chosen for this study. The central research questions of this thesis were:

a) **How are SFWS, SKDRDP, APC and SKS in the states of Karnataka and Tamil Nadu structured in organisational, social and economic terms?**
b) **How are resources allocated and incentives aligned in these producer organizations?**

How these producer organisation were structured, and how the resources were allocated and incentives aligned in order to enable collective action is crucial to increase an understanding of how challenges of coordinating interests of participants, reconciling social differences, accessing inputs and markets are undertaken, and how issues of non-cooperation that hinder collective action are reconciled. These factors that influence how collective action is coordinated also attempt to address issues of external economies that put samll farms at a disadvantage. At a policy level, the understanding of how organisations coordinating collective actions are structured will help to support and promote such initiatives more widely. Table 6.1 summarises the

findings of this study of how credit-providing and non-credit producer organisations are structured on organisational, social and economic terms, and identify the main features that influence resource allocation and incentive alignment. In the following parts of this chapter the key findings of this study, implications for future research and policy implications of the study are highlighted.

Table 6.1 Summary of structure, resource allocation and incentive alignment in producer organisations

	Credit based organisations		Non-credit based organisation	
Features	**Shri Kshethra Dharmasthala Rural Development Project**	**Sridevi Farmers Welfare Society**	**Aharam Producer Company**	**Savayava Krushikara Sangha**
Organisational features	Joint Liability Group NGO supported Federated small groups Previous experience of organising Strict rational controls No group size effect	Joint liability group Leadership and privileged group supported Federated small groups No previous organising experience Strict rational controls Negative group size effect	Producer company NGO supported Previous experience of organising Federated small groups Previous experience of organising Relaxed rational controls Negative group size effect	Farmers federation NGO and privileged group supported Federated small groups Previous experience of organising Strict rational controls Group size effect conditioned on resources
Social features	Heterogeneous social groups Structural social capital - previous experience Cognitive social capital – Women-specific initiatives, religious beliefs Social capital used as social control	Homogeneous cultural group Cognitive social capital Social capital used as social control Resource-endowed privileged group Exclusive group	Homogeneous social group, religion, women groups Structural social capital – previous experience Cognitive Social capital Exclusive group Social capital used as social control	Heterogeneous social groups Structural social capital – previous experience Social capital used as social controls High level of peer monitoring
Economic features	Small and marginal farmers Credit, labour sharing, extension services Low weather-related risks	Sharecropping farmers Credit, inputs, mechanisation Low weather-related risks	Small and marginal farmers Extension services, marketing services, value addition High weather-related risks	Small and marginal farmers Seeds, extension services, marketing services, organic premium price High weather-related risks
Resource allocation and changes	Non-rivalrous collective goods Collective good excludable based on conformity within groups Fixed utility of goods Improved production practices, lower labour cost, improved access to credit	Non rivalrous and non-excludable collective goods within groups Credit and inputs- fixed utility Mechanisation – variable utility Improved access to credit, inputs and reduced labour costs	Non-rivalrous and non-excludable collective goods withn groups Heterogeneous resource endowment Variable utility – marketing and value addition services Improved production practices, lowered production and marketing costs, price realisation	Non-rivalrous and non-excludable collective goodswithin groups Heterogeneous resource endowment Variable utility – marketing and premium price Improved access to seeds, improved production practices, reduced production and marketing cost, price realisation
Incentive alignment features	Material incentives- collective goods Solidary incentive- social capital, previous experience Purposive incentive- religious beliefs	Material incentives- collective goods Solidary incentive- cultural similarity	Material incentives- collective goods, variable utility Solidary incentive – caste similarities	Material incentives- collective goods, variable utility Solidary incentive – social capital, previous experience

6.2 The structure of producer organisations

The emergence, organisation and sustenance of collective action is a complex phenomenon. Attempts to develop an all-encompassing theory to explain the dynamics of collective action in the past have been futile (Ostrom, 2003). Various studies have shown that collective action in one context initiated to address a particular phenomenon may not be successful in another context addressing similar issues (Agrawal, 2001b; Baland & Platteau, 1996; Ostrom, 1998a). Due to this complexity of studying collective action, case studies are often employed to understand the various factors that influence it. Using theoretically informed works on collective action and institutional theory, this thesis developed a nested framework to understand how Producer Organisational Formats (POFs) are structured in organisational, social and economic terms. The framework of collective action is relevant as POFs are collective action initiatives influenced by the institutional environment and embedded in the social context. This section assesses this study's main findings regarding factors that influenced the structure of collective action.

6.2.1 Organisational Features

Producer Organisational Formats are hybrid institutional arrangements that have emerged to increase the economic viability of their small and marginal agricultural producer members. As institutional arrangements their main aim was to enable cooperation and also to coordinate access to upstream markets (e.g. credit, inputs and research and extension services) and downstream markets (e.g. commodity markets) to achieve its economic goals. To enable cooperation, interest of their members needed to be identified and their commitments to participate needed to be obtained. Potential social dilemmas needed to be identified, and processes to prevent or address them needed to be in place. These were important issues of governance in the initiation and coordination of collective action. The organisational features of a group determined and influenced how they were governed. As various institutional arrangements governing collective action vary according to their goals and purposes they have incredible diversity in rules and enforcement structures designed to change social dilemma situations (Ostrom, 1998). The governance of such initiatives entails the regulation and control depending on external support, group size, rules and regulations, past experiences, interest heterogeneity of participants and leadership.

External Support and leadership

Despite their differences in format as Producer Companies, Joint Liability Groups and Farmers' Federations, the four cases explored in this thesis were organised in a similar fashion, with the goal of improving viability of small and marginal farmer members. Producer Companies formal organisations (as registered companies with regluations and structured mandated by law); Joint Liability Groups emerged through provisions made available through financial linkages with NABARD; while Farmers Federations were established as a result of privileged group action (Table 6.1). Although the number of PCs and JLGs are rising in India, the instances where they undertake collective action and jointly access inputs, extension services and markets were few. This study found that the impetus for the emergence of POFs varied drastically between cases, and in this way their emergence was unique.

Table 6.1: Impetus for emergence of collective action

Producer Organisational Format	Impetus for Formation
Sridevi Farmers Welfare Society (SFWS)	Leadership and support from NABARD
SKDRDP – Pragithi Bandhu Joint Liability Group	NGO-initiated support
Aharam Producer Company	International project orientation, NGO support
The Savayava Krushikara Sangha (SKS) Farmers' Federation	Privileged group, NGO support, corporate support

What was common in the emergence of all these POFs was that they were initiated and supported by able leadership or NGO intervention. The NGOs were large organisations of repute in the local community with previous experience in organising group-based activities and had strong linkages with the state. In the case of Sridevi Farmers Welfare Society, leadership of an influential individual played a similar role in the formation of the group. Linkages with the state were also crucial for their emergence. The NGOs or leadership of the initiatives had close working linkages the state and this was crucial for the groups to be able to provide goods such

as credit, inputs and extension services to its members. The state played an important role in determining the economic and policy environment (price policy, agricultural investment, functioning of markets, subsidies) in which agricultural production takes place. The role of the state was also important and central to the creation of public goods such as infrastructure, research and development. POFs cannot influence the creation of these public goods and are rather dependent on the state to enable their supply. NGOs also played an important role in linking primary producers to downstream markets and enable the formation of contracts with corporate entities (in the case of Savayava Krushikara Sangha) and also enable value addition (in the case of Aharam Producer Company).

Group size

The size of a group determined the capacity of the group to provide goods to all its members and monitor the activities of the group (Oliver et al., 1985; Olson, 1965). Various studies have shown how smaller group sizes are more efficient, especially in initiatives that are vulnerable to social dilemmas such as free rider problems (Baland & Platteau, 1996; Olson, 1965; Wade, 1994). This was largely due to the rivalrous nature of common pool resources, where one person's use of the good reduces its availability for another. In this study, initiatives used federated group structures (with smaller groups ranging from 5 to 20) to manage groups. Smaller groups facilitated peer monitoring to control wilful defaulting on credit and non-compliance in certified organic farming. The factor that determined the size of the initiatives was their ability to access collective goods for its members. The Pragithi Bandhu scheme was the largest initiative and this organisation had the resources to extend credit to all its members and personnel to manage and coordinate this initiative. In the Aharam Producer Company and Sridevi Farmers Welfare Society which were socially homogeneous organisations, the size of the initiative was limited by the size of interested participants. In Savayava Krushikara Sangha the organisations ability to expand was limited by their management resources and ability to access sufficient credit, inputs, and marketing opportunities.

Structure and Rules and Regulations

This study found all cases of POFs to have a hierarchical structure with federated groups as the basic unit. The goods that the POFs provided its members determined the social dilemmas that potentially arose in the groups. The social dilemmas of

credit providing organisations were wilful defaulting on repayment, while non-compliance to organic farming protocol was the major risk in certified organic cultivation. Rules, regulations and sanctioning or rational controls were important in the management of these institutions in order to prevent the emergence of social dilemmas. Rational controls were strictly enforced in groups with a higher risk of social dilemmas (SKS, SFWS and SKDRDP). In Sridevi Farmers Welfare Society, there was evidence of coercion being used to ensure repayment by members. These groups with high risks of social dilemmas had smaller group sizes (5-10 members) as it enabled peer monitoring. Rational controls were not so strict in the Aharam Producer Company where the consequences of social dilemmas were insignificant.

Previous experience of organising

Experimental studies using laboratory set games such as prisoner's dilemma games have helped establish that previous experiences of cooperation and non-cooperation influences how individuals behave in a group (Axelrod, 2006; R. Hardin, 1982; Taylor, 1987). These studies find that past actions builds trust, helps solve social dilemmas and may also weaken the motivation to cooperate collectively if individuals have had poor experiences of cooperation. With the exception of Sridevi Farmers Welfare Society, all other initiatives had previous experience of organising group-based activities such as SHG initiatives that predisposed them to take part in collective action initiatives. The organisations used this social capital from previous experiences to initiate new collective activities, thus reducing the cost of mobilization and organising. The previous experience of taking part in group-based activities helped these experienced members to better adapt to the requirements of the new initiatives. This previous experience of organising collective action also helped the NGOs in coordinating the producer organisation.

A review of the main organisational features that influenced the structure of the POFs explored in this study showed:

1. External support from NGOs or individual leadership with linkages with the state to the POFs was crucial for its emergence and coordination.
2. NGOs or individual leadership was also crucial in enabling cooperation by obtaining commitments from different members and enabling and supporting the formation of groups.
3. The size of these initiatives was determined by the management of resources allocated to the groups (personnel and expertise) and their ability to coordinate

collective action by accessing goods such as credit, inputs, marketing and extension services-

4. The nature of social dilemmas (freerider problems, moral hazards of defaulting) determined the strictness of rules, regulations and sanctions or rational controls in groups. Therefore groups providing credit and certifications had stricter rules and enforcement structures
5. Privileged members or influential member participation in groups helped legitimise the group's activities in the larger community in which the producer organisation functioned. Although they gained more from participating in some cases, their participation was crucial to the group.
6. Three of the four groups had previous experience in organising group-based activities, and this helped in the mobilisation and organisation of POFs as collective actions.

6.2.2 Social Features

Social features of caste, class and gender have influenced agricultural production in India as they determine access to essential input such as land, credit and social services (Thorat & Newman, 2007; Thorat, 2009). Caste, class and gender traditionally determined an individual's right to own property. Also, these social features have the potential to determine the social relations between members in a collective action initiative. The poor implementation of land reforms in India has led to distribution of land being skewed in favour of the dominant castes in rural areas. In Karnataka, however, relatively better implementation of land reforms compared to Tamil Nadu (Deshpande & Torgal, 2003) saw the inclusion of lower castes (SC & ST) with access to property rights in producer organisations. Savayava Krushikara Sangha and the Pragithi Bandhu scheme in Karnataka were organisations with participation of members from different castes making them inclusive groups. In Aharam Producer Company and Sridevi Farmers Welfare Society, caste status and cultural identity, respectively, played an important role in member participation in the producer organisations which made them exclusive groups. Social features of caste, class, gender and social capital that comprises of networks, norms and trust crucially determined how collective action was coordinated.

Social capital and the organisation of collective action

In Indian society stratified by caste, class and gender lines, the propensity of collective action to emerge and sustain would depend on the reconciliation of power relations. Pessimism in relation to the potential for collective action initiatives to emerge and become effective in India has been evident owing to the hierarchical and stratified nature of rural society (Bardhan, 1996; Platteau, 2000).The two forms of social capital important for collective action are structural social capital and cognitive social capital; the former helps facilitate collective action, while the latter predisposes individuals to act collectively. Table 6.2 lists the different forms of social capital that helped the effective organisation of the four POFs in this study.

Table 6.2 Different forms of social capital in POFs

Cognitive Social Capital	Structural Social Capital
- Religious affiliations of members - Previous organisational experience - Community based solidarity	- Group-based activities (meetings, labour sharing) - Networks - Savings groups - Joint management of resources

This study found that religious affiliation (Pragithi Bandhu scheme, Aharam Producer Company), pervious experience of organising (Savayava Krushikara Sangha; Aharam Producer Company, Pragithi Bandhu scheme) and community-based identity (in Sridevi Farmers Welfare Society) were the main forms of cognitive social capital that predisposed individuals to participate in collective action in the four cases. Shri Kshethra Dharmasthala Rural Development Project was an NGO-based project associated with a temple that has held historic social and spiritual significance to individuals in the host region. This religious significance of the organisation predisposed many individuals in the region to join the Pragithi Bandhu scheme. Previous experience in organising groups for natural resources management (Savayava Krushikara Sangha) or savings and microfinance schemes (Pragithi Bandhu scheme, Aharam Producer Company) also motivated past members to participate in the newer POF initiatives. In some initiatives, previously formed groups were revived and reactivated with newer aims. In the case of SFWS, although the organisation did not have previous experience in organising tenant farmers, their strong cultural homogeneity and shared economic plight in tenant farming motivated

collective action. From these observations, this study found that various forms of cognitive social capital crucially influenced the formation of these POFs.

The structural social capital that facilitated collective action included networks of social relationship, norms and trust within the groups. Norms and members' trust in groups from past community organising experiences were revived when SHG groups were re-formulated as SKS and Aharam Producer Company. This study found that most groups took purposive measures to build structural social capital within the groups. In many groups, regular group meetings and group-based labour sharing were mandatory. Group-based extension services and group-based saving activities were also carried out to strengthen network linkages and trust among members. The NGOs were aware of the importance of social capital, especially in groups where social dilemmas were high. Therefore, they carefully formed groups considering the geographical proximity of members and the self-selection of group members, and utilized existing social networks to ensure cohesion. Social capital in groups was furthermore used to enable social control in groups. In informal groups such as these producer organisations, there were no legal enforcement or rules through formal contracts; thus, social controls complimented rational controls in the form of rules, regulations and sanctions developed at the organisational level.
The main social features observed in the four case studies were:

a) POFs did not have the agency to address traditionally rigid caste dynamics in exclusive groups due to existing opposition norms.
b) Religion and cultural identity were sources of cognitive social capital predisposing individuals to act collectively.
c) Previous experience of organising was a crucial source of structural social capital to facilitate collective action through networks, norms and trust.
d) Social controls complemented rational controls in monitoring and preventing social dilemmas from emerging in groups.

6.2.3 Economic features

Agricultural production in India is predominantly carried out by small and marginal producers as 67 per cent of agricultural producers own less than one hectare of land. Markets, institutional credit and research and extension services are the main institutional arrangement essential to support and enable agricultural production in an economy of small and marginal agricultural producers. However, due to their small

size of landholdings, external economies of scale, economic disadvantages and social status conditioned by caste, class and gender, many agricultural producers cannot access the institutional arrangements of the goods and services they provide. The primary role of POFs, thus, was to enable access by addressing some of these structural disadvantages. POFs are organisations that aim to collectively access essential goods and services for its members to improve agricultural production. POFs, moreover, play a significant role because primary producers individually do not have the agency and power to access these goods and services without collective action.

The POFs examined in this thesis mainly enabled access to public goods (R&D, information, subsidies and market services) and private goods (inputs, credit). This study found POFs to differ fundamentally from Common Pool Resource-based collective actions as the former provides public and private goods and not common goods. Since common goods are rivalrous, excluding them in the POFs' provision fundamentally changes the type of social dilemmas that emerge within the organizations. The goods and services accessed and made available to the members of the POFs are collective goods, and once accessed they become non-excludable and non-rivalrous to all members. The four POFs in this study provided a combination of different goods and services to its members which are delineated below in Table 6.3.

Table 6.3: Collective goods and services accessed by different POFs

Collective Goods	SKS	SKDRDP	APC	SFWS
Institutional credit		✓		✓
Seeds	✓			
Fertilizers and pesticides (organic and non-organic)	✓			✓
Information	✓	✓	✓	
Extension services	✓	✓	✓	
Farm gate purchase	✓		✓	
Premium price	✓			
Value addition			✓	
Mechanisation				✓
Labour		✓		

Credit Institutions and commodity markets

Agricultural markets in India are complex with multiple forms of exchange relationships and highly differentiated goods and services (Harriss-White, 1995a). Exchange relations are not uniform, equal or on price terms (Bharadwaj, 1985), and social discrimination and traditional power structures based on class, caste and gender are pervasive in these markets. Agricultural markets comprise of upstream and downstream markets, and from the upstream markets agricultural producers' source mainly credit and inputs**.** When the state fails to provide these goods, informal sources cater them, often on unfair terms. The downstream markets where primary producers sell their produce are highly fragmented with a large number of intermediaries between sellers and final users of the produce. Transaction practices in these markets are characterised by poor practices such as fraudulent weighing and the lack of grades and standards-based transactions.

This study showed that POFs were able to provide a combination of goods and services to primary producers. Inputs such as seeds (in Savayava Krushikara Sangha) helped ensure better yields and reduce the risk of poor germination rates. Credit on fair terms was provided without collateral to some POFs (Sridevi Farmers Welfare Society and Shri Kshethra Dharmasthala Rural Development Project) with risks borne by the initiatives. Marketing services in Savayava Krushikara Sangha and Aharam Producer Company in the form of farm gate purchases, organic premium and value addition helped reduce transportation and search costs, increase price realisation and reduce losses from poor market practices for producers. Non-price social factors that affected bargaining power were also neutralised through these initiatives as marketing was done collectively.

These initiatives with regards to market access had their limitations. The provision of goods and services was conditioned on the ability of the enabling organisations (NGOs or leadership) to form linkages with the state and (or) markets. Therefore, not all initiatives in this study were able to access credit and marketing services uniformly. The inability of organisations to absorb risks of default especially in groups dependent on rain-fed agriculture led to credit services not being provided to these groups. Producers in Sridevi Farmers Welfare Society had access to irrigation facilities and therefore had lower risks of crop failure which led to the organisation extending credit to their members. SKDRDP being located on the windward side of

the Western Ghats mountain ranges and growing perennial crops as the main crops reduced the risks of crop failure. These findings show that the enabling organisations ability to manage risk and the linkages they have with the state and markets were important in determining viability of collective action.

Institutional arrangement for agricultural extension

Research and development and technological extension in agriculture are crucial in increasing food production to meet the need of increasing population, improve farm-level practices to make small agricultural producers viable and reduce environmental externalities that are inevitably caused by intense agricultural production. Agricultural research and policy in many developing countries such as India are largely in the domain of the state. However, due to the scale and complexity of the agricultural sector and the lack of sufficient operational budgets to carry out extension services, state delivery of extension services has been strained.

The four case studies examined in this thesis have showed that all the POFs with the exception of Sridevi Farmers Welfare Society have been able to provide its members with crop and region-specific extension services through linkages with state research institutions. Initiatives under rain-fed conditions (Savayava Krushikara Sangha and Aharam Producer Company) where input-intensive agriculture was not feasible adopted organic production practices to help members reduce the cost of production. In Sridevi Farmers Welfare Society where extension services were not provided to its members, the yields were low despite undertaking input intensive agriculture under irrigated conditions, affecting returns to investment. All POFs studied in this thesis, except the Pragithi Bandhu scheme, focused on the production of one major crop (either rice or cotton). Although farmers grew a combination of crops, the main benefits (inputs, seed, extension service and marketing) were provided for the major crop. The Pragithi Bandhu scheme, which is a larger organisation with members in multiple geographical locations growing perennial and seasonal crops, provided mainly credit, labour-sharing and selective extension benefits. This study found that smaller initiatives with uniform geography and single crop focus were able to provide a wider range of specific goods and services and to set specific performance targets, which was less likely for the larger and internally varied organisation.

Tenure and improved access to land

Collective interventions by POFs have helped bring about changes in profits for small and marginal producers. The analysis of profits in the various cases, however, show that the surpluses created with the help of collective action were still insufficient for households to rely solely on agriculture for livelihood. These households often complemented their farm income by selling their labour. The main reason for this, apart from heterogeneities in land fertility and access to irrigation, was that many of these farms were too small. Land tenure systems through fixed or sharecropping contracts have been cited by few scholars to remedy the problem of insufficient access to land for cultivation (Bell, 1990; Melmed-Sanjak, 1998; Sadoulet et al., 1998; Ballabh & Walker, 1992; Vaidyanathan, 1994; GOI, 2013). A counter argument to this has been that this may lead to reverse tenancy in which informal contracts formed on adverse terms due to low bargaining power of marginal producers cannot be regulated. It is also deemed problematic that tenants still will not be able to access credit (due to the credit supply effect) and may not have sufficient incentive to cultivate (due to low security effect) (T Besley, 1995).

The case of Sridevi Farmers Welfare Society shows that collective actions do have the potential to negotiate leases on fair terms, enable access to institutional credit and subsidise inputs to enable fixed contract tenure. However, in this study, long term leases that gave security of tenure and incentivised land development were absent, and extension services and land improvement measures were not adopted in the initiative. As a result, yields were poor despite irrigated, input-intensive agriculture. Tenant farming in most Indian states is not legally recognised, but 15-35 per cent of land in India is cultivated under tenure. Tenure reforms are therefore necessary to mitigate the security effect of land tenure and allow for long term leases.

This section has highlighted the relevance of POFs as collective action in addressing specific challenges small and marginal producer face in agricultural production. The benefits of POFs as collective actions include their ability to access upstream and downstream markets and public goods such as extension services, and also to mitigate the effects of socially influenced non-price factors hindering such access. Table 6.4 summarises the findings of this study with regard to economic strengths and limitations of POFs.

Table 6.4 Economic changes and limitations of POFs

Particulars	Strengths	Limitations
Social factors of access	- Potential to mitigate access problems associated with caste, class and gender - Potential for improved access to women	- Access to land is important - Oppositional norms and strong caste identities can derail POFs - Explicit gender-related activities are needed to be gender inclusive
Credit and commodity market access	- Improve access to multiple goods and services - Ability to prevent market interlocking - Quality inputs - Farm gate purchase, helping reduce marketing costs - Mitigate non-price factors affecting bargaining	- Benefits conditioned on NGOs' ability to form market and state linkages - Different combination of benefits - Absence of credit provisioning that is conditioned on risk - Problems of finding markets for organic produce and also forming long term supply contracts
Extension services	- Provisions of extension services through linkages with the state - Adoption of alternative systems such as organic farming in regions with climatic disadvantages	- No extension services on leased land - Can largely provide research and information of what state research institutions provide- this may not be region specific

Property right and marginal production	- Address concerns of external economies relating to small land size - Improve access to credit - Potential to improve access to land for tenant farming	- Cannot increase surplus for marginal producers to solely depend on agriculture - Limited potential to form long-term leases, resulting in poor land development

6.2.4 Resource allocation and incentive alignment

In order to improve production practices and access to essential inputs and markets of its members, the collective goods accessed by the groups should be effectively distributed to all members of the group. Sufficient incentives should also be provided to individuals to continue participating in the collective action. Existing studies on collective action point out that initial resource endowment, right to usage of collective goods and nature of usage crucially affects resource allocation in collective action initiatives. In terms of initial resource endowment, the majority of participants in all the four cases were either landless farmers or small and marginal farmers,although in Savayava Krushikara Sangha and Sridevi Farmers Welfare Society there was a minority that had larger resource endowment. Savayava Krushikara Sangha and Aharam Producer Company were two initiatives where members did not have uniform access to irrigation, and in these cases it was not the size of land holdings but access to irrigation that made resource endowments heterogeneous. Households with access to irrigation were able to achieve higher yield and reduce drought risks.

The right to usage of collective goods was determined by the non-rivalrous and non-excludable nature of goods within the group. Non-rivalrous meant that the use of a good by one member did not reduce its availability for another member, and non-excludability meant that once the good was made available an individual could not be prevented from using it. In all the initiatives, the collective good was accessible for all members of the group, and, therefore, it was non-rivalrous. At the same time, in most groups collective goods were non-excludable as well. This meant that irrespective of caste and class, members of inclusive initiatives (Savayava Krushikara Sangha, Pragithi Bandhu scheme) could benefit from the collective goods that were

made available as the goods were non-excludable. In the Aharam Producer Company and Sridevi Farmers Welfare Society, strong caste-based identities limited the participation of lower castes in the initiative. However, this was an exclusion that took place outside the group.

Shri Kshethra Dharmasthala Rural Development Project and Aharam Producer Company were two groups that had women's only groups to address gender specific challenges of agricultural production. In both groups, women-led households could access inputs and extension services, as well as marketing services in the case of Aharam Producer Company. These services were provided by the POFs to help women mitigate some gender-specific challenges of access in agricultural production and marketing. In other groups, there was no evidence of women's participation in decision-making processes or the provision of gender specific goods and services; there were registered women members largely because property rights were under their names. Therefore, this study found that the need for explicit gender-specific services and aims in the organisation are needed for POFs to be gender inclusive. Overall, the study found that POFs as collective action have the potential to mitigate gender related access problems and caste and class based exclusion in some cases.

Furthermore, the potential use of a collective good to a particular household was determined by whether the good had fixed or variable utility among members. Fixed utility meant that, irrespective of the size of resources an individual possessed, the collective goods they were entitled to remained the same. Variable utility meant that the level of entitlement was conditioned on the size of resources an individual possessed. In the credit-providing initiatives of Pragithi Bandhu scheme and Sridevi Farmers Welfare Society, the utility of collective goods was fixed. This meant that different members had access to a fixed amount of resources (in this case credit and inputs) irrespective of their resource endowment. In Sridevi Farmers Welfare Society access to farm machinery (transplanter) had variable utility as members with larger land could gain more from reduced labour cost.

In the non-credit producer organisations (Savayava Krushikara Sangha and Aharam Producer Company) the major collective good was value addition and marketing services. These goods had variable utility as members with access to larger landholdings or irrigation facilities gained more from marketing and value addition

services through higher yields. These members formed the privileged groups and stood to gain more from the initiative. These members often had important positions in the groups and also had the incentive to ensure the success of the initiative. The main incentive to organise in these cases was the material incentives that were provided to its members. As goods were non-rivalrous and non-excludable, caste, class and gender-based exclusion to goods and services were addressed. Although in many cases the changes brought about by collective action was not sufficient for households to solely depend on agriculture, the changes were greater than in the absence of collective action. This was a powerful incentive in most groups for members to continue in collective action.

The other forms of incentives to participate in collective action were solidary incentive and purposive incentives. Solidary incentives were the non-monetary incentives such as social capital and solidarity from group activities that incentivised participation among members. In all the case studies except Sridevi Farmers Welfare Society that had previous experience of organising, social capital of networks, norms and trust played an important role in enabling the formation of groups. In Sridevi Farmers Welfare Society, the homogeneous cultural identity and similar economic plight of members help to form the solidary incentive for cooperation. In Shri Kshethra Dharmasthala Rural Development Project, a sense of religious obligation was an important incentive for members in the region close to the temple to participate in collective action which formed the purposive incentive in this group.

The main observations in the cases with regard to resource allocation and incentive alignment were:

a) Inclusive producer organisations enabled better access to inputs, credit, markets and extension services irrespective of caste and class as these goods were non-excludable.
b) Groups with explicit gender-specific services and aims mitigated gender-related access problems in agricultural production.
c) Resource heterogeneity and variable utility in some groups included resource rich participants in the initiative, and they helped in legitimising collective action initiatives and helped counter traditional power structures in rural areas.
d) Material incentives were the most powerful incentives that enabled the formation of groups.

e) Solidary incentives from existing social capital and previous experiences of organising also influenced participation.

6.3 Implications of future research

The theoretical framework used in this study helped to identify important organisational, social and economic features that influence how POFs coordinating collective action are structured. In this analysis, the influence of the history of these producer organisations and their emergence is understudied. In the current framework, the 'previous experience' of various initiatives was seen to have helped organise and build social capital essential in sustaining the present collective action initiatives. However, unpacking how collective action institutions 'emerged' would be crucial for understanding producer organisations and collective action in general on a deeper level. New Institutional Economics (NIE) theorists have assumed that institutions emerge from an "institution-free state of nature" (Williamson, 1985, pg 1430; , 1975, pg 20) which has been widely criticised. Scholars like Hodgson (2002, 2003) have argued that the fundamental structures within which institutions are studied are in themselves institutions defining the circumstances of individual interaction. Therefore, the study of the emergence of institutions in a historical context would help shed light on the circumstances and role played by pre-existing institutions on producer organisations and the collective actions they coordinate. A re-specified analytical framework would thus help to theorise the emergence and historical context in the 'institutional environment' level, helping to bring a more specific understanding of the initiatives coordinating collective action.

The exploratory case study design of this thesis helped to examine the influence that organisational, social and economic features had on the way that POFs in Karnataka and Tamil Nadu were structured. Confirmatory case studies on similar initiatives in other regions of India and in other countries where agricultural sectors are also dominated by small and marginal productions will help determine the falsifiability and generalisability of the findings of this study. Variations in external support, social features and the nature of goods and services accessed may also help to further understand the complexities of collective action in the agricultural sector. Altogether, this multi-dimensional inquiry will help expand the theoretical understanding of how collective action is emerged, organised and sustained in small producer agricultural production.

The POFs explored in this study predominantly formed linkages with upstream markets to access inputs such as seeds and fertilizers and credit. The linkages with the downstream commodity markets for most of the initiatives were limited or poor (with the exception of Savayava Krushikara Sangha). Linking POFs with downstream markets is essential to improve market access and price realisation for primary producers. POFs may be effective platforms to form linkages such as NGO-corporates initiatives to implement CSR activities or effectively integrate the supply chain. However, within the scope of their present activities, initiatives organized as multi-service providing POFs have the potential to bring widespread economic change in the rural economy. Increase in bargaining power will help in improving access and development. POFs may emerge to be institutions through which welfare and aid can be disbursed to specific target groups and activities, promoting participatory development and development planning. However, more research is required in this area.

6.4 Implications for Policy

Growth in the agricultural sector is essential to achieve overall economic development through increased food security, transfer of surpluses and reduced poverty in India. However, agricultural production is constrained by poor access to inputs and markets and high exposure to climatic and market risks. Small and marginal producers (less than 2 hectares of land) are most vulnerable to the adverse production and market conditions affecting their capabilities or the freedom to achieve wellbeing. The role of POFs and their potential to mitigate some of these risks and access problems are widely cited in literature and in policy briefs and plans. However, limited understand of the functioning, impact and potential of these organisation have inhibited the progress of supporting or promoting these organisations.

This study has shown that the ability of POFs to bring about changes to agricultural production of small and marginal producers are fundamentally determined by how they are structured and access various goods and services. In order to bring broader implementation into the rural sector, policy interventions are necessary to enable the emergence of community-based collective actions and form effective linkages with the markets. Issues relevant for policy found in this study include:

- The poor performance of collective action initiatives was largely due to social differences, vested interests, mismanagement of resources within the groups along with a high level of state intervention and non-cooperation among members. POFs in this study were able to successfully mobilise social capital of pre-existing network ties, religious affiliations and trust to address these social dilemmas hindering collective action. Centralised and top-down interventions may not be able to address these concerns as effectively as decentralised grassroots initiatives, thus making a case for supporting decentralised, region-specific initiatives. These POFs are often small, decentralised, grassroots initiatives coordinated by NGOs or individual leadership. Their size and regional focus help to identify community-specific and ecology-specific challenges and address them.
- NGOs and individual leadership were crucial in the formation and coordination of these collective actions. However, their agency to improve access to collective goods decisively depended on linkages with the state. Therefore, state support of POFs through NGOs is critical. Extension services, credit institutions, input markets and subsidies should thus be provided by the state to these institutional arrangements.
- POFs provided multiple goods and services to their members unlike single goods or service-providing cooperatives (credit, marketing, inputs). This helped bring more widespread changes and helped address multiple challenges. Therefore, enabling POFs to provide multiple goods and services is highly relevant. Apart from credit to JLGs by NABARD, there are no provisions by the state to extend these services specifically to POFs. The ability to access these depends on the agency of the NGO.
- With 87.3 per cent of the working women population in agriculture, women make a significant contribution to the agricultural sector. However, they face considerable disadvantages and challenges in accessing institutions and resources. This is especially true for women- led households. POFs that had women-specific agendas could address some of these challenges, while initiatives without them did not address these challenges. The promotion of collective initiatives targeting gender-specific challenges in agricultural production is therefore crucial, as this study has shown their potential to bring about change.

- Private sector interventions in the agricultural sector are also important in extension services and marketing. Organisation of small and marginal producers is seen to enable contracts, certifications and implement grades and standards. POFs have the potential to enable group certification and produce grade specific commodities.

The creation of public goods and infrastructure is the mandate of the state, and POFs or NGOs coordinating small or marginal agricultural producers cannot undertake these activities. The absence of infrastructure facilities such as irrigation systems has hindered the access of goods such as credit and fertilisers due to high risks. Lack of public capital formation in rural areas thus limited the potential of POFs to provide certain forms of goods and services. Therefore, interventions and the support of the state is critical without which producer organisations will have little real impact on agricultural growth and development.

The increase of production cost in Indian agriculture in the years following liberalisation due to increased input costs without corresponding increase in subsidies and the relatively slow rise in the market prices of major agricultural products have had adverse effects on small and marginal production. The global rise in food prices from 2004-2008 changed the terms of trade in favour of agriculture, however, small and marginal producers did not benefit much as their marketable surplus has been low. This makes small and marginal producers and the non-farmer rural population net consumers rather than producers of food. Therefore, food price increase has resulted in welfare loss rather than benefit for the rural population (de Janvry & Sadoulet, 2009).

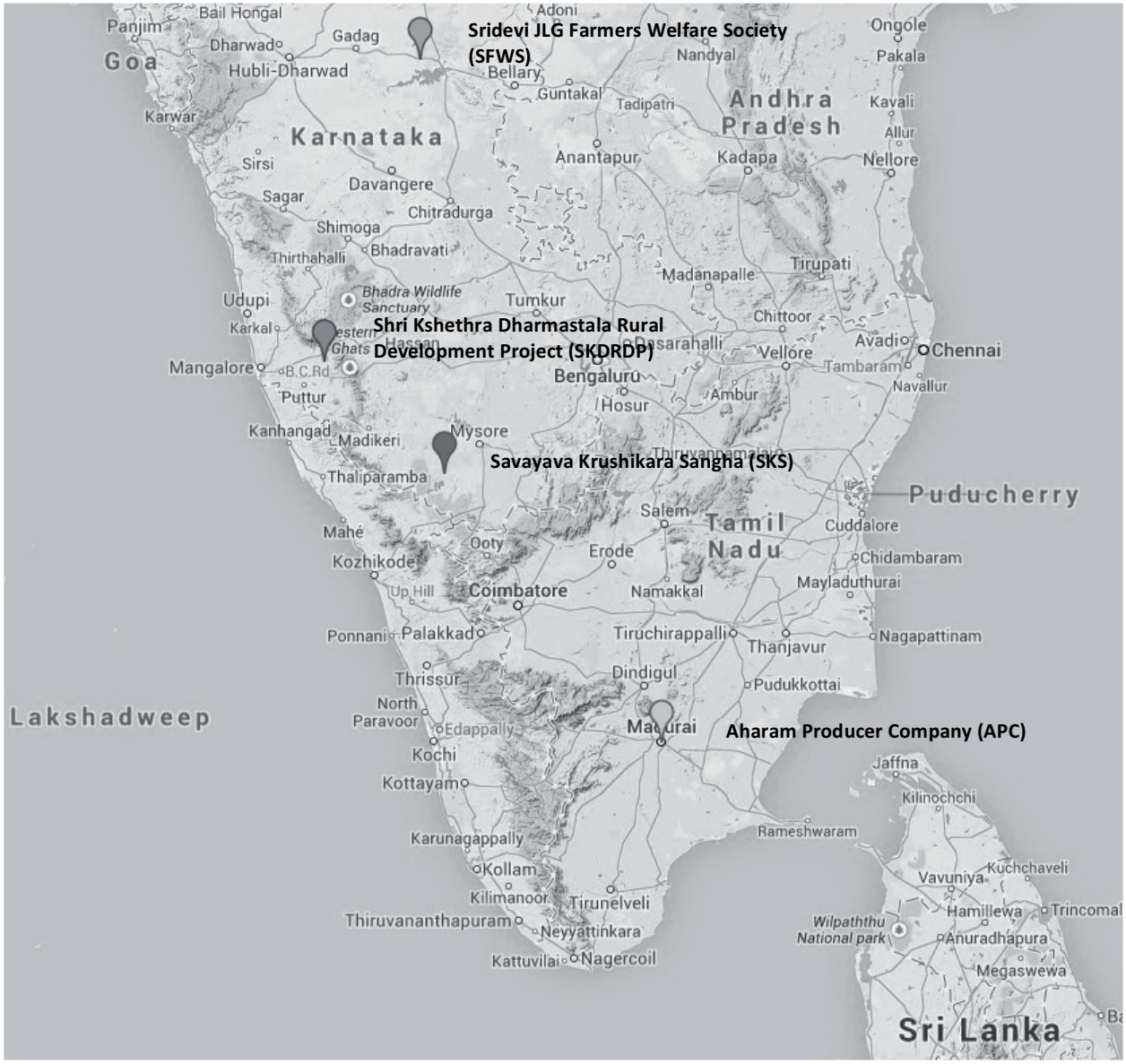
Increase in agricultural surplus is essential in this regard in order to increase the profitability of farming and increased rural incomes. In this regard, POFs as organisational innovations are necessary in order for producers to adapt to these changing conditions and to decrease costs of production through better access of inputs and credit, improved farm and resource managements, adoption of technology and improved price realisation in the market. In the absence of collective action, this may not be possible due to low bargaining power and high fixed costs in information and technology access. Promotion of POFs as new cooperative structures coordinating collective action may help small and marginal agricultural producers

cope with the external economies of scale challenges. However, it is crucial to note that the social and economic context in which collective action is coordinated influences their structure and how they are coordinated would determine their propensity to succeed or fail. Understanding how POFs are structured in organisational, social and economic terms, how resources are distributed among members and how collaboration is incentivised will help better coordinate collective action.

Appendix

Appendix I

Location of Various case studies



Source: Google Maps

Appendix II

Timeline of Fieldwork (January – May, 2012)

Month	Location	From	until
January			
	Wayanad	9th	14th
	Bangalore	19th	5th
February			
	Raichur/Koppal	6th	15th
	Bangalore	16th	20th
	Dharmastala	21st	26th
March			
	Madurai	11th	23rd
April			
	HD Kote	6th	13th
	HD Kote	28th	29th

Appendix III

List of informants interviewed for the Study

No.	Informants	Position	Organisation	Date of Interview
1	Dr. Gopal Naik	Professor	Indian Institute of Management Bangalore	21st January 2012
2	Mani Chinnaswamy	Appachi Cotton Company	Pollachi , Tamil Nadu	8th January 2012
3	P.K. Joey	Executive Officer and Inspector of Primary Service Societies (cooperative banks)	Wayanad	10th January 2012
4	Shaji	Farmer member	Shreyas, Wayanad	12th January 2012
5	P.M. Pathros	Coordinator	Shreyas, Wayanad	10th January 2012
6	K.M. Saji	Kudumbashree District coordinator	Wayanad	14th January 2012
7	Narayan Raju	District Development Officer	NABARD, Raichur District	6th February 2012
8	Nagaraju	Coordinator	SFWF, Koppal	12th February 2012
9	Prasad Rao	District Development Officer	Nabard , Dakshina Kannada District	18th February 2012
10	Dr. Manjunath	Executive Director	SKDRDP, Dharmastala	21st and 23rd February 2012
11	A. Anand	Former MYKAPS coordinator	SPRED, Raichur	8th February 2012
12	Manorama Bhatt	Training and Induction Office	SKDRDP, Dharmastala	21st February
13	Vinutha	Field Officer	SKDRDP, Dharmastala	25th February 2012

14	Parthasarathy	Project Manager	CCD, Madurai, Nagapattnam	17th March 2012
15	C. Kumeresh	Administrative Office	CCD, Madurai	12th March 2012
16	Suresh Mammen Thomas	General Manager of Operations, Kalasam Foods	CCD, Madurai	14th March 2012
17	Muthu Velayutham	Founding Secretary	CCD, Madurai	14th March 2012
18	Tachinamurthy	Coordinator, Cotton Project	CCD, Madurai	11th March 2012
19	Mohanraj	Field Officer	CCD, Madurai	17th March 2012
20	Channappa	Coordinator, CEO	Kabini Organics, HD Kote	9th April 2012
21	Chandra Shekar	Coordinator,	SKS, HD Kote	7th April 2012
22	William D'souza	Executive Director	MYKAPS, Mysore	12th April 2012
23	Nagaraj Aras	Ex-secretary	SKS, HD Kote	7th April 2012
24	Stine Jersie Olsen	Senior Investment Manager, CSR Capital	Copenhagen, Denmark	14th February 2013

Appendix IV

Informant Interview Guide

Informants Interview Guide

Profile of the Organisation

1. Background of the Organisation
2. The programs the Organisation Runs
3. Structure of the Organisation

Collective Action Initiative

1. What is the Nature of the Collective Action Initiative
    a. How was it conceived?
    b. How was the model adapted
    c. What was the motivation behind the development of this collective action
2. What is the Developmental goal of the collective action
3. How many years has this initiative been running
4. Who are the major stakeholders of the initiative
5. Profile of the primary producers
    a. Large medium or small
6. What is the strength of the initiative
    a. How many people
    b. How many groups
7. Is there an ideological motivation for this collective action
    a. Organic
    b. Environmental consciousness
    c. Fair trade
    d. Others

Structure of Collective Action

1. Nature of Contract
2. Formal or Informal contract
3. What is the role of the major stakeholders
4. How do various stakeholders converge?
5. What is the decision making structure

Collective Action

1. How were the groups formed?

2. What is the basis of group selective
    a. Self selected
    b. Grouped
3. What is the size of the groups
4. How and why was this group size determined
5. Perceived Collective action problems and how are they dealt with
6. Nature of Collective action
    a. Initial capital jointly borrowed and is the liability shared?
    b. Is the land leased or owned by stakeholders
    c. Is there a difference in size of contribution
    d. If yes, how is this variation accounted for
    e. Is production undertaken jointly?
    f. Profile of the division of labour
7. What is the Exit strategy
    a. how does a member leave the group
    b. can a member be expelled from the group
    c. how are his/her assets liquidated and re- distributed
8. Outreach and Linkages
    a. How is the problem of access dealt with

       Credit
    b. What kind of credit linkages are given to the primary producer
    c. Is the amount larger than normal agricultural loans given by the bank
    d. Is the state policies been conducive in aiding this – is NABARD playing a role

       Inputs
    e. Can any government subsidies and programs be availed under this project
    f. What kind of production support is given to primary producers
        i. Seeds
        ii. Fertilizers and pesticides
        iii. Other inputs
    g. Can you see a decrease in production cost through collective action

       Information
    h. Is there any kind of technological dissemination

i. Information systems
    i. Production decisions
    ii. Frontline demonstration of good production practices
    iii. Market information

Marketing support

    iv. Is the produce sold by contract obligations
    v. If yes, what are the incentives
    vi. If no, has collective action contributed to better bargaining power
    vii. How has bargaining power increased
    viii. What other market access benefits has collective action brought.

Appendix V

Survey

Primary Producers Survey
Basic Information

Name:
Age:
Educational qualification:
Number of members in Household:
Size of Landholding:
Number of family members working in the land:
Additional income to family (specify)
Cropping Pattern

- Mono
- Multi

Types of crop(s) grown

- Food crops (list)
- Cash Crops (list)

Irrigation facilities

- Rain fed
- Bore well
- Tank irrigation
- Canal irrigation
- Well irrigation

Collective Action

How many years have you been part of this collective action
How did you join the group?

- Self-selection
- Assigned
- Applied and accepted

Why did you join the group?

- Heard about the benefits
- Friends or family was part of the group
- Ideological reasons

What is the size of your group?

ACCESS
Credit

Have you availed any credit arrangement before Collective Action?

- Formal bank loans
- Informal sources

Formal credit

- Name of the Bank
- Principle amount
- Rate of interest
- What is the nature of the collateral

Informal Credit (before)

- Why from an informal source
- Principle amount
- Kind
- Period of loan
- Rate of interest
- What is the nature of the collateral

Do you have any debt?

- Yes – how much
- No

Do you have any savings

- Yes – how much?
- No

<u>Under collective action</u>

How much credit do you get under this collective action?

What is the interest rate?

This is a fair rate

9. Strongly agree
10. Agree
11. Neither agree or disagree
12. Disagree
13. Strongly disagree

Inputs

Do you use HYV – what variety?

- Yes
- No

Where do you source your seeds?

- Accredited sources
- Informal Sources

What is the price of seeds

Fertilizers and Pesticides

- Where do you source them-
- What is the average cost

Nature of other inputs

- Machinery
- Hired labour

Under collective action

Does collective action help in sourcing inputs?

- Yes
- No

What are these inputs?

- seeds
- fertilizers
- pesticides
- water
- electricity
- others

What is the nature of this support

- they provide the inputs at a price
- they put you in touch with a favoured dealer
- they just inform us about the nature of input that needs to be used
- others

What are the major changes brought about in production practices and how has it affected production?

- reduced cost of production
- higher yield
- better access to technology
- better access to credit
- others

The government has helped in bring about better access to inputs

14. Strongly agree

15. Agree
16. Neither agree or disagree
17. Disagree
18. Strongly disagree

Information

What is your main source of information regarding crops, inputs and prices?

- Panchayats
- NGO's
- Agricultural universities
- Krishi Bhavan
- Market middlemen
- No information
- Others

What is the kind of information that you get?

- Information about prices
- Information about good growing practices
- Information about the environment
- Others

Have there been any initiatives to introduce new technology

- Farming technology
- Water management
- Energy saving
- Reduce environmental risks
- Others

Under collective action

There been efforts to bring about essential information that will help in production

19. Strongly agree
20. Agree
21. Neither agree or disagree
22. Disagree
23. Strongly disagree

What kind of information has this been?

- Production practices
- Environment concerns
- Farm management
- Market information

Have you got any training from state or other institutions?

- Yes
- No

If yes what is the nature of this training?

- Production practices
- Marketing practices
- General information about organizing
- The dynamics of collective action

Marketing support

24. Where do you sell your produce? Where did you sell your products
    a. APMC
    b. Middle men at farm gate
    c. Traders
    d. Others
25. Do you think it is a fair price?
    a. Yes
    b. No

- Is the produce sold by contract obligations
    - Yes
    - No

26. If yes, what is the nature of the contract and what are the incentive

<u>Under collective action</u>

27. Has there been any marketing help under collective action?
    a. Yes
    b. No
28. Do you have more control of marketing your produce than before
    a. Strongly agree
    b. Agree
    c. Neither agree or disagree
    d. Disagree
    e. Strongly disagree
29. Do you get a better market price now for your produce
    a. Strongly agree
    b. Agree
    c. Neither agree or disagree

d. Disagree
e. Strongly disagree

30. You have been able to bring down marketing costs
    a. Strongly agree
    b. Agree
    c. Neither agree or disagree
    d. Disagree
    e. Strongly disagree
31. What are the changes in marketing prices
    a. Transportation costs
    b. Packaging
    c. Storage
    d. Other opportunity costs

32. What are the changes in marketing practices

Organizational Aspects of Collective Action

Decision Structure

33. How are decisions made in the group
    a. Meeting to develop general consensus
    b. Voting
    c. Some make the decisions and others follow
34. What is required for one to join this initiative

35. What is the main motivation to stay in the group?
    a. Friends and neighbours
    b. Believe in the cause
    c. Economic benefits
    d. Ideology
    e. Other motivations
36. How do you negotiate with the support organization
    a. voting
    b. Appointed bearers bargain
37. Do you have any grievances?
    a. Yes
    b. No

38. Organizing has brought about benefits
    a. Strongly agree
    b. Agree
    c. Neither agree or disagree
    d. Disagree
    e. Strongly disagree

Social Aspects of Collective Action

Group Dynamics

39. I know most people in the group personally
    a. Strongly agree
    b. Agree
    c. Neither agree or disagree
    d. Disagree
    e. Strongly disagree
40. Are most people from your social group
    a. Yes
    b. No
41. If yes
    a. Same caste
    b. Same religion
    c. Same linguistic group
42. People from your economic group
    a. Strongly agree
    b. Agree
    c. Neither agree or disagree
    d. Disagree
    e. Strongly disagree
43. It makes a difference that people of different backgrounds
    i. Strongly agree
    ii. Agree
    iii. Neither agree or disagree
    iv. Disagree
    v. Strongly disagree
    vi. If yes, what do you think the difference is?
44. Do you have preferences when it comes to who should be in the group
    i. Yes
    ii. No

45. If yes what are your preferences

Production Data

46. What is your total yield

47. Price of yield

48. Total input cost
    a. Seeds
    b. Fertilizers
    c. Pesticides
    d. Labour
49. Marketing cost
    a. Packaging
    b. Transportation
50. Other costs

51. What was you seasonal Yield before collective action

I will be part of this initiative in 3 years

a. Strongly agree
b. Agree
c. Neither agree or disagree
d. Disagree
e. Strongly disagree

Appendix VI

Code List

Code List – codes and sub-codes

Origins and Emergence

- Region- REG
- Impetus of origin – year and reason: IMPETUS
- Institutional conditions: INST CON
- Role of the state: STATE
- Role of civil society or civil society creation: CIVSOC
- Geographical factors – GEOG
- History and historical influence – HIST

Features of the organisation- Structural factors |

- Nature of collective action: NAT_CA
- Type of collective goods produced: CA_GOODS
- Structure of the groups –philosophy of groups: GRP_STR
- Distribution of goods: DISTRI
- Ideological influence: IDEO
- Interest heterogeneity: INT_HETERO
- Organisational advantage: ORG_ADV
- Collaboration with government- COLL_GOVT
- Collaboration with Corporate- COLL_CORP
- Potential to Evolve: EVOLVE

Institutional feature of collective action- Social Factors

- Social structure of the groups: SOC_STR
- Caste and class dynamics : CC_DYN
- Previous experience of organising : ORG_EXP
- Social capital : SOC_CAP
- Mechanisms of cohesion : COH
- Social advantages: SOC_ADV
- Freeriding problems : FREE_RIDE
- Privileged Groups : PREV_GR

Resource structures and benefits- economic factors

- Levels of asset fixity: ASSET_FIX

- Information access : INFO_ACCESS
- Technology : TECH
- Credit and input provision : CRE AND INP
- Resource heterogeneity : REC_HETERO
- Marketing practices and value creation : MKT_VALUE
- Perceived economic advantages : ECO_ADV

Appendix VII

In order for institutional arrangements of collective action such as POFs to be effective, they should be able to increase returns on investment in small-scale production. Increase returns to investment or profit is a proxy or surplus creation. The increased return on investment or changes in profit is potentially the outcome of better price realisation and lower marketing costs through changes in the upstream markets, gains from lower costs of production and increased yields through improved access to credit, inputs and extension services. Based on the literature review done in chapter three, This appendix first specifies the relation between unit cost of production and marketing and size of landholdings to depict the problem of viability of small producers. It then depicts the hypothetical changes collective action can bring about on the returns to agricultural production, increasing the economic viability of small producers. Based on this, the profit function to determine the changes brought about through collective action is specified.

Figure (a) depicts the relationship between size of land holding (x axis) and the unit cost of production and marketing and unit price realised in the market (y axis). T_m depicts the cost of marketing and transaction through monopsonistic intermediaries, who purchase the produce at the village level directly from the farmer. T_o depicts the cost of transaction by the primary producer if he wishes to market the produce directly in existing market conditions. The role of the intermediary is relevant in the rural economy because the cost of marketing, when done by the primary producers themselves is still higher due to high search and logistic costs. For average farmers when quantity of produce is small, the price offered at the farm gate is a non-competitive price due to the local monopsony held by the intermediary. To increase margins when selling in the open market, the intermediary will squeeze the lowest price possible for the produce. The real costs faced by the farmer (T_m) due to scale effects and local monopsony of traders, which is severe for the small farmer, since his own cost of marketing (T_o) is much higher than what the existing system would offer him. On the other hand the gap between T_o and T_m, for the farmer with larger landholding is small and therefore, faces far less monopsonistic power.

Figure (a) Price realisation in the absence of collective action

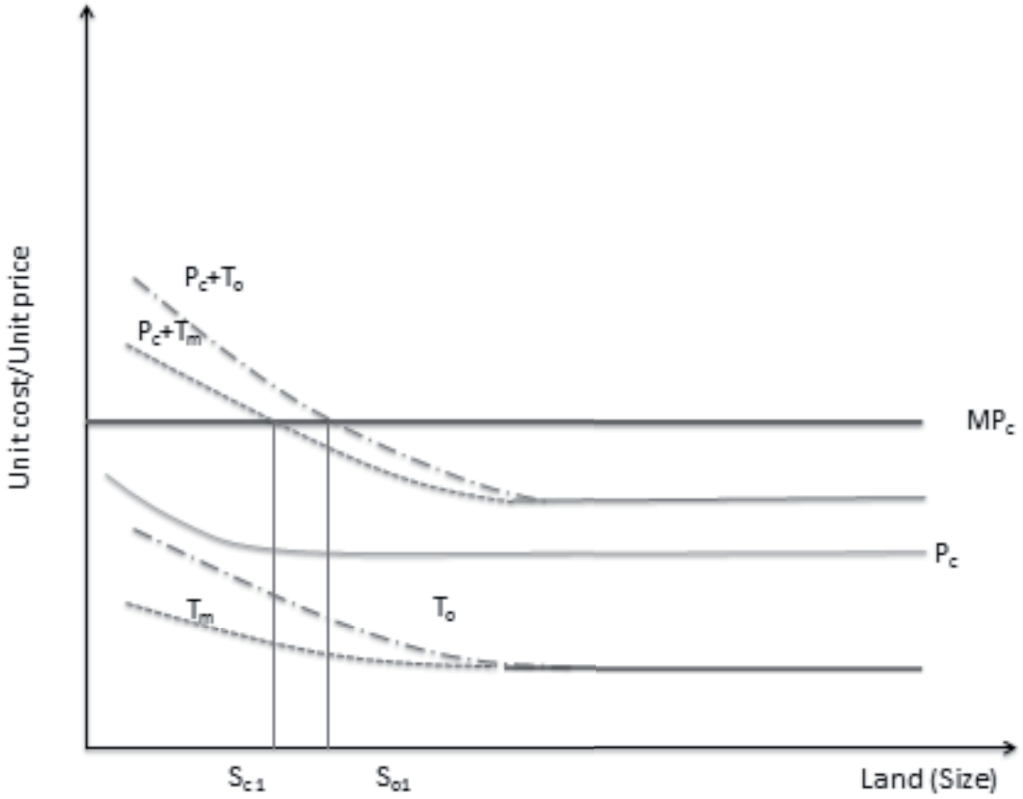
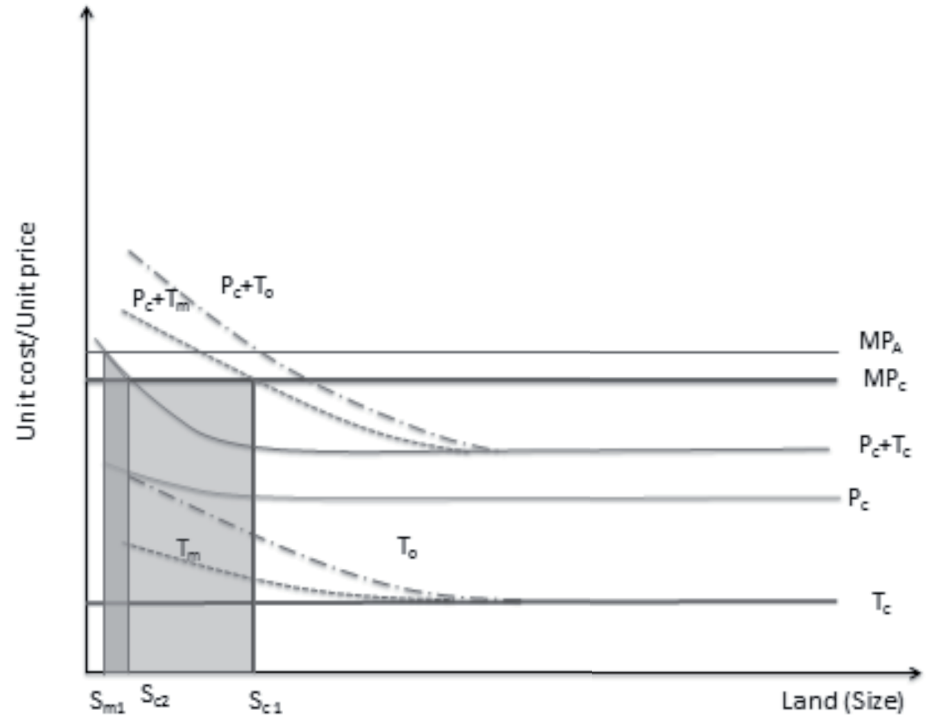


Figure (b) Cost responses to collective action



P_c is the production cost, which is theoretically scale neutral (Binswanger and Rosenzweig 1986), but shows a higher cost at lower sizes of landholdings due to poor technical knowledge, information asymmetry and lower access to resources like irrigation, credit and extension services. $MP_{c,}$ the market price realised for the produce, is constant across scale. P_c+T_m and P_c+T_o depicts the total cost incurred to producer depending on the channel of marketing taken. S_{c1} and S_{o1} are the sizes of land holding at which the producer becomes profitable (generates profit) under: 1) the assumption that the competitive cost of transactions are accessible by all farmers, 2) the realistic situation that smaller farmers face monopsony power of the trading system and 3) the assumption that every farmers makes his own marketing arrangements.

The three responses of collective action brings about reduction in marketing costs T_m and lowering of production costs P_c and increase of price realised MP_c. Figure (b) depicts the price realised as a result of the three responses to collective action.T_c depicts the cost of marketing under market conditions where goods are purchased at farm gate bypassing the markets and intermediaries. This presumes that competitive trading sector is able to offer farm gate prices for outputs that are in keeping with central place (*mandi*) prices. This when efficient should be scale neutral on a unit basis to all farmers barely rising as output delivered falls to very small quantities. Ideal market condition here is where the transaction costs are minimised through better marketing practices like proper weighing of farm produces, minimised logistic pricing and absence of moral hazard problems like ambiguous quality determination.

Since farmers under collective action may be able to sell according to contract with a buyer or aggregate, schedule efficient transportation and coordinate among themselves to increase access at the efficient cost, T_c is the asymptote unit cost of the efficient trading system. Production cost P_c flattens in figure (b) as a result of lower costs of production from adoption of extension services, access to quality inputs and access to credit on reasonable terms. Under collective action P_c+T_c is the overall cost and S_{c2} is the land holding size under cooperation at which returns are higher than production cost. In figure (b) cost improvements brought about through better production and market practices through collective action makes land holding sizes between S_{c1} and S_{c1} profitable, which were not the case earlier.

The added effect of the demand side due to collective action is also depicted in figure (b) Produce at the market can bring better prices if the quality of the produce can be improved through better growing, pre- harvest and post-harvest practices, certification and increased yield. Contract with buyers can also help producers get a higher price MP_A at the marketing stage. In a condition where MP_A is realised, the potentially profitable size shifts from S_{c1} to S_{m1} without monopolistic intermediary marketing, making small farms more profitable. than under conditions where the changes were just supply side responses. Thus, the added impact is that farms earlier unprofitable between S_{c2} and S_{m1} have now additionally become profitable.

Hypothetically, collective action is important in the Indian agricultural sector where access failures and transaction failures make small and marginal agricultural production unviable. Transaction failures lead to high marketing and transaction costs, while access failures lead to high production costs, eroding the levels of surplus (if any) of small producers. The supply side response of collective action should help access credit and provide support to reduce production costs and increase yields. This needs to be done by making region specific information, research and technology available to producers, reducing marketing and transaction costs by enabling market contracts and ensuring good marketing practices. The demand side responses brought about by collective action is through better price realisation for produce sold by its members. This may be enabled through supply chain integration and advance contracts that fix prices of commodities produced.

Computing the profit function

The preliminary assumption of this study is that POFs are collective actions that are formed to increase the economic viability of its members. Economic viability would mean that there is a creation of marketable surplus in agricultural production. Surplus creation is indistinguishable from its proxies, which are returns to investments, profit and total returns (Harriss-White, 1995). Increased return to investment or profit essentially are changes in cost of cultivation, changes in yields, changes in price of the commodity sold and also reduced transaction costs during the marketing process. This can be depicted in the following way

$$\pi = P.Q - (C+T_c)\ Q$$

Where π is the profit function, P is the price, Q the quantity, C the cost of production and T_c the cost of transaction. The change in profit or $\delta\pi$ resulting from collective action can be depicted in the following way

$$\delta\pi = \delta P.Q + \delta Q.P - \delta C.Q - \delta T_c.Q - C.\delta Q - T_c.\delta Q$$

Where $\delta P.Q$ is the price increase response, $\delta Tc.Q$ is the transaction cost/marketing cost reduction response, $\delta Q.(P-C-T_c)$ is the quantity (yield) response due to improved farm management, resulting in intrinsic rise in production efficiency. $\delta C.Q$ is the gain due to lower cost of production, which could arise out of cooperation. The profit function will help evaluate the marginal benefits individuals in POF may acquire through provisions such as better access, better information, technology adoption and higher bargaining power that are brought about through institutional arrangements of collective action.

Economic Changes of collective action

Production effeciency responses (δC.Q)	**Marketing cost reduction responses (δTc.Q)**	**Price Increase responses (δP.Q)**
- Institutional Credit and reduced interest payment - Quality Input Access - Improvement in production practices through information dissemination and extension services	- Farm gate purchase of produce reducing search cost - Proper weighing - Joint transportation - Grade based transaction reducing ambiguous pricing	- Premium price realisation in the case of certified organic production - Benefits of delayed marketing - Potential of increased returns through value addition.

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