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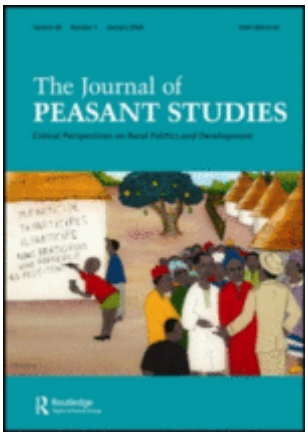

Does Group Farming Empower Rural Women? Lessons from India's experiments

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DOES GROUP FARMING EMPOWER RURAL WOMEN?

Lessons from India's Experiments

1. Introduction

In most of the developing world, rural women, to much greater extent than men, remain embedded in the informal sector, especially in farming. In India, for example, only 6.5 per cent of women workers are in the formal sector, and among *rural* workers 75 per cent of the women relative to 59 per cent of men still depend mainly on agriculture (NSSO 2014).[1] This dependence is unlikely to decline substantially in the near future, given limited prospects of non-farm job growth in general and jobs for women in particular (Chand, Srivastava and Singh 2017).[2] In fact, rather little attention has been paid to women's employment, even less to their skill training; and the limited training provided is mostly in non-agricultural skills (Mehrotra, Gandhi and Sahoo 2013; Fletcher, Pande and Moore 2018; Prillaman and Moore 2016).

Indeed, government efforts to economically empower rural women in India, and more generally in South Asia, have largely neglected farming — the one occupation in which the majority of them are most experienced.[3] Given this gap, two state-level experiments in India, begun in the early 2000s, stand out, not only because they strove to enhance women's livelihoods within agriculture itself, but also because of the innovative institutional form by which they sought to do so, namely group farming.

These initiatives – one in Telangana (then in undivided Andhra Pradesh), the other in Kerala – encouraged rural women to lease in land collectively, pool their labour and capital,

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[1] Based on 'usual status' criteria for the 2011-12 NSSO round.

[2] For largely ungendered assessments of non-farm job prospects in India, see also Lanjlouw and Murgai (2009), and Himanshu et al. (2013).

[3] Among non-governmental organisations (NGOs), there has been greater focus on women's farm-related activities. But, even here, rather few cover crop production, concentrating more on training and support for livestock rearing, poultry, sericulture, and kitchen gardens. Typically, women carry out these activities individually, although they often belong to Self-Help Groups (SHGs)—mutual savings-cum-credit groups—which may take up joint input procurement and marketing, and have bank linkages (Tanka 2012). The NGO, PRADAN, which works across seven Indian states, is an important example of an SHG-led approach to promoting rural women's livelihoods. However, for crop cultivation, carried out within family farms, this approach has limitations and could prove ineffective (Raghunathan, Kannan and Quisumbing 2018; see also footnote 19).

and cultivate jointly. The initiatives (which grew into substantial programmes) were innovative not only in their promoting group farming, but also in their recognition of women as farm managers outside the domain of family farms under which most cultivation is done globally, and in which women are typically unpaid workers with limited autonomy.[4] This recognition is also important because over 35 per cent of all agricultural workers in India are women (NSSO 2014), and their proportions are likely to grow as more men than women seek non-farm jobs. The welfare of rural families, farm productivity, as well as the country's agricultural growth, will thus depend in notable extent on the performance of women farmers.

Women's ability to deliver on production, however, is severely curtailed by resource constraints. Historically embedded social norms and perceptions and institutional biases restrict their access to land and capital intensive inputs such as irrigation and equipment, apart from credit, technology, and other essentials (FAO 2011; World Bank 2009; Agarwal 2014a). They also have limited bargaining power with state institutions and markets. Government and civil society efforts to overcome these problems have not only been inadequate, they have focused largely on women located in family farms (FAO 2011, World Bank 2014), rather than exploring group-based alternatives outside the family.

Could group farming provide a way forward, by helping women overcome their resource constraints, play leadership roles, and enhance their economic well-being? Could it also empower them socially and politically? And under what conditions might it do so effectively?

Empowerment ('power *to*') is a complex idea which has been used variously by researchers and activists globally, often without providing a precise definition, although there have also been some attempts at defining it (see, e.g. Agarwal 1994: 39; Bookman and Morgan 1988: 4; Kabeer: 2005:13-16). There is general agreement, however, that empowerment is an ongoing *process*, rather than an achieved state, and one in which women need to be active participants. For our purpose, we may thus see empowerment as a process that enhances the ability of disadvantaged (`powerless') individuals or groups to challenge their unequal economic, social and political positions and advance towards parity. In the case of women, this would imply gender parity. And for economically and socially disadvantaged women, interlinked progress towards class and social (e.g. caste/race) parity would also be key to tackling intersecting inequalities.

4 Prior to this, the only notable women's group farming experiment in India appears to have been that of the Deccan Development Society, working in the Medak district of Telangana.

In addition, it is useful to evoke Nancy Fraser's (1997, 2004) framework of three elements of social justice (both separate and interrelated): redistribution (the economic sphere), recognition (the socio-cultural sphere), and representation (the political sphere). Within this framing we can ask: can group farming empower disadvantaged women so that they can move towards gender parity in all three spheres, tracing the trajectory from the economic sphere to the other two.

To date, barring my own recent work, there has been no systematic study of the impact of group farming on women in developing countries, based on carefully collected quantitative and qualitative data. Nor have the particular questions posed in this paper received attention.

The paper addresses these questions, based on my primary surveys in both states during 2012-14, for a sample of group and individual farmers. Section 2 provides a brief outline of the global history of group farming, and then spells out the conceptual basis for expecting group farms to economically benefit small farmers in general and women farmers in particular. It also outlines why group farming and women's associated interactions in the economic sphere could, in turn, empower women socially and politically. Section 3 traces the genesis and institutional structure of group farming in each state. Sector 4 describes the data and assessment of empowerment, and Section 5 presents the sample farm characteristics. Sections 6 and 7 then focus on women's economic empowerment, and Section 8 on their social and political empowerment. The concluding Section 9 reflects on the lessons learnt and the potential for replicating the initiatives.

2. Historical and Conceptual Underpinnings

History

Historically, group farming has been tried in many countries and contexts. Although popularly associated with coercive socialist collectivisation and its ill effects (Nove 1969; Lin 1990), in fact there have been several subsequent initiatives. This includes the efforts by governments in post-colonial developing countries to promote cooperative farming during the 1950s–1970s, as part of pro-poor agrarian reform (for overviews, see UNRISD 1975; Agarwal 2010a; Ghose 1983); the ideational push for alternative farming models by young farmers in France in the same period (Agarwal and Dorin 2018); the 1990s family

cooperatives which emerged after de-collectivisation in former socialist regimes;5 and, most recently, the women's group farming programmes in India, which are the subject of this paper.

The forms that group farming has taken historically are also diverse, especially in terms of voluntariness, farm size, and attention to gender equality. Socialist collectives forcibly converted peasant farmers into farm workers on enormous mechanized farms. For example, by 1959, USSR had an estimated 59,000 collective farms, each involving an average of 320 households and 5400 ha of land (Goyal 1966:114). China, by the end of 1958, had set up some 25,000 communes, each with an average of 5000 households (Lei 2015). The early experiments in non-socialist regimes also created farms of large size, usually top-down. In the mid-1970s, Ethiopia (strongly influenced by socialist examples) created within a year some 20,000 peasant associations with 5 million members, each collective cultivating 800 ha on average (Alula and Kiros 1982). In Ecuador, a collective farm covered several thousand hectares in the 1960s (Borda 1971). Tanzania's Ujamaa experiment drew the entire village into the cooperative programme, notwithstanding class heterogeneity, leading to many village committees being controlled by rich farmers (Ibhawoh and Dbua 2003; Apthorpe 1972). [6] And India's 1950s-60s efforts at cooperative farming, although limited in scope,[7] were also largely top-down, and created medium to large farms (Shivamaggi 1958; Goyal 1966). Variously, large size, lack of voluntariness and top-down management were substantial negatives in these initiatives. They had mixed productivity outcomes, and most did not sustain.

In sharp contrast to the above, the *post*-collectivisation groups formed in former socialist countries in the 1990s were constituted of relatives, friends and neighbours who chose to pool their limited resources to overcome land and machine scarcity. They were also relatively small in area and number of associates. Kyrgyzstan's group farms were on average 16.2 ha in area and typically constituted by 4-15 families; Romania's were on average 41.2 ha with 3-20 households; while those in East Germany and Nicaragua, although larger (they included pasture land), still had only a small number of associates (see Agarwal 2010 for

[5] See, e.g. Sabates-Wheeler and Childress (2004) for Kyrgyzstan, Sabates-Wheeler (2002) for Romania, Mathijs and Swinnen (2001) for East Germany, and Ruben and Lerman (2005) for Nicaragua.
[6] Israel's kibbutz—an older, more complex institution, based on both economic cooperation and social experimentation—also covered entire communities (Gavron 2000).
[7] For example, Goyal (1966: 122) found only 111 joint farms in six Punjab districts in 1958.

details). Outside the socialist context, France's group farms are again constituted of a few (2 to 10), typically male, associates (Agarwal and Dorin 2018).

In relation to gender, all forms of earlier collective ventures (socialist and non-socialist) were highly unequal. In the USSR, women in collective farms were concentrated in manual jobs that were designated less skilled and carried lower pay. Only 0.8% of tractor drivers and 1.4% of machine handlers were female, and 85% of women employees compared to 66% of male workers were in jobs labelled 'unskilled' (Swain 1985: 99). In China and Vietnam, again, women earned less work points than men, even when doing the harder tasks (Swain 1985; Kerkvliet 2005). The collectivities formed in non-socialist regimes had a different type of gender bias. Here, typically, the family was the participating unit, and women usually remained embedded in traditional social roles and positions of disempowerment.

Against this background, the Telangana and Kerala programmes, with their focus on women-only groups, are a substantial departure from all previous large-scale efforts at group farming, creating for women the potential for substantial gain.

Conceptual benefits

Conceptually, we would expect resource pooling and joint cultivation on a voluntary basis to bring economic benefits to small farmers in general, but to women farmers in particular. Consider first the general case and then the gender-specific aspects. The most important potential benefits relate to land and labour. A group approach can help increase farm size to economically viable scales through pooling owned or leased land, using the greater financial resources at a group's command. This, in itself, would be an important gain. Globally 84 per cent of farms across 111 countries are under 2 ha in size (FAO 2014). In India, this percentage is 86.2, with the proportion of farms under 1 ha rising since 1995-96 (Table 1).[8] In their all-India assessment, Foster and Rosenzweig (2011) found that an increase in size from very small farms up to 8 ha significantly increased per hectare profits, the rise being especially notable with size increases up to 2 ha.

< Table 1 near here>

8 In Kerala and Telangana, the states of this study, 96.7 and 64.6 per cent of farms respectively are under 1 ha, relative to 68.5 per cent for all India.

Similarly, groups have at their command a greater pool of labour, which can help overcome peak labour shortages and reduce hired labour costs. Labour sharing also allows temporarily absent members to be replaced easily, without affecting the timeliness of operations. Of course the classic problem of free riding, such as work shirking, long emphasized in economic theory (e.g. Olsen 1965) would need tackling. But where people know each other, it is easier to ensure compliance and enforce mechanisms for dealing with absenteeism (Baland and Platteau 1996).

In addition, groups would financially be better placed than individuals to invest in capital intensive inputs such as irrigation equipment; undertake land improvement; experiment with risk-prone higher value crops with larger payoffs; spread losses among a greater number; and invest in crop insurance. They could also better deliver on contracts, and tap into a greater diversity of skills, knowledge and managerial experience than found in one person or family (see also Agarwal 2010). Moreover, groups are more likely to get access to government technical knowhow, since it is easier to deliver to groups than to individuals.

For women farmers, each of these gains is likely to be larger, and forming groups can also bring gender-specific benefits. To begin with, since few women themselves own land (Agarwal 2018a; Doss et al. 2015) or have adequate financial means, forming groups would be the most conducive (and for some the only) way of accessing land. Working in groups they could also negotiate more effectively in land markets. Similarly, pooling financial resources places them in a better position to invest in irrigation and machine tools, given their lower ability than men to draw on family resources (FAO 2011). The advantage of labour pooling would again be greater for women, since they are less able to command family labour (FAO 2011). In fact, female household heads sometimes forgo cultivating altogether due to the difficulty and expense of hiring workers to supplement family labour (author's survey). The benefits of skill pooling and managerial experience would also matter more for women, given their limited access to training or opportunities to acquire management experience. In general, a collective can enhance women's bargaining power and help overcome existing gender biases in access to government agencies that provide credit, technical information, training, technology, and marketing outlets.

Most importantly, groups can help women overcome the social restrictions they face on their mobility and public interactions in many cultures. When present in a critical mass, women are found significantly more likely to attend public forums, express their views, and take up leadership positions (Agarwal 2010b). In turn, this can enhance their effectiveness in dealing with public agencies and markets.

Moreover, unlike African farming systems where spouses often cultivate separate plots (FAO 2011), in Asia families normally farm together. Here women's contributions are difficult to separate from those of others, and tend to be rendered invisible. Women also get little chance of being farm managers or exercising leadership within male-headed households. Even with male outmigration, the migrant men or older family members can continue to exercise considerable decision-making power (Jetley 1987; Desai and Banerji 2008). As a result, women are seldom recognised as farmers in their own right by communities and governments. Farming in groups, outside the domain of families, can change these perceptions.

Groups can be constituted entirely by leasing in land, or pooling the members' own land, or a mix of both. They can be single gender, mixed gender, or a collective of small family farms. The noted economic benefits of group formation could potentially accrue in all cases, but in different degree. Lease-dependent groups face insecurity of tenure and higher transaction costs in finding land. In a collective of family farms, women would remain family helpers with limited autonomy. Constituting all-women groups could give women control over production decisions, a greater chance to enhance their capabilities, and an independent identity as farmers. But since rather few women own land, they may have few alternatives to the land-lease model, with its attendant constraints. These diverse aspects can play out in the economic outcomes.

Economic empowerment can, in turn, lead to social empowerment, although some attribution issues need consideration. It could be argued, for instance, that simply being part of an organized group can be socially empowering, even without economic cooperation. However, there is substantial evidence that women's economic empowerment increases both the respect they receive from spouses and the bargaining power they command within families and communities, if they are seen as contributing visibly to family incomes (Sen 1990; Agarwal 1997). In addition, group farming can familiarize women with a wider range of institutions (such as banks, agricultural extension agencies, input providers, and markets) than they are likely to encounter if engaged only in interventions for social change.

Political empowerment is similarly complex. But again women farming in groups would be better placed to demonstrate their capabilities and so overcome negative stereotypes about their ability to hold public office, just as people's negative perceptions about women heads of village councils are found to decline with time, as communities are exposed to them as leaders (Beaman et al. 2008). The wider social contacts and self-confidence women build

when dealing with public institutions as farmers, and not only as members of a social group, would also serve them well when seeking public office.

How do these potential benefits play out in practice? The mentioned programmes in two Indian states provide a unique opportunity to test whether group farming can indeed be a means to empower rural women, especially but not only in economic terms. Moreover, since the two states differ notably in their approach to implementation, we can also examine which approach is more effective, and why. For instance, although both states focus on disadvantaged rural women, they differ in their governance structures, the extent of government and civil society support, group composition and size, and so on, as described further below. These differences can affect the performance and sustainability of the initiatives. Identifying the strengths and weaknesses of the two approaches, and the lessons learnt from each state, individually and comparatively, would also help assess whether and in what ways they could be replicated elsewhere.

3. Genesis and Structure

The group farming project in undivided Andhra Pradesh was launched in 2001 by the United Nations Development Programme (UNDP) in collaboration with the Government of India (GoI), with a five-year framework of support. Although UNDP initially supported three local agencies, only the Andhra Pradesh Mahila Samatha Society (APMSS) systematically promoted collective farming by women on a notable scale, across five districts of what is now Telangana state.

APMSS, a quasi-NGO, was established in 1993 to promote women's empowerment through education under the Government of India's Mahila Samakhya programme (Gulati et al. 2004). For this purpose, it set up sanghas or women's collectives (one per village) of socially and economically disadvantaged women, starting with two districts and expanding to 14 in 2012–13. The village sanghas were federated at the district level. The UNDP–GoI group farming initiative—termed as the Samatha Dharani project—was built on this pre-existing sangha structure. For the project, APMSS selected 500 villages with long-standing sanghas and well-working federations.

Typically, all or most sangha members in the project villages joined a Samatha Dharani Group (SDG); hence there was little self-selection by individual women. Each SDG received a seed grant of Rs. 35,000, agricultural implements, training and other support, and

were taken on exposure visits to other states. Women leased land from within the group and/or from local landowners, and many worked on their family farms as well. Once UNDP funding ended in 2005, government support for the project also ceased, although at least half of the 500 original groups continued to farm, overseen by the sangha federations and APMSS.

Kerala's group farming project also began in the 2000s. The farms were constituted of women who were part of neighbourhood savings-and-credit groups, located within a multi-level structure of governance. This governance structure — conceptualized as resting on three pillars — was carefully crafted after intensive discussion among senior officials from the State Planning Board, Kerala's Ministry of Rural Development, and the National Bank for Agriculture and Rural Development (NABARD).

The first pillar is the Kudumbashree Mission (the State Poverty Eradication Mission of the Government of Kerala), launched in 1998 to eliminate poverty and empower women (henceforth called the K. Mission). The second pillar is the Kudumbashree Network (or K-network)—a three-level community network, with neighbourhood groups (NHGs) at the village level, Area Development Societies (ADSs) at the ward level, and Community Development Societies (CDSs) at the gram panchayat (village council) level. Each CDS (with its interlinked ADSs and NHGs) is registered as an autonomous body with elected office bearers. This shields it from direct government intervention, while giving it negotiating power with the state government. In turn, the K. Network mediates with a third pillar – the Panchayati Raj Institutions (PRIs) of local government.[9] This governance structure is a notable feature of the Kerala programme and a key contributor to its performance.

Initially, the K. Mission and K. Network focused on other types of micro-enterprises. But as reports surfaced of village women experimenting with collective farming by leasing fallow land, the availability of uncultivated private land with male out-migration, and the government's desire to revive agriculture, women's group farming was promoted on a systematic basis, especially from 2010.[10] The groups have to register with the CDS, open bank accounts, elect office bearers, and link up with bank credit under the Joint Liability Group (JLG) scheme of NABARD (K. Mission 2015a). By 2011, group farming had become the second most important programme of the K. Mission, accounting for 12 per cent of its

[9] This term covers all three tiers of India's system of local self-government, namely the village, block and district levels.

[10] Based on the author's interviews in 2015–2016 with those who initiated or governed the Kudumbashree programme in the early years; see also K. Mission (2006).

total expenditure.[11] It now covers all 14 of Kerala's districts, and by official figures had 65,000 JLGs involving some 288,000 women cultivators in 2017.

Structurally, the JLGs are embedded in the mentioned neighbourhood groups (NHGs), which begin as savings-cum-credit groups constituted of economically underprivileged women, but also serve as units of micro-planning.[12] JLG members have to be NHG members first or belong to families with an NHG member. While not all NHG members take up group farming (hence there is some self-selection), on important variables such as primary schooling, economic status, and access to credit there is little systematic difference between NHG members who constitute JLGs and those who don't (Kannan and Raveendran 2017; Agarwal 2018b).

JLGs are supposed to receive support and incentives from the CDS and the K. Mission, including extension information; training in agricultural practices from experts; training for some women as 'master farmers'; crop-specific area incentives (based on crop area); and crop-specific production incentives (depending on crop yields matching or exceeding the state average) (K. Mission 2015b). Each CDS also receives funds to set up farmer facilitation centres and buy small machines for JLG use. In practice there are gaps in implementation.

4. Data and Assessment

The SDGs in Telangana and JLGs in Kerala, alongwith individual farms cultivating 2 ha or less for comparison, were the focus of data collection. Through primary surveys in both states, quantitative and qualitative data were collected during 2012–2014 for 763 farm enterprises in three districts (Medak, Mahbubnagar and Karimnagar) of Telangana, and 250 farm enterprises in two districts (Alappuzha and Thrissur) of Kerala. In Telangana, the individual farms were of two types: non-group farms (NGFs) unconnected to SDG members, and the SDG women's family farms (SWIFs). For selecting NGFs, a census of farmers by farm size was conducted in the 70 study villages, and 7 farmers per village were randomly selected from those operating 2 ha or less.[13] These farms and 3 SWIFs per SDG (also randomly selected) serve as the control group for comparison with the group farms. In

[11] Personal communication, Rahul Krishnan, then thematic anchor for farm livelihoods, K. Mission, Thiruvananthapuram, 2016.
[12] NHGs thus differ from SHGs in their structure, purpose, and reach (see also, Agarwal 2019).
[13] A few were later dropped due to incomplete or unreliable information.

Kerala, the sampled individual farms (JWIFs) were the JLG women's family farms, mostly managed by husbands or sons, again randomly selected from each JLG.

Following an initial baseline, the main data collection involved a weekly recording of every input used and output produced by the sample farms over a year (2012-13), followed by several months of filling data gaps. In addition, one time focus group discussions were conducted separately with group farm members and individual farm representatives, to obtain information on farmer characteristics and farm functioning. These data were supplemented by in-depth interviews in 2015–2016 with the key persons involved in the initiation and/or implementation of the scheme in each state.

Empowerment of women through group farming was assessed as below (Box 1).

Box 1: Assessing empowerment

Forms of empowerment	**Forms of assessment**	
	Telangana	Kerala
Economic	Quantitative: comparison of differences in input use, productivity and profitability between SDGs and (i) individual non-group farmers (NGFs); and (ii) individual family farms of SDG women (SWIFs). Qualitative: capacity enhancement of SDG women	Quantitative: comparison of differences in input use, productivity and profitability between JLGs and individual family farms of JLG women (JWIFs) Qualitative: capacity enhancement of JLG women
Social	Group members' self-perception about the change in their status within families and communities (SDGs for Telangana and JLGs in Kerala)	
Political	Group members (i) standing in local elections; (ii) winning in local elections (SDGs for Telangana and JLGs in Kerala)	

Economic empowerment has been assessed quantitatively by comparing group and individual farms in the same state. For instance, I compare input access, productivity and net returns of SDGs and individual farms (NGFs and SWIFs) in Telangana, and similarly between JLGs and individual farms (JWIFs) in Kerala. In both states, some 95 per cent of the individual farms are male-managed. In addition, qualitatively, women's perceptions of their economic gains and capability enhancement are seen as further indicative of economic empowerment. For assessing social empowerment, I depend on women's self-perceptions about the impact of group farming on their social status within communities and families. Finally, for political empowerment I use available statistics on SDG and JLG women who stood for and won local government elections.

5. Group Characteristics

Telangana's SDGs and Kerala's JLGs differ not only in the institutional structures within which they are embedded but also in their size, and the social background, education and age of group members (Table 2). Telangana's SDGs are large (ranging between 10-54 members, with an average of 22). Their members are mostly Scheduled Caste Hindus; 38 per cent are illiterate; and some 17 per cent are aged 60 or more. Kerala's JLGs, in contrast, range between 3–12 members, with an average of 6; they are more diverse in caste and religion: 80 per cent of the members are Hindus, but most belong to Other Backward Castes (OBCs) or upper castes, and a fair proportion are Christians; 99.5 per cent are literate with two-thirds having completed secondary school or above; and only 9 per cent are 60 or older. In both states 27–30 per cent of the members have at least one relative in the group, which can add to internal trust and cohesion.

< insert Table 2 near here>

Although in both states group members come mostly from landed families (86 per cent in Telangana and 100 per cent in Kerala), only 19 per cent of SDG women compared with 39 per cent of JLG women themselves own any land (Table 3). Some JLG women received the land as dowry, others purchased it themselves, or their husbands bought it in their names or in the names of both spouses. However, the average area owned by the families of group members in Telangana is 0.93 hectares (ha) which is larger than the 0.25 ha owned by the families of JLG members in Kerala. Coming from landowning households, or owning some land themselves helps the Kerala women, but their very small plots can at best provide partial subsistence. They cannot absorb much of women's labour time, leaving considerable scope for group farming. Most also draw on the earnings of family members engaged in non-farm work, or in jobs abroad.

<insert Table 3 near here>

Overall, in Telangana, the SDG composition reflects APMSS's emphasis on constituting women's groups from relatively caste homogenous and economically poor backgrounds, while in Kerala the neighbourhood concept, coupled with less socially segregated villages and a decision by the K. Network to encourage some group heterogeneity, makes the JLGs

more caste and class diverse. The class diversity is, however, within a narrow economic range: none of the women are particularly well-off. The K.Mission's logic for encouraging diversity was that local women's leadership comes not from the poorest but from those just above the poverty line. They also devised a method to overcome social divides:

> *We stipulated that NHG meetings where tea is served would rotate across households—poor and less poor, upper and lower caste. Such practices help ensure that no section captures the group*. (Issac Thomas, author's interview, 2016)[14]

Group heterogeneity can be a contentious issue. Heterogeneity can be economic (e.g., class differences) and/or social (e.g., caste or religious differences), or both. Some may argue that SDGs constituted almost entirely of poor, low-caste women will facilitate cooperation. But being poor and low caste also limits women's social reach, and can restrict their ability to lease good quality land in convenient locations. In Kerala, given their caste and religious heterogeneity and broader economic spectrum, JLGs have more sources for leasing land, and the wider networks of some members can help the entire group. More generally too, complete group homogeneity is not always essential for successful cooperation, and in some contexts a degree of heterogeneity can help (Baland and Platteau 1996, and Marwell and Oliver 1988). This idea is contrary to the primacy often given by civil society groups in South Asia to social and economic homogeneity in group formation.

Group size has implications too. On the one hand, the very large size of most SDGs (10-54 members) can save them hired labour costs, while the small JLGs (those with only 3-4 members) can face labour shortages and high costs of hiring labour. On the other hand, large size could reduce per capita returns and the effectiveness of cooperation (see also Gulati et al. 2004). Consider how these play out in practice.

6. Economic Empowerment: Access to Inputs

Three types of indicators are used here to assess women's economic empowerment: their ability to access inputs, especially land; their productivity and profits relative to individual farms; and capability enhancement.

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14 Notably, even in the highly caste-divided villages of Gujarat, the Self Employed Women's Association found that within a year of forming women's groups, poor women overcame their initial caste-related discord (personal communication, Renana Jhabvala. See also Agarwal 2000).

Land access and farm size

In both states, farm size (net sown area and gross cropped area) is larger among group farms than individual family farms. For instance, group and individual farms (SWIs) respectively have a net sown area of 2.06 ha and 0.92 ha in Telangana, and 0.96 and 0.35 in Kerala. Hence group farms, which are over twice the size of individual farms, have a scale advantage. At the same time they are more tenure insecure since they depend entirely on leased land. The problem is eased somewhat if some group members themselves own land and are willing to lease it to the group. But to expand farm size, access to land from outside the group is also needed.

In Telangana, 71 per cent of SDGs depend entirely on land leased from other SDG members, 26 per cent from other landowners, and 3 per cent from both (see Table 4). Most SDGs complain about not getting good quality land with irrigation and near their homesteads. The caste homogeneity of SDGs is clearly an important barrier. For a start, the SC community owns much less land than OBCs or upper-castes, to whom SC women have limited access.

> *The situation for the SC community in the village is very bad. Most of the OBCs own good quality land, but they are not interested in leasing it to the SC community because they are cultivating it themselves*. (SDG members, Ibrahimabad village, Mahbubnagar, Telangana)

> *Getting land in a single plot in the village is very difficult. That is why our SDG is restricted in the amount it cultivates. Most of the SC community members have less than three acres of land, out of which one or two acres are leased out to their community. The land is dry and of poor quality*. (SDG members, Chowdarpalli village, Mahbubnagar, Telangana)

Also, Telangana's SC communities are often located at a distance from the village. This reduces women's access to land near their own homes that would be easier to cultivate.

< insert Table 4 here>

The fall back is to lease land mainly from group members, rather few of whom, as noted, own any. This restricts women's ability to enlarge farm size, although it has one advantage: SDGs almost always get the land from their members at below market rates. This is partly because landowning members don't view in-group leasing in strictly commercial

terms, since they also gain from their land being cultivated by their SDG, and partly because the owners, if old or widowed, find it difficult to manage the farm alone. Most leases involve cash payments, with 50 per cent paid in advance and the balance after harvest; hence the landowner bears part of the risk of crop failure. In contrast, some 98-99 per cent of individual farmers in the sample own all or most of the land they cultivate.

Kerala's JLGs generally face fewer hurdles in leasing land, although this can vary by region and type of land. Only 13 per cent depend solely on within-group leasing, 56 per cent lease from other landowners, and 30 per cent draw on both. The area leased ranges from a minute 0.09 ha to a decent 4.05 ha, and usually has some irrigation. Hence, with sufficient labour, even a rather small plot can be productive for, say, vegetable farming. Only 11 per cent of the JLGs pay advance rent, but very few get land below market rates and most have oral leases. The two Kerala districts are quite similar in these respects. Individual farmers in the Kerala sample (as in Telangana) cultivate mostly their own land, augmented sometimes by leased land. Hence, individual farms in both states are more land secure than women's groups.

But among group farms, JLGs are less constrained than SDGs. To begin with, they have wider social contacts due to their heterogeneity. Given legal restrictions on leasing, informal networks based on trust and reciprocity are important. It is more difficult for low-caste SDGs in Telangana to build cross-caste networks. Consider some examples on how JLG women draw on their networks:

> *JLG members directly approached the landlord for getting land on lease. One plot of 31 cents belongs to the brother of Krishnamma (JLG member).*[15] *For getting that land, Ms. Krishnamma and Ms Shobana (JLG Secretary) asked the brother. For another 68 cents, Ms Lekha and Ms Shohana directly approached a landlord*. (Thrikartika JLG members, Alappuzha, Kerala)

> *Mr KV Mathew was residing far from this place. He knows Mariyakutty's (a JLG member's) family very well, so he leased the land to our JLG*. (Harithakeralam JLG members, Alappuzha, Kerala)

Coming from somewhat better-off households and given the higher male migration to non-farm jobs in Kerala also helps JLGs, since owners prefer to lease out their land than leave it fallow. Hence, although JLG women (like SDG women) do complain about their land problem, this is usually about plots being too small, of poor quality, and scattered, rather than

[15] 100 cents of land make an acre, and 2.471 acres = 1 hectare.

about getting no land at all. Some 32 per cent lease more than one plot and 6.8 per cent lease four to eight plots.

> *Land is available, but not land with proper irrigation and sunlight… After approaching different people we got 2 acres 38 cents in 8 different plots*. (Harithakam JLG, Alappuzha, Kerala)

> *Yes, there is a problem in getting a single plot of land here, since the villagers are engaged in cultivating their own land.* (Thrikarthika JLG members, Alappuzha, Kerala)

> *It is difficult to get land in single plot because on large plots the landowners are already growing rubber, so even when we get land it is less than 50 cents*. (Aaradhana JLG members, Thrissur, Kerala)

Paddy land, especially in high yield zones, is particularly difficult to get since the owners usually cultivate it themselves. This disadvantages group farms in their paddy yields relative to individual male farmers, as discussed in Section 7.

In many cases, women's groups have to fall back on poor quality fallow land. In Kerala, over 12,600 ha of mostly privately owned fallow land is now leased by JLGs.[16] In Telangana, APMSS gives a figure of 2262 ha of fallow land being cultivated by SDGs across the 500 project villages in 2004. In 51 villages, the SDG women levelled the land, dug contour trenches and farm ponds, erected contour bunds and waste weirs, created rock bunds, built gully controls and repaired water resources to make the land usable (APMSS Annual Report 2004–2005, 73–74). However, even fallow land, if leased from private owners, is at risk of being taken back, despite the group's investment in it, as illustrated below:

> *In the initial years, our SDG leased 2 acres of fallow land from a farmer. It was in poor condition. We made it cultivable with a lot of effort, removing the bushes, levelling it, and cultivated it for a year. We got a good output. But later when the landowner saw the improved land he decided not to lease it to us and began cultivating it himself. So we did not benefit from our investment*. (SDG members, Tirmalagiri village, Mahbubnagar, Telangana).

Hence, while group formation helps women farmers reap the benefits of a larger farm, there are trade-offs due to their high dependence on a land-lease model.

Access to irrigation and machinery

On the second potential advantage of groups, namely improving access to 'lumpy inputs' such as irrigation and machinery, the picture is mixed. Telangana's SDGs constantly

[16] Personal communication in 2016 by Rahul Krishnan, K. Mission, Thiruvananthapuram.

complain about lack of irrigation and erratic rainfall. Large parts of the sample districts are semi-arid. All farmers face this problem, but the women's groups are worse off: only 44 per cent of them have irrigation compared to 50 per cent of NGFs, while in Kerala most JLGs and individual farmers have some irrigation (Table 3), even if not always adequate or assured.

A similar story plays out with machine access and other inputs. Consider this example from Telangana:

> *In the entire village there are only two tractors and everyone needs the tractor in time. The tractor owner is reluctant to plough SDG land and we have to pay several visits to bring him to our land. Moreover, apart from the general hiring price, the tractor driver demands toddy [local liquor] and Rs. 50 extra for breakfast*. (SDG members, Ibrahimbad village, Mahbubnagar)

Also the gendered nature of domestic work imposes differential costs on women and men. As some argue: 'For getting one bag of fertiliser we have to queue in long lines for an entire day, and that is very difficult for women' (Kondapur village, Karimnagar, Telangana).

In Kerala, however, at least paddy growers can seek help from the Padasekara Samitis. These are farmers' associations that lease machines to paddy farmers and help in input procurement and output sales. Rather few women are Samiti members individually, but forming a group has improved their access.

> *It is only after joining the JLG that we became aware of the benefits we can get from the Padasekara Samiti and Krishi Bhavan* [Department of Agriculture]. *Earlier, although we cultivated paddy we did not get help from the Padasekara Samiti for pumping water or getting other machines. Now we are able to access the Samiti even for our own farms*. (Harita JLG members, Alappuzha district, Kerala)

Technical, financial and marketing support

Group formation also improves access to other key elements—agricultural services, technical inputs, training and financial support—but there are vast differences here between Telangana's SDGs and Kerala's JLGs. In the former, even during the five years of the UNDP-GoI project, SDGs were poorly served by government agricultural officials and had to depend on privately hired experts (Menon-Sen 2012, Gulati et al. 2004). Even this support ceased when the project ended. In Kerala, by contrast, technical support and training in agricultural practices are provided on a fairly consistent basis by the K. Mission. And some village women are trained to be 'master farmers' to provide additional technical support to the JLGs.

Our access to Krishi Bhawan, Panchayat and block officials increased after forming a JLG. They are now providing us information without delay. We were not getting support from these organizations before joining the JLG. (Pournami JLG members, Alappuzha, Kerala)

There is no problem in selling crops after our harvesting is done, Supplyco [a government agency] comes and takes the grains after weighing them. So we don't need to store them. (Namna JLG members, Alappuzha, Kerala)

In both states, however, oral leases create hurdles. In Telangana, for instance, many SDGs have no written proof that they are cultivators, while the landowners have the 'pattadar passbook' (record of ownership) and survey numbers of the leased land, allowing them to claim the compensation for crop loss. JLGs, similarly, cannot access government subsidies or crop loss compensation without documents to prove they are cultivators. Many women also find the paperwork and eligibility conditions difficult to navigate, when applying for area and production incentives.

Hence, overall, with the exception of labour, individual male farmers, even when small or marginal in size, are better off than women in security of tenure, irrigation, machinery and other inputs. Forming groups has helped women bridge some of the gender gaps in both states, and especially in Kerala, but they still lack a level playing field.

Access to labour

It is in saving on hired labour costs that group farms in both states have an advantage over individual farms. Especially in Telangana where the groups have many members, the annual hired labour hours per ha are 78 for SDGs relative to 824 and 780, respectively, for the individual farms—NGFs and SWIFs. Accordingly, the group farms spend only Rs. 1644 on average on hired labour relative to Rs. 14403 by NGFs, and seldom face the peak-time labour shortages that individual farmers face. Some quotations from the women are illustrative:

We have many members in our group, so there is no need to hire labour. This way our labour costs are reduced and the work is done well. Individual farms have to hire labour and they face problems in the peak season, so their work can get delayed and this can affect crop yields. (SDG members, Annasagar village, Medak, Telangana)

We do not face a labour problem since all our members work, whereas individuals have to hire labour, and if labour is not available in peak seasons they have no options. (SDG members, Gajwada village, Medak, Telangana)

Kerala presents a more mixed picture. Here none of the groups is very large. Thus very small JLGs of say 3-4 members still have to spend a fair amount on hiring labour, but larger JLGs do save on labour costs.

The labour advantage of most group farms is also apparent in the figures on purchased inputs (Table 5). In individual farms, in both states, some 37-40 per cent of total expenses on purchased inputs is for hired labour, compared to only 6 per cent in Telangana's group farms and 27 per cent in Kerala's JLGs. The main expense borne by Telangana's groups is on leasing land, followed by fertilizers plus manure, the latter also being an important expense among Kerala's JLGs.

< insert Tables 5 near here>

Tackling absenteeism

Of course labour sharing can create potential conflicts among members – a key challenge in group farming. Groups need to ensure equity of workloads and timely completion of operations. None keep written records of contributions, but most have mechanisms for tackling absences.

In Telangana, in 57 per cent of the reported cases in 2013, the absentee woman provided a substitute, who is usually the daughter-in-law, with husbands, sons, daughters and even grandchildren pitching in, if needed (Table 6). Those who could not find substitutes paid a fine equal to the prevailing market wage, or contributed additional time later. Absences due to a short illness were not penalized; nor were old founding members, whose experience and advice were valued in lieu of their labour contribution. In Kerala, labour replacement was typically by daughters or sons, and some 14 per cent of the JLGs mentioned paying a fine or hiring someone to replace them. Those absent for several months forfeited their share of the output or profit, something not reported in Telangana.

<Table 6 near here>

Since women know each other, live in the same neighbourhood, and many are related, it is easier to enforce accountability for absenteeism. But equitable distribution of work loads among those present is more difficult to enforce, if the group is large. Although there is no formal monitoring, both states form task-specific sub-groups and rotate the work among these subgroups across the week. This system also frees the women's time for other wage work to

supplement their family income, and appears to work reasonably well, since almost none reported any major dispute over work sharing.

Moreover, we may expect women to be more cooperative than men in rural settings where their everyday interdependence and need for mutual support tends to be high. This can propel cooperation even with limited economic payoffs (Agarwal 2000).

7. Economic Empowerment: Output, Net Returns, other Gains

Access to inputs is but one element of economic empowerment. Now consider the second element, namely outputs and profits of group farms relative to individual small farms in their state.

Land use and cropping patterns

Given difficulties in leasing land, it is not surprising that the women's groups tend to use their land more intensively. In Telangana, 43 per cent of the group farms relative to only 34 and 30 per cent of individual farmers (NGFs and SWIFs) cultivated their land in both the *kharif* and *rabi* seasons (see Table 4 above).[17] In Kerala, 77 per cent of the JLGs relative to 74 per cent of individual farmers cultivated in both seasons, taking into account annual or perennial crops, such as bananas, rubber and coconuts.

In Telangana, the SDGs grew mainly foodgrains—paddy, maize and pulses—due to APMSS's strong emphasis that SDGs should grow foodgrains for household food security. Very few grew cotton, the main cash crop favoured by the individual farmers. Several groups that had dropped out of group farming cited this as the main reason for doing so, saying it was difficult to get good yields with foodcrops without irrigation, and, if allowed to, they would have preferred a commercial crop such as cotton, which gives higher returns.

> *We want more profits from agriculture. The MS (NGO) staff restricted us to foodcrops. Because there were no rains for a third year running we only cultivated pulses in two acres, but got no yield. Then we decided to do individual farming with cotton, which allows us to get a profit even when rains are scarce. All of us have taken land on lease and are cultivating cotton now* (former SDG members, Lakshmindevipalli village, Karimnagar, Telangana).

[17] India has two major crop seasons: *kharif* (broadly July to October) and *rabi* (broadly October to March/April). *Kharif* crops largely depend on the monsoon rains, while *Rabi* crops need irrigation to grow well.

This challenges a commonly-held view among practitioners that women farmers would prefer to (or should) produce foodgrains for food security.

Kerala has more diverse cropping patterns. The K. Mission does not direct crop choices but provides training in new crops. Even in Alappuzha district—a major paddy-growing area—not all grow paddy; many also grow vegetables and mixed crops. The Thrissur JLGs grow banana and a variety of vegetables for the market, along with tubers. Cropping patterns, in turn, make a key difference to farm production and profits, as discussed below.

Yields and productivity

Table 6 compares Telangana's group farms with individual farms in terms of their total annual value of output per hectare of gross cropped area (GCA), as well as yields of all *kharif* foodgrains and *kharif* cotton alone.

NGFs (the non-group farms) outperform group farms in productivity, both in all crops grown and in *kharif* foodgrains, but not in *kharif* cotton where the differences are statistically insignificant. SWIFs (the sanga women's family farms) also outperform group farms in their annual crop output (the differences are statistically significant), but not in *kharif* foodgrains alone, or cotton alone. Indeed, overall, SWIFs fall in-between NGFs and SDGs: they perform less well than NGFs in foodgrains, but almost as well in annual crop output/GCA. This suggests that SWIFs reap many of the benefits enjoyed by non-group farmers, but share the caste disadvantages of group farms in access to inputs, especially irrigation.

At the same time, the statistically insignificant differences in cotton yields across all farm types is notable. Crop choice is clearly a major factor affecting group farm performance in unirrigated conditions. The restrictions on SDGs regarding non-food crops, especially cotton, disadvantage them. These results hold even after controlling for inputs and other variables through regression analysis (see Agarwal 2018b). And in that analysis too, the percentage area under foodgrains is significant and negatively related to annual value of output for all crops aggregated.

Kerala contrasts with Telangana both in the annual value of farm output per hectare of GCA, and the yields of the two major crops—banana and paddy (Table 7). Banana yields were assessed only for Thrissur, since few sample farmers were growing the crop in Alappuzha, while paddy yields were assessed only for Alappuzha, since few Thrissur farmers were growing paddy. Group farms strikingly outperform individual family farms in annual farm output per hectare as well as in banana yields. These results are again borne out by my

regression analysis which controls for input use and other factors (Agarwal 2018b). In fact, the banana yields of JLGs are on average 1.6 times as high as those of individual farms. In paddy, however, JLGs perform less well than individual farms, largely due to their inability to lease good quality paddy land.

< insert Table 7 >

These productivity outcomes for the two states are noteworthy on several counts. First, the Kerala results demonstrate that notwithstanding difficulties in leasing good quality land, women's group farming can outperform individual male farmers in high value crops such as bananas and vegetables, while coming close to individual farms in traditional crops such as paddy. The women fine-tune their sales to market demand, taking advantage of high banana prices during the festival seasons of August–September. Some Thrissur JLGs have also negotiated contracts with local temples to supply special banana varieties. Groups are able to ensure delivery better than small individual farmers. Notably, JLGs outperform individual family farmers, even though the latter benefit from the knowledge of new agricultural practices that JLG women carry over to their family farms.

Second, in both states, groups are disadvantaged when growing foodcrops which require good quality land and irrigation for best performance. Third, the contrast between Kerala and Telangana reinforces the point that group formation alone cannot overcome all the difficulties women farmers face. They need better land access, state support for technical information and training, institutional backup, and the freedom to grow commercially profitable crops. The group's composition, as noted, can also affect access to lease land. The perceptions of some SDG women on why their performance is poorer than that of individual farms is insightful:

> *We face difficulties in increasing our crop yields compared to individual farms, although we are using all the inputs needed. For example, we don't get tractors, fertilizers and pesticides in time. Those who lease out tractors for ploughing only come to our land after completing the work of the big farmers*. (SDG members, Kalwal village, Mahbubnagar, Telangana)

> *There is a difference in group cultivation and individual cultivation. We need to compare the kind of land that the group is leasing with the land that individual farmers have. The SDG is leasing wasteland, fallow land, and land at a distance from our habitation* (SDG members, Chinnadarpalli village, Mahbubnagar, Telangana)

> *Crop yields will be higher in individual farms compared with SDG farms, since they use animal dung for fertilizing the land whereas in SDG farms we don't use dung. Also if*

> *individual farms have irrigation then their yields will be high, whereas we don't get irrigated land on lease*. (SDG members, Choutkur village, Medak, Telangana)

Local ecology also plays a part. Kerala's JLGs are located in good rainfall regions and most have irrigation, which allows them to get high returns on very small plots, such as by growing vegetables. SDGs are doing mainly dryland farming where irrigation access is especially important, and they are more disadvantaged than individual farmers in this respect.

Net returns

What about net returns per farm — another key indicator of economic performance? These were calculated by deducting all paid out costs from the total value of output, but without imputing values to owned land or family labour. In Telananga, aggregating the three districts, group farms do slightly better than non-group individual farms in their average net returns, since they spend less on purchased inputs, but the difference is not statistically significant (Table 8). Similarly, there is no significant difference between farm types in the average net return *per hectare*.[18] Notably, on net returns per farm, both NGFs and SDGs do better than SWIFs—the sangha women's family farms. Moreover, only around 70 per cent of individual and group farms make a profit. In case of losses, the SDGs draw at least partly on the Rs. 35,000 capital they hold, to tide them over to the next year.

< Table 8 near here>

In Kerala, by contrast, 84 per cent of group farms make a profit and their net returns per farm (and per hectare) are significantly and strikingly higher than for individual farms. In fact, the mean net return per farm of Rs. 121,048 for JLGs is five times higher than for individual farms, and three times the state average of Rs. 42,500 per farm in the same year. For a five member JLG, the average per capita net return thus comes to about Rs. 24,200, while for a five member farm family the average per capita net return is around Rs. 4700.

Perceived economic gains

The members of both SDGs and JLGs divide the produce and earnings equally, and similarly share the losses. Notwithstanding the differences in returns between Telangana and Kerala, most women's perception in both states is that group farming has benefited them economically.

[18] Calculated from the data, although the figures are not presented in Table 7.

Our family income has increased after joining the SDG. Earlier women members were searching for work. We had to wait till the big farmers called us to work on their land at low wages. Finding work itself was considered a big thing. Now everything has changed. After joining the SDG, we have learnt many things about agriculture. Some of us are also using the knowledge we have gained for our own farms. As a result, our incomes have increased. (SDG member, Narva village, Mahbubnagar, Telangana)

We are better off after joining the SDG. Earlier only our husbands used to work and all family members were dependent on that income, so there were no savings. Now we get some income from the SDG farm, so we have started saving. (SDG members, Yerraram village, Medak, Telangana)

I used the income from our group farming for buying fruits and edibles for my children. We get fresh vegetables from our own farm. (Karshakasree JLG member, Thrissur, Kerala)

Of the 284 group members in Telangana who reported how they mainly spent the incomes from their group farms, 51 per cent said they spent it on household needs, 21 per cent on medical expenses and children's education, 14 per cent on investment, and the rest mostly to pay off debts (Table 9). In other words, the earnings went almost entirely to essential needs, reflecting their poor economic status. In Kerala, however, only 32 per cent spent the income mainly on household items, 27 per cent on health and education, and 22 per cent on savings and investments. Moreover, when asked who decided on how this income would be spent, 82 per cent of those who answered in Kerala relative to 50 percent in Telangana said they spent it as they wanted, without having to ask their husbands.

< Table 9 here>

Capability enhancement

Women's empowerment lies not only in the economic benefits obtained today, but also in their improved capability of achieving better outcomes in the future.

In both states, qualitative evidence indicates that group farming has enhanced women's capabilities. This can also bring economically empowering and productivity enhancing gains over time. First, women have developed stronger identities as farmers in their own right, rather than being counted simply as farm labourers or farm wives.

We have gained a strong identity in the village due to group farming, learnt the importance of natural manure, which crops are suited to our field, and which fertilizers and pesticides to use. We are better able to make decisions in the family as well. (Husnabad village, Karimnagar, Telangana)

> *In the beginning everyone said women can't work, but we proved them wrong. Earlier we did daily wage work but we feel happy that now we are farming by ourselves.* (Gangadhara village, Karimnagar, Telangana)

Similarly in Kerala women noted:

> *JLG farming has helped enrich my farming experience. Through the JLG, I realized that I have good leadership qualities and could also manage the technical aspects of farming. Other JLG members now listen to me carefully and with respect*. (Dhanashree JLG member, Thrissur, Kerala)

Second, group farming has familiarized women with the wide range of public institutions and services that farmers use, such as opening bank accounts, keeping track of funds, interacting with both government and private agencies that provide extension, inputs and information, and negotiating in markets. Some illustrative quotations from women an SDG in Medak district, Telangana, are given below:

W1: *Our capabilities and knowledge are greater*.
W2: *We have learnt how to take bank loans*.
W3: *We are able to speak with the bank and government officials without fear*.

Women of Sreedurga JLG in Thrissur (Kerala) also outline the benefits lucidly:

> *Before joining the JLG …, we had no contacts with bank officials, agricultural officers and government officials. After registering as a JLG, we could start a bank account, attend training classes, and develop a good rapport with bank officers, ward members and Krishi Bhavan officers*.

Some other JLGs also emphasise that after forming a JLG they get support from government and village council officials, which they did not get earlier.

Third, in both states, groups have gained from a systematic transfer of agricultural knowledge and practices. This lasted only four to five years in Telangana, but continues in Kerala. As members of the Holi family JLG in Thrissur reported: 'They are giving us training on how to prepare organic fertilizers and pesticides. We have attended five to six such training classes conducted by Kudumbashree'.

Fourth, the group members have learnt to negotiate in multiple markets. In land markets they judge land quality and negotiate lease terms; in input markets they assess prices.

> *We were wage labourers working in the paddy fields, so we knew about pesticides, but only after I become a JLG member did I learn where we buy them, their price, and so on*. (Upasana JLG members, Alappuzha, Kerala)

In Telangana, many have also negotiated access to storage yards in market centres for storing their produce.

> *Earlier women were never seen in the market yards. The labourers were men and the farmers who brought their produce to sell were also men. Now women are very visible, bringing their produce, negotiating with buyers, and, if necessary, negotiating for physical space in the market yard to keep their produce for a few days till they decide to sell it*. (P. Prashanthi, Director of APMSS, author's interview 2015)

Fifth, especially in Kerala, women who trained as master farmers not only provide technical help to the JLGs, they also build leadership among women, and enhance community respect for them as farmers. Many women in both states use their learning on their individual farms as well.

> *I was on the agricultural committee and received training in farming practices. I applied those methods in my own farm also*. (SDG member, Annasagar village, Medak, Telangana)

> *We came to know more about agriculture due to the training we were given. I now apply that knowledge to my own farm as well*. (Athira JLG members, Thrissur, Kerala)

This is an important externality in terms of knowledge transfer, and is no doubt facilitated by women's ability to first test the practices they have learnt, on their group farms.[19]

Sixth, and most importantly, women have learnt to exercise autonomy in making production decisions and managing the farms. Records of meetings held in the sample districts show that during the project period the Telangana groups held regular monthly meetings, to discuss difficulties in getting land on lease, soil types, which crops to plant, what inputs to use, bank borrowings and repayments, work sharing, pest control, trainings received, output produced, losses and gains, how much crop to sell, and so on. Even illiterate SDG women, who recorded their attendance with thumb prints, participated (APMSS record of meetings, 2000-07; and author's personal observation over several meetings during 2012-13). Indeed, gains were noted quite early on in the programme. For example, the APMSS Annual Report of 2003-04 observed that the SDG women had gained greatly in self-confidence and collective strength, and were claiming proudly that: 'from the status of labourers, we are now farmers'. As individuals within family farms, women would rarely

[19] In contrast, a recent study found that information on improved agricultural practices, seeds, crop selection and rotation, etc., given by the Indian NGO, PRADAN, to their SHG women who were growing crops only within family farms, had little impact on household agricultural practices or outcomes (Raghunathan, Kannan and Quisumbing 2018).

have had the chance of being managers. Even in de-facto female-headed households with migrant husbands, women (as noted earlier) are not necessarily the main decision-makers.

8. Social and Political Empowerment

Unlike the divergent economic effects of group farming in the two states, there appear to be unambiguous benefits in terms of women's social and political empowerment in both regions.

For the disadvantaged, as Nancy Fraser (1997) argues in her theory of justice, both recognition in the socio-cultural sphere, and representation in the political sphere, matter a great deal, in addition to redistribution in the economic sphere. She conceptualises recognition as an issue of status, distinguishing it from identity politics which can essentialise differences. As we see below, members of group farms have gained in terms of both recognition (status, respect) and representation.

Social empowerment

To assess social empowerment I rely on women's self-perception, as expressed in focus group discussions. Of course, it could be argued, as noted earlier, that simply joining a sangha in Telangana or a neighbourhood group in Kerala can be socially empowering. The qualitative evidence, however, enables us to make persuasive links between group farming and women's social empowerment, *beyond that possible* with collectives formed only around social issues, such as preventing child marriage or marital violence.

In Telangana, sanghas were formed with the specific aim of social empowerment by increasing literacy, building self-confidence, and taking group action against domestic violence and social exploitation. Group farming, however, has made an important *additional* difference. For a start, enhancement of women's economic capabilities has social benefits. For instance, women as farmers have to interact with a wider range of public institutions and officials than they would simply as sangha members. Exposure visits to meet farmers in other states is another horizon-widening dimension (APMSS, Annual Reports). Most importantly, families and communities value *visible* economic contributions, and women seen to be contributing to household income enjoy a higher social status and more bargaining power (Sen 1990; Agarwal 1997).

Many SDG members now feel they are recognized for their contribution to household earnings and savings within both families and communities:

> *Our relationships with our husbands have improved a lot. They now treat us with more respect. Before joining the SDG, women were treated as if they knew nothing. Whatever the men said, we had to agree. Now we have started questioning our husbands about various activities.* (SDG members, Narva village, Mahbubnagar, Telangana)

> *Husbands have started caring for their wives more since they are earning money from agriculture. They now take their wives to the hospital if they fall ill. One member told us that after she joined the SDG her husband even took her to see a film for the first time since her marriage!* (SDG members, Regode village, Medak, Telangana)

Community respect is also of primary importance in Telangana, given that most SDG members are scheduled caste, as many SDG members elaborated:

> *Earlier, villagers were disrespectful to us and would call us by our nicknames. Also if we went to see an upper-caste villager we were made to sit on the floor. But now conditions have changed. As SDG members we are farming on our own, and can also enlighten villagers by conducting social awareness programmes… . So now villagers respect us and call us by our own names*. (Yerraram village, Medak, Telangana)

> *We used to cover our faces when we saw the patels [upper castes] in the village, but now we talk to them boldly (*SDG members, Andole village, Medak, Telangana)

An older, 1990s experiment in women's group farming in Telangana, undertaken by the Deccan Development Society, also provides examples of caste-related empowerment (Agarwal 2003).

In Kerala, similarly, the link between group farming and social empowerment is found to be strong. Many JLG members here were previously housewives (Kannan and Raveendran 2017), with limited exposure to many of the economic institutions they now deal with routinely. They were also somewhat isolated from one another, except as neighbours. While joining NHGs strengthened their social links, farming connected them economically and made their contributions visible.

> *I was just a housewife before joining the JLG. Everybody used to call me by my husband's name. Nobody knew me by my own name. Now the situation has changed*. (Holi family JLG member, Alappuzha, Kerala)

> *Now I am not simply sitting at home. I work and earn for my family, so people respect me and sometimes my neighbors come and ask me to lend them money*. (Aradhana JLG member, Thrissur, Kerala)

Moreover, those trained as master farmers feel both personally empowered and indirectly empowered other women by demonstrating women's leadership capabilities.

In Telangana, the women members have also built systems of solidarity and mutual support. For instance, in Andole village, Medak, they gave this example: 'Anasuja was hit by

a wild pig while working on the group farm. Immediately we took her to hospital, and every day two members were present in the hospital to look after her for three days.'

Hence, it can be claimed that group farming has had a socially empowering effect for women, over and above that resulting from simply being members of sanghas or neighbourhood groups.

Political empowerment

In assessing political empowerment, similarly, it can be claimed persuasively that group farming has enhanced women's prospects by expanding their social contacts and reach, and demonstrating their capabilities. Many members of sanghas in Telangana and of the K. Network in Kerala have stood and won in local elections.

In my three sample districts in Telangana, for example, 371women won in the 2001 elections and 275 in 2005, at various levels of the PRIs (APMSS Annual Report 2005-06).[20] Although there is no data on what proportion won from among those who stood, for SC sangha women even standing is important. Some winners want to use their position to invest in community infrastructure, as reported by an SDG member from Medak district: 'Kishtamma was elected as a ward member after joining the SDG. She means to construct a drainage canal in the SC colony.'

Similarly, in Kerala, 11,773 women candidates from Kudumbashree contested panchayat elections in 2010 and 5,485 (46.6 per cent) won. This was at all levels of the K. Network from CDS down to the NHGs (Varghese and Mavoothu 2014). Some of the women interviewed by Sainath (2010) felt that Kudumbashree has given them an entry point into public life. It has also given them confidence and created a sense of solidarity. In 2015, again, 15,863 women from the K. Network stood for local elections, accounting for roughly one third of the candidates under various political banners. All major political parties inducted at least some Kudumbashree candidates.[21] Of the K. Network women who stood for elections, 46.5 per cent won. Overall they won seats in 34 per cent of the wards and held 52 per cent of all leadership positions.

[20] This was long before Telangana's reservation of 50 per cent seats for women in 2018.
[21] See, e.g., http://www.thehindu.com/news/national/kerala/kudumbasree-flag-flies-high/article7779185.ece

9. Reflections and Lessons learnt

Reflections

Both Telangana and Kerala launched women's group farming for livelihood enhancement and social empowerment around the same time, but they differed in key respects: the extent and period of state support, organizational structure for implementation, ability to access land, group size and composition, autonomy in choosing crops, and local ecological and economic conditions.

In both states, group farming has broadened women's economic, social and political horizons. It has improved their exposure to and ability to access public and private institutions. It has given them an identity as *economic* actors and not just as social actors, and enhanced their status within families and communities as contributors to family income. It has also led many to seek political office. In both states, SDGs and JLGs have put land – a scarce resource – to greater use, by bringing in fallow land under cultivation and by using the land they lease more intensively. The qualitative evidence also indicates that on average the women in both regions are better off economically than if they had not formed groups.

On the economic performance of group farms compared to individual farmers, three points are especially notable. One, in terms of farm productivity, Kerala's JLGs do much better than Telangana's SDGs, compared with the individual farms in their respective regions. Two, in both states, group performance is much better with commercial crops than traditional food crops, for which access to good quality land (owned mostly by self-cultivating male farmers) matters. In Telangana, for instance, groups do worse than individuals in foodgrains and annual value of output, but not in cotton. Three, in annual net returns per farm, SDGs in Telangana make up for their lower productivity to some extent by saving especially on hired labour, while Kerala's JLGs do strikingly better than individual farms.

Three types of factors appear to underlie the divergent economic performance of Kerala's JLGs and Telangana's SDGs:

(i) *State support and institutional structure*

- JLGs in Kerala received government support on an ongoing basis, which helped women farmers overcome some of their gender-specific production constraints, while SDGs in Telangana received limited and short-term state support.

- Kerala crafted an innovative organisational structure. In particular, the autonomous community development societies could liaise effectively with the state government and village councils on behalf of group farms. Telangana's groups depended on sangha federations which had limited negotiating power with the government.
- Kerala's JLGs made good use of the all-India subsidized group credit scheme of NABARD. In Telangana there was no such linkage, perhaps because the scheme was launched only after the UNDP project had ended.

(ii) *Production conditions*

- Land access: Kerala's JLGs could access land more easily through a wide network of landowners, while Telangana's groups were restricted, especially by their SC status.
- Local ecology: Kerala's groups had favourable climatic conditions and irrigation. Telangana is a semi-arid region, and the groups depended in greater extent than did individual farmers on rain-fed agriculture.
- Cropping patterns: JLGs could freely choose their crops according to market opportunities. Telangana's SDGs had to concentrate on foodgrains despite poor irrigation, while many of the individual farmers grew cash crops, especially cotton.

(iii) *Group composition*

- Kerala's JLGs were typically constituted of five or six relatively younger women of mixed caste, well-educated, and with wide social networks. The SDGs, by contrast, were mostly of very large size, composed almost entirely of SC women with limited social capital, many also being elderly and illiterate.

Importantly, the SDGs were established under the Mahila Samakhya programme, whose primary focus was social empowerment and not livelihood generation, while the JLG programme's central focus is livelihood enhancement with interlinked social and political empowerment. This shaped the two programmes differently from the start.

Lessons learnt

Based on this analysis, what lessons can we take forward? Which kind of model might work, and what mechanisms could make group farming an effective alternative to individual family farming?

First, and perhaps most fundamentally, there is a need to ease the land constraint. Land leasing, although common in practice, is formally banned in Kerala and restricted in Telangana. Hence the women's groups rarely get written leases. This makes it difficult for them to prove they are farmers when applying for government subsidies and incentives, or when seeking compensation for crop failure. Landowners are usually reluctant to give written leases, fearing they will lose the land to the tenant. What is needed is wide-ranging tenancy reform that addresses the concerns of both lessees and lessors. Institutional innovations, such as creating land banks, could also provide a way forward in this regard (see Agarwal and Sharma 2012).

The K. Network has been able to help JLGs partially by issuing them certificates to prove to government agencies that they are farmers.[22] But schemes to help women buy land collectively would go further. Some of Thrissur's JLGs have made enough profits to themselves purchase land jointly for collective farming,[23] but most will require support. A potential model could be the one tried in undivided Andhra Pradesh in the late 1980s, when the state government started a loan-cum-grant scheme for SC women to purchase land in groups. The land was registered in individual names but cultivated jointly (Agarwal 2003). Group registration and joint ownership could also be considered.

Second, groups that have autonomy in deciding the crops they grow, the technologies they experiment with, and the markets they explore, as in Kerala, are likely to perform better than those that are constrained in choosing crops best suited to local ecology and market opportunities, as in Telangana. The striking success of the Thrissur groups in Kerala, which grew high value crops and identified niche markets, illustrates the benefits of technical guidance and economic incentives compared with directives. It also highlights the need to eschew a narrow conception of food security based on growing your own food, to a broader one that includes generating enough income for subsistence.

Third, group size is important: both very small and very large groups are disadvantaged. Small groups can facilitate cooperation and provide higher returns per capita, but may have to spend a fair amount on hired labour, while very large groups like Telangana's SDGs get low per woman returns, but save on hired labour. An solution could lie in creating in each village several medium sized groups of six to 10 women (the size of many

[22] Personal communication, Rahul Krishnan, K. Mission, Thiruvananthapuram, 2017.
[23] Several such cases were mentioned in an annual experience-sharing meeting of JLGs that I attended in Thrissur in 2015.

SHGs and recommended for JLGs under NABAARD guidelines). These could be linked horizontally within the village and federated vertically.

Fourth, groups that are more diverse by caste and class help expand the social networks that women can draw on, especially for land. While extreme heterogeneity, such as bringing the rich and poor together, would be counter-productive, the Telangana model suggests that high homogeneity, where everyone is disadvantaged, could also be a liability. What level of group heterogeneity may work could vary by context, including the extent of social hierarchy in the region. In rural Kerala, for instance, the virtual absence of large farmers (99 per cent operate under 2 ha), universal female education, and low poverty (9.1 per cent: GoI 2013) tends to reduce social hierarchy. This can enable easier cooperation across say caste diversity than may be the case in more hierarchical contexts. The important point, however, is that homogeneity is not the obvious solution.

Fifth, formal registration can give the groups an identity for accessing financial (credit, subsidies, etc.) and technical support. The Telangana groups remained informal while JLGs are increasingly formal.

Sixth, embedding groups within neighbourhood networks and linking them vertically beyond their neighbourhoods can provide women with needed support, both locally and beyond. For local networks, the Kerala model of first forming neighbourhood groups is effective, since it builds on the existing social capital that neighbours usually enjoy, and helps expand that capital by encouraging joint economic activity. On vertical linkages, however, both Telangana and Kerala provide interesting models that should be studied for local fit.

Seventh, state commitment and support is a striking feature of the Kerala model. As noted, the Kerala government has supported JLGs on a continuing basis, and (unlike Telangana) not just as a short-term experiment. This has helped the groups alleviate, if not entirely overcome, gendered production constraints.

Eighth, supplementary cooperative structures can play an important role, such as the Padasekara Samitis in Kerala that lease out machinery to paddy farmers. These could be extended to cover all crops, and specially include women as members. (Machines could even be designed to fit women's needs, as was attempted in Telangana during the project's heyday.) Examples from other countries hold lessons here. In France, for instance, many farmers are members of CUMAs (cooperatives for the use of agricultural machinery), from which they lease machines in which they have invested jointly, working out a time schedule to cover each member's needs.

Ninth, groups need both internal and external mechanisms for monitoring. For example, none of the groups or individual farmers keep written records of inputs and outputs or profits and losses. Such accounts would help the groups self-monitor their production process, and also provide external agencies a means to assess the support groups need for raising output. Especially in Kerala, the well-educated JLG members could be trained to keep regular farm accounts.

Tenth, for promoting similar initiatives in other states, apart from the lessons outlined above, the central design feature of the Kudumbashree programme is likely to be of key importance, namely the governance structure constituted of the K. Network and K. Mission, in interaction with the PRIs. The K. Network, in particular, enables the group farms to protect their autonomy while ensuring state support. Whether something similar can be established in other states will depend on state and civil society capacity and commitment, but it could prove to be a critical component of programme success.

Finally, a model which promotes group farming alongside individual family farming has both advantages and disadvantages. On the positive side, women enjoy relative autonomy from the patriarchal relations that dominate family farms and learn to be farm managers. On the negative side, they can face conflicting demands on their time. Here alternatives need exploring, such as models where women can become formal partners in family enterprises (rather than being unpaid workers with few rights). Group farms in France provide one such model, where both spouses (and more generally family members) can be registered as equal partners (Agarwal and Dorin 2018). Formalizing production relations within families, and making women joint partners in the farm, would enable them to participate on a more equal basis in farm decision-making and profit-sharing.

To conclude, women's empowerment is a complex multifaceted process, embracing the economic, the social, and the political. In this paper, we explored the potential of an innovative alternative to conventional family farming in advancing women's position on all three counts. The results are most encouraging. In economic terms, adapting Kerala's model of group farming to local contexts could bring striking gains. In addition, the experience of both Kerala and Telangana shows that group farming can notably enhance women's social status and recognition within families and communities, as well as increase their political representation in public institutions.

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Table 1. All India: Changes in operational holdings, 1995-96 to 2015-16

Farm size category	% operational holdings			% area operated		
	1995-96	2005-06	2015-16	1995-96	2005-06	2015-16
Marginal (<1 ha)	61.6	64.8	68.5	17.2	20.2	24.2
Small (1 – <2 ha)	18.7	18.5	17.7	18.8	20.9	23.2
Semi-Medium (2 – <4 ha)	12.3	10.8	9.4	23.8	23.9	23.6
Medium (4 – <10 ha)	6.1	4.9	3.8	25.3	23.1	20.0
Large (≥10 ha)	1.2	0.9	0.6	14.8	11.8	9.0
All	100.0	100.0	100.0	100.0	100.0	100.0

Source: Agricultural Census of India (GoI 2018)

Table 2. Telangana and Kerala: Demographic characteristics of adult members

Characteristics	**Telangana**			**Kerala**	
	Group farms	Individual farms [a]		Group farms	Individual farms [a]
	SDG	**NGF**	**SWIF**	**JLG**	**JWIF**
	(N=1549)	**(N=1811)**	**(N=843)**	**(N=369)**	**(N=571)**
	Religion				
% Hindus	93.1	98.8	99.8	80.5	79.6
% Muslims	0.1	1.0	0.2	1.4	1.7
% Christians	6.8 [b]	0.2		18.2	18.8
	Caste (of Hindus)				
% SCs or ST	85.3	34.4	80.6	8.8	5.6
% Backward castes	12.5	59.8	17.7	76.4	76.4
% Other castes	2.2	5.8	1.7	14.8	18.1
	Age				
Mean age of adult members	47.2	37.4	37.1	45.1	43.2
% members ≥ 60 years old	17.4	11.6	10.9	9.2	13.7
	Education [c]				
% Illiterate/dropout	37.7	61.9	60.9	0.5	1.3

Source: Author's survey. Calculated from focus group discussion data and baseline data.
Note: Figures in brackets give the number of adult members.
[a] Calculations are based on all adult members of the household.
[b] All the Christians also declared themselves to be Scheduled Caste.
[c] This information was missing for some members. The percentages are thus based on cases with information.

Table 3. Telangana and Kerala:
Land ownership by group farm members and their households

Characteristics	Telangana (N=1549)	Kerala (N=369)
% women members from landowning households	86.0	100.0
Mean area owned by landowning households of members (ha)	0.93	0.25
% women members owning land themselves	19.2	39.1
Mean area owned by landowning women members (ha)	0.79	0.15

Source: Author's survey: calculated from focus group discussion data.
Notes: Figures in brackets give the number of observations
Percentages are based on cases for which there is information.

Table 4. Telangana and Kerala:
Farm size, land source, and inputs used

Land and inputs used	Telangana			Kerala	
	Group farms	Individual farms		Group farms	Individual farms
	SDG	NGF	SWIF	JLG	JWIF
	Farm size				
Net sown area (ha)	2.06	1.14	0.92	0.96	0.35
Gross cropped area (ha)	2.49	1.35	1.08	1.22	0.48
	Source of land cultivated (% farms)				
Using owned land only		90.7	90.4		71.3
Using owned + leased land		9.1	7.7		28.7
Using leased land only	100.0	0.2	1.9	100.0	
	Source of land leased by SDGs (% farms)				
From group members	71.4			13.0	
From non-group landlords	25.7			56.5	
From both	2.9			30.4	
	Seasonal use of land (% farms) [a]				
Cultivating in both seasons	42.9	34.2	29.8	76.8	74.0
	Farms using specified inputs (% farms)				
Fertilizers	97.1	98.8	97.6	84.1	62.4
Manure	17.1	24.3	25.0	89.9	90.1
Fertilisers and/or manure	97.1	98.8	98.1	100.0	100.0
Pesticides	65.7	86.6	76.9	71.0	52.5
Farms with irrigation	44.3	50.1	40.4	88.4	96.1
No. of observations	70	485	208	69	181

Source: Author's survey. Calculated from weekly data and focus group discussion data.
[a] Perennial crops such as banana have been counted as occupying land in both seasons.

**Table 5. Telangana and Kerala:
Average annual expenditure on purchased inputs
per unit of gross cropped area (total and percentages)**

Inputs used	Telangana			Kerala	
	Group farms	Individual farms		Group farms	Individual farms
	SDG	NGF	SWIF	JLG	JWIF
Total Input Cost (Rs./ha)	26103.1	36272.0	36723.0	62786.1	34577.3
	Percentages				
Rent for land lease	34.2	1.8	2.6	14.2	8.9
Labour	6.3	39.7	37.2	26.9	40.3
Seed	9.0	9.1	10.1	6.8	7.5
Fertilizers + manure	18.0	18.9	18.9	27.2	31.2
Pesticide	5.2	7.4	6.9	1.6	3.0
Animal time	7.4	6.3	6.6		
Machine time	17.7	14.0	15.3	2.8	5.3
Transport	2.2	2.9	2.4	2.2	1.7
Materials				18.3	2.1
Total Input Cost	100.0	100.0	100.0	100.0	100.0
No. of observations	70	485	208	69	181

Source: Author's survey. Calculated from weekly data.
Note: Own inputs and own labour (that is not-purchased inputs) are not included.

**Table 6: Telangana and Kerala:
Methods of dealing with absenteeism**

Methods	Telangana		Kerala	
	No.	%	No.	%
No penalty	11	9.1	6	12.2
Replaced by				
• Daughter-in-law	36	29.8	2	4.1
• Other female relative[a] or neighbour	24	19.8	8	16.3
• Husband/son/grandson	9	7.4	10	20.4
Paid fine or wage equivalent	31	25.6	5	10.2
Sent hired labour		–	7	14.3
Worked extra time	9	7.4	8	16.3
Unresolved conflict	1	0.8	–	–
Forfeited share of output/profit	–	–	3	6.1
Total cases recorded	121	100.0	49	100.0

Source: Author's survey: calculated from focus group discussion data.
Note: [a] E.g. daughter, sister, sister-in-law, mother-in-law.

Table 7. Telangana and Kerala:
Average value of output per hectare: all crops and crop-specific (Rs/ha)

TELANGANA				
Group farms	Individual farms		Pair wise *t*-tests for difference in means	
SDG	NGF	SWIF	Pairs compared	*t*-values
Annual value of output/GCA (Rs/ha) (mean)				
36544.37 (70)	53572.97 (485)	49478.03 (208)	NGF – SDG SWIF – SDG NGF – SWIF	3.683*** 2.779*** 1.328
All foodgrains (kharif) (Rs/ha) (mean)				
25079.35 (52)	36167.90 (286)	28956.70 (117)	NGF – SDG SWIF – SDG NGF – SWIF	2.978*** 1.148 2.706***
Cotton (kharif) (Rs/ha) (mean)				
71821.00 (16)	83765.00 (259)	79169.10 (116)	NGF – SDG SWIF – SDG NGF – SWIF	0.983 0.696 0.855
KERALA				
Group farms	Individual farms		Pair wise *t*-tests	
JLG	JWIF		Pairs compared	*t*-values
Annual value of output/GCA (Rs/ha) (mean)				
179183.70 (69)	101156.20 (181)		JWIF– JLG	-3.189***
Paddy, Alappuzha (Rs/ha) (mean)				
69548.15 (7)	80741.02 (23)		JWIF– JLG	0.962
Banana, Thrissur (Rs/ha) (mean)				
413734.20 (14)	258064.10 (17)		JWIF– JLG	-1.717*

Source: Author's survey. Calculated from weekly data.
Notes: Figures in brackets give the number of observations
t-values, significance: *** at 1% ** at 5%, * at 10%.

Table 8. Telangana and Kerala:
Average annual net returns per farm[a]

Indicator	TELANGANA				
	Group farms	Individual farms		Pairwise *t*-tests	
	SDG	NGF	SWIF	Pairs compared	*t*-values
Mean	28956.6	26814.8	17355.7	NGF – SDG SWIF – SDG NGF – SWIF	-0.36 -1.84* 2.52**
% farms with positive net returns	71.4	69.5	62.5		
No. of observations	70	485	208		
	KERALA				
	Group farms	Individual farms		Pairwise *t*-tests	
	JLG	JWIF		Pairs compared	*t*-values
Mean	121048.5	23578.3		JWIF– JLG	- 4.20***
% farms with positive net returns	84.1	82.3			
No. of observations	69	181			

Source: Author's survey. Calculated from weekly data.
Notes: [a] Net returns = value of total output minus value of all purchased inputs
t-values, significance: *** at 1% ** at 5%, * at 10%.

Table 9: Telangana and Kerala:
Main expenditures from group farm incomes reported by women members
(percentages)

Expenditure item	Telangana	Kerala
Household needs (food, goods, bills)	51.4	32.2
Medical and education	21.1	26.6
Investment and savings	14.4	20.6
Paying old debts	5.3	11.6
Marriage and festivals	6.7	2.2
Personal items	1.1	6.9
	100.0	100.0
No. of cases[a]	(284)	(320)

Source: Author's survey. Calculated from focus group discussion data, in which all or several group members were individually asked the question.
[a] Women who gave this information.