DISCUSSION PAPER

DOES GROUP FARMING EMPOWER RURAL WOMEN?

The Indian experience

No. 20, December 2017

BINA AGARWAL
PROGRESS OF THE WORLD'S WOMEN 2018

UN WOMEN

The UN Women discussion paper series is a new initiative led by the Research and Data section. The series features research commissioned as background papers for publications by leading researchers from different national and regional contexts. Each paper benefits from an anonymous external peer review process before being published in this series.

This paper has been produced for the UN Women flagship report Progress of the World's Women 2018 by Bina Agarwal, Professor of Development Economics and Environment, University of Manchester, UK, and former Director and Professor of Economics, Institute of Economic Growth, Delhi.

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ABBREVIATIONS

ADS	Area Development Society
APMSS	Andhra Pradesh Mahila Samatha Society
CDS	Community Development Society
CEC	Centre for Environmental Concerns
GCA	gross cropped area (total area under all crops cultivated in the year)
GoI	Government of India
ha	hectare
JLG	Joint Liability Group
JWIF	JLG women's individual family farm, Kerala
K. Mission	Kudumbashree Mission
K. Network	Kudumbashree Network
MNREGS	Mahatma Gandhi Rural Employment Guarantee Scheme
NABARD	National Bank for Agriculture and Rural Development
NHG	neighborhood group
NGF	non-group farm
NGO	non-governmental organization
NSS	National Sample Survey
OBC	Other Backward Caste
SC	Scheduled Caste
SDG	Samatha Dharani Group
SERP	Society for the Elimination of Rural Poverty
SHG	Self-Help Group
SWIF	SDG women's individual family farm, Telangana
PRI	Panchayati Raj Institutions
UNDP	United Nations Development Programme

TABLE OF CONTENTS

SUMMARY

Few programmes for economically empowering rural women in India have focused seriously on farming — the one occupation in which the women have most experience. Hence, two state-level initiatives in the early 2000s – one undertaken in Telangana and the other in Kerala – stand out, both because they focused on improving women's livelihoods within agriculture itself, and because of the innovative institutional form by which they sought to do so, namely group farming. The initiatives encouraged rural women to lease in land collectively, pool their labour and capital, and cultivate jointly on a voluntary basis. Hence they recognized women as farmers outside the domain of family farms under which most cultivation is done globally, and in which women are typically unpaid family workers with little autonomy.

This paper, based on the author's detailed primary surveys in the two states (covering three districts of Telangana and two districts of Kerala), examines whether group farming can enable women farmers to overcome resource constraints and gain economically compared to individual farmers. Can it also empower them socially and politically? Moreover, since the approach to group farming differs notably in the two states, the paper examines which approach is more effective, and why. To date, despite its importance and scale, there has been no systematic study of group farming, based on carefully collected quantitative and qualitative data, in either state.

This study finds that in terms of farm productivity, group farms relative to individual farms in the same state perform significantly better in Kerala but less well in Telangana. Among the constraints that Telangana's groups face are: a lack of state support (technical and financial); difficulties in accessing good quality land; the emphasis placed by the non-governmental organization (NGO) that catalysed the groups that they cultivate foodgrains for food security, rather than more viable cash crops; large group size; and groups being constituted almost entirely of Scheduled Caste (SC) women which limits their economic and social reach. In contrast, Kerala's group farms enjoy a number of advantages: support from the local government and the Kudubashree network on a continuing basis; freedom to choose their cropping patterns, including growing commercially profitable crops; bank linkages for credit; small group size; and socio-economic heterogeneity in group composition, which broadens the women's social capital and can prove especially useful for accessing land. Nevertheless, it is notable that in both states women's group farms do much better when not cultivating a traditional food crop such as rice, for which access to suitable paddy land and long experience particularly matter.

Also, group farms in both Telangana and Kerala do well in terms of annual net returns per farm, calculated by subtracting all paid out costs from annual value of output. In Telangana, group farms are broadly on par with individual farms for all districts taken together, while in Kerala net returns for group farms (again for both districts taken together) are substantially higher than for individual farms, making an important addition to women's incomes.

Beyond productivity and profits, group members in both states report enhanced capabilities in terms of gaining familiarity with economic institutions and improved knowledge of new cultivation practices – knowledge that they also use for their family farms. Moreover, group members in both states emphasize that they feel socially empowered in terms of the respect they now earn from spouses and the village community. In addition they feel politically empowered: many of them have stood for panchayat (village council) elections, and a fair proportion has won.

The lessons learnt from these experiences can help not only in strengthening group farming further, but also in assessing how these models could be replicated in other regions.

RÉSUMÉ

Peu de programmes économiques visant à autonomiser les femmes rurales en Inde ont mis sérieusement l'accent sur le secteur agricole, qui est pourtant celui où les femmes sont les plus expérimentées. En conséquence, deux initiatives publiques lancées au début des années 2000 – l'une à Telangana et l'autre à Kerala – se démarquent des autres, parce qu'elles s'emploient à améliorer les moyens de subsistance des femmes dans le secteur agricole et en raison de l'originalité de leur structure. Il s'agit des groupements agricoles. Ces initiatives encouragent les femmes rurales à louer des terres collectivement, à mettre en commun leurs main d'œuvre et leur capital, et à cultiver des terres sur une base volontaire. Ces initiatives postulent que, contrairement aux pratiques habituelles dans le monde selon lesquelles les femmes travaillent sans être rémunérées et disposent d'une faible autonomie, les femmes peuvent travailler comme agricultrices hors des exploitations familiales.

Ce document, qui se fonde sur les études initiales détaillées de l'auteur dans les deux États (qui couvrent trois districts de Telangana et deux districts de Kerala), examine si les groupements agricoles peuvent permettre aux agricultrices de palier des ressources insuffisantes et de faire des bénéfices. Les groupements agricoles peuvent-ils également leur permettre de s'autonomiser socialement et politiquement ? En outre, étant donné que l'approche des groupements agricoles diffère grandement d'un État à l'autre, ce document examine quelle est l'approche la plus efficace et qu'elle en est la raison. A ce jour, malgré son importance et son ampleur, il n'y a eu aucune étude systématique sur les groupements agricoles sur la base des données quantitatives et qualitatives minutieusement recueillies dans chaque État.

Cette étude conclut qu'en termes de productivité agricole, les groupements agricoles obtiennent de bien meilleurs rendements que les fermes individuelles, meilleurs à Kerala qu'à Telangana. Parmi les obstacles auxquels font face les groupements agricoles de Telangana, on compte l'absence d'appui étatique (technique et financier) ; les difficultés rencontrées pour avoir accès à des terres de bonne qualité ; l'accent placé par les organisations non gouvernementales (ONG) qui ont promu les groupements pour qu'ils cultivent des céréales aux fins de la sécurité alimentaire, plutôt que des cultures commerciales plus viables ; la taille des groupements importants ; et le fait que les groupements agricoles soient constitués presque entièrement de femmes de la « caste répertoriée » (« Scheduled Caste ») ce qui limite leur portée économique et sociale. En revanche, le groupement de Kerala dispose d'un certain nombre d'avantages : l'appui continu du gouvernement local et du réseau Kudubashree ; la liberté de choisir ses modes de culture, en cultivant notamment des cultures rentables sur le plan commercial ; des liens avec les banques pour obtenir des crédits ; la petite taille des groupements ; une certaine hétérogénéité dans la composition socio-économique, ce qui élargit le capital social des femmes et peut s'avérer utile pour avoir accès à des terres. On note néanmoins que dans les deux États, les groupements agricoles de femmes obtiennent de meilleurs rendements lorsqu'elles ne cultivent pas des cultures vivrières traditionnelles telles que le riz, une culture qui nécessite l'accès à des rizières et une longue expérience (que les agriculteurs possèdent).

Par ailleurs, tant à Telangana qu'à Kerala, les groupements agricoles obtiennent de bons résultats en termes de rendements annuels par ferme, calculés en soustrayant toutes les dépenses payées de la valeur annuelle du rendement. A Telangana, les groupements sont en général sur un pied d'égalité avec les fermes individuelles dans tous les districts réunis, tandis qu'à Kerala, les rendements nets des groupements (dans les deux districts réunis) sont considérablement plus élevés que pour les fermes individuelles, ce qui apporte une plus-value importante aux revenus des femmes.

Au-delà de la productivité et des profits réalisés, les membres des groupements des deux États font état de capacités renforcées s'agissant de se familiariser avec les institutions économiques et d'améliorer leurs connaissances sur les nouvelles pratiques agricoles qu'elles utilisent également pour leurs fermes familiales. En outre, les membres des groupements des deux États rapportent aussi que le respect de leurs époux et de la communauté villageoise a renforcé leur statut social. Elles ont également l'impression d'avoir renforcé leur influence politique : nombre d'entre elles se sont présentées aux élections du panchayat (conseil villageois) et un bon nombre d'entre elles ont gagné.

Les enseignements tirés de ces expériences peuvent permettre non seulement de renforcer les coopératives mais aussi d'évaluer comment ces modèles peuvent être reproduits dans d'autres régions.

RESUMEN

Existen pocos programas para el empoderamiento económico de las mujeres rurales en la India que se hayan centrado seriamente en la agricultura, pese a que esta es la actividad en la que las mujeres cuentan con más experiencia. Es por ello que dos iniciativas estatales de principios de la década de 2000 resultan especialmente notorias: una emprendida en Telangana y la otra en Kerala, puesto que ambas se centraron en mejorar los medios de subsistencia de las mujeres dentro de la propia agricultura y debido a la innovadora forma institucional mediante la que procuraron hacerlo, concretamente la agricultura colectiva. Las iniciativas alentaron a las mujeres rurales a que arrendaran tierras de manera colectiva, aunaran su trabajo y capital, y cultivaran conjuntamente de manera voluntaria. De este modo, se reconoció a las mujeres como agricultoras fuera del ámbito de las granjas familiares donde se lleva a cabo la mayoría del cultivo a nivel mundial y donde suelen ser trabajadoras familiares no remuneradas y gozar de poca autonomía.

El presente informe está basado en las encuestas primarias que ha realizado en detalle la autora en los dos estados (en tres distritos de Telangana y dos de Kerala). En él se interroga si la agricultura colectiva puede contribuir a que las agricultoras superen las limitaciones de recursos y obtengan un beneficio económico y si esto podría también contribuir a su empoderamiento social y político. Por otro lado, puesto que el enfoque sobre la agricultura colectiva varía de forma muy notable en los dos estados, el informe examina asimismo cuál de ellos es más efectivo y por qué. Hasta el momento, pese a su importancia y magnitud, no se ha realizado ningún estudio sistemático sobre agricultura colectiva en ninguno de los dos estados basado en datos cuantitativos y cualitativos recopilados cuidadosamente.

Este estudio concluye que, en términos de productividad agrícola, si comparamos las granjas colectivas con las individuales, los resultados de las primeras son significativamente mejores en Kerala, y no tan buenos en Telangana. Entre los obstáculos a los que se enfrentan los grupos de Telangana encontramos: la falta de apoyo estatal técnico y financiero; dificultades para acceder a tierras de buena calidad; la insistencia por parte de la organización no gubernamental en que los grupos cultivaran alimentos para obtener seguridad alimentaria en lugar de productos con mayor salida comercial; grupos demasiado grandes, y el hecho de que los grupos estén formados casi por completo por mujeres pertenecientes a la Casta Registrada, lo que limita su alcance socioeconómico. Por el contrario, las granjas colectivas de Kerala disfrutan de diversas ventajas: apoyo constante por parte del gobierno local y de la red Kudubashree; libertad para elegir sus pautas de cultivo, incluidos los cultivos comercialmente rentables; conexiones con los bancos para la concesión de créditos; grupos pequeños, y heterogeneidad socioeconómica en la composición de los grupos, lo que amplía el capital social de las mujeres y puede resultar especialmente útil para acceder a las tierras.

No obstante, cabe destacar que en ambos estados las granjas colectivas de mujeres funcionan mucho mejor cuando no cultivan granos tradicionales como el arroz, para los que resulta especialmente importante contar con arrozales adecuados y una amplia experiencia, que sí poseen los agricultores varones.

Además, las granjas colectivas, tanto de Telangana como de Kerala, obtienen una buena rentabilidad neta anual por granja, lo que se calcula restando todos los costos abonados del valor anual de la producción. En Telangana, las granjas colectivas están aproximadamente al mismo nivel que las individuales para todos los distritos en conjunto, mientras que en Kerala la rentabilidad neta de las granjas colectivas (de nuevo, para todos los distritos en conjunto) es considerablemente mayor que la de las granjas individuales, lo que supone un complemento importante a los ingresos de las mujeres.

Más allá de la productividad y los beneficios económicos, las integrantes de los grupos de ambos estados afirman estar ahora más familiarizadas con las instituciones financieras y contar con mejores conocimientos sobre las nuevas prácticas de cultivo, algo que también utilizan en sus granjas familiares. Además, las mujeres de los grupos de ambos estados destacaron sentirse con empoderamiento social en cuanto al respeto con el que ahora cuentan por parte de sus esposos y de la comunidad de la aldea. Y también se sienten políticamente empoderadas: muchas de ellas se han presentado a las elecciones al panchayat (el consejo de la aldea) y un buen número las ha ganado.

Las lecciones aprendidas con estas experiencias pueden contribuir a seguir reforzando la agricultura colectiva, así como a evaluar cómo podrían reproducirse estos modelos en otras regiones.

1. INTRODUCTION

Efforts to economically empower rural women in India have rarely focused on the one occupation in which the majority of them are most experienced, namely farming. Given this sparsity, two state-level initiatives begun in the early 2000s stand out, not only because they focused on enhancing women's livelihoods within agriculture itself, but also because of the innovative institutional form by which they sought to do so – group farming.

These experiments – one undertaken in Telangana (then in undivided Andhra Pradesh) and the other in Kerala – encouraged rural women to lease in land collectively, pool their labour and capital, and cultivate jointly. The experiments (which grew into substantial programmes) were innovative not only in their encouragement of group farming on a voluntary basis (compared to earlier top-down methods),[1] but particularly in their recognition of women as farmers outside the domain of family farms under which most cultivation is done globally, and in which women are typically unpaid family workers with little autonomy. This recognition is also important because over 35 per cent of all agricultural workers in India are women,[2] and their percentage is likely to grow as more men than women seek non-farm jobs (leading to a gradual feminization of agriculture). Women are also much more dependent on agricultural work than men: 75 per cent of rural female workers compared with 59 per cent of rural male workers are largely dependent on agriculture.[3] Hence the welfare of rural families and overall farm productivity, as well as the country's agricultural growth, will depend increasingly on the performance of women farmers.

Women's ability to deliver on production, however, is severely curtailed by the resource constraints faced by small farmers in general and women farmers in particular, in their access to land (some 80 per cent of Indian farmers cultivate two hectares or less) as well as other inputs, and their limited bargaining power with state institutions and markets.[4] Could group farming provide a way forward? Could it enable women farmers to overcome resource constraints and enhance their economic well-being? Could it also empower them socially and politically?

Theoretically, there are several reasons for expecting group farming to empower women in economic terms. Some of these relate to group formation around production which can benefit male smallholders as well, and some are gender-specific. In general, farming in groups could enable smallholders (male or female) to enlarge farm size and reap economies of scale, pool financial resources to enable investment in inputs which may be outside the reach of individual farmers, draw upon a larger pool of knowledge and skills, save on hired labour costs, share production risks, experiment with more risk-prone higher value crops with larger payoffs, and enhance bargaining power in markets and non-market agencies[5]. The availability of a pool of labour can prove especially useful during peak seasons when individual small farmers face shortages and high costs (given that traditional labour exchange systems have largely disappeared[6]). Labour sharing in groups also makes it easier to substitute for members who may temporarily be absent

1. Forced collectivization under socialism is the widely recognized example of this (see, e.g., Nove 1969 for the USSR, and Li 1990 for China). But even experiments in cooperative farming in the 1960s in many Asian and African countries were largely top-down, albeit without the coercive character of socialist collectivization (see, e.g., Inayatullah 1972 and Goyal 1966 for South Asia; Alula and Kiros 1983 for Ethiopia; Scott 1998 for United Republic of Tanzania; Borda 1971 for Latin America; and the detailed discussion in Agarwal 2010 on these and several other countries).
2. Based on NSSO 2014, usual status criteria.
3. Ibid.
4. Agarwal 2014a; FAO 2011; World Bank 2009.
5. For further elaboration, see Agarwal 2010.
6. Agarwal 2000.

due to an exigency. Potentially, these economic benefits of group farming could be reaped not only by land owners but also by the landless through leasing in land. For the latter, in fact, groups could provide a means of becoming farmers rather than depending only on wage labour.

For women there could be additional gender-specific advantages. First, given that relatively few women own land in their own right or own enough land for economic viability, a group approach can improve women's market access to land, both because they would have more negotiating power in land markets than as individuals, and by increasing the financial resources at their command. Usually women have lesser access to individual funds and lower ability to draw on family resources compared to male farmers.

Second, forming a group can give women autonomy in making production decisions and controlling the output. This is not usually the case within family farms, where their contributions tend to be invisible and subsumed within a family pool.

Third, forming a group can bring into the fold women with leadership qualities and scarce managerial skills.

Fourth, as noted, a collective can serve as a bargaining unit. For women this can matter more than for men, given gender bias in access to government agencies that provide credit, inputs, information, training, technology, and marketing outlets. In a group, they could overcome some of this disadvantage. They would also be in a position to negotiate better terms on contract farming arrangements, than as individuals.

Fifth, women face social restrictions on their mobility and their ability to interact freely in input and output markets. These restrictions could be overcome when working in groups.

Overall, in groups women are likely to be better protected than as individuals, both as producers and as consumers. As producers, they could enjoy higher productivity for the reasons outlined above. As consumers, they would be in a better position to help poorer members tide over income troughs.

Economic empowerment could, in turn, lead to social empowerment, over and above the benefits that could arise from simply being a member of a group. There is substantial evidence, for instance, that women's economic empowerment increases both the respect that they receive from spouses and the bargaining power they command within families and communities, if they are seen as contributing visibly and directly to family livelihoods.[7] In addition, group farming would familiarize them with a wider range of institutions – banks, agricultural officials, agricultural extension agencies, cooperatives, input providers, dealers in markets, and so on – than they are likely to encounter simply as members of a group engaged in social change. Moreover, friendships developed among women working together can come in handy during illness or personal misfortune. Such non-economic payoffs could propel cooperation, even when the economic payoffs are not large.

Political empowerment is more complex and difficult to predict. But again women in groups are in a better position to demonstrate their capabilities and so undermine 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 more exposed to them as leaders.[8] The wider social contacts and self-confidence they build while dealing with public institutions as farmers is also likely to serve them in good stead when standing for public office.

Of course groups cultivating together would need to overcome the classic problem of free riding, such as work shirking. But if groups are constituted of people who know each other and are from the same neighbourhood, it would be easier to exert moral pressure for compliance as well as enforce penalties on the absentees.

How do these potential benefits play out in practice? The mentioned programmes in two Indian states provide a unique opportunity to test this, and to examine the potential of group farming as a means to empower rural women, especially but not only

7. Agarwal 1997.
8. Beaman et al. 2008.

in economic terms. Moreover, since the two states differ notably in their approach to implementing group farming, 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 state and civil society support they receive, their social composition and the local ecology. These differences can affect the outcomes 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 in what ways they can be replicated elsewhere.

In specific terms, this paper addresses two main questions: (i) can group farming empower women economically as well as socially and politically? And (ii) under what conditions can it do so effectively? To date, despite the importance and scale of the initiatives in both states, there has been no systematic study of group farming based on carefully collected quantitative and qualitative data in either state. Nor have the particular questions posed in this paper been addressed earlier.

Section 2 below outlines the genesis of group farming in each state. Section 3 describes the methods used for data collection and measurement, and Section 4 gives the characteristics of the groups. Sections 5 and 6 examine the effects on women's economic empowerment, and Section 7 on their social and political empowerment. The concluding Section 8 provides overview reflections, and outlines the lessons learnt for strengthening the initiatives and for their potential replication elsewhere.

2.

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.[9] Although UNDP initially provided support to three local agencies in Andhra Pradesh, only one – the Andhra Pradesh Mahila Samatha Society (APMSS) – systematically promoted collective farming by women on a notable scale,[10] across five districts of what is now Telangana state.

APMSS was a quasi-NGO established in 1993 to promote women's empowerment through education under the state's Mahila Samkhya programme.[11] For this purpose, it set up sanghas or women's collectives (one per village), starting with two districts in 1993 and expanding to 14 districts in 2012–2013. The village sanghas were federated at the district level. The UNDP-GoI group farming initiative – termed by APMSS 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 spread across five districts.[12]

All sangha members in the project villages could join a Samatha Dharani Group (SDG). Each SDG was provided a seed grant of Rs. 35,000, agricultural implements, training and other institutional support, exposure visits to other states, etc. The women leased land from within the group and/or from local landlords, and many of them worked on their family farms as well. At its heyday, there were 500 SDGs across five districts. Once the UNDP funding ended in 2005, however, government support for the project ceased, although at least half of the groups continued to farm, overseen by the sangha federations and APMSS through its state-supported Mahila Samatha programme. In 2016, even this programme was dissolved in Telangana, and the future of the SDGs now remains uncertain.

The Kerala group farming project also began in the 2000s, but it was structured around the Self-Help Group (SHG) model, [13] which was modified to constitute neighbourhood groups, located within a multi-level structure of governance. Unlike Telangana's approach, the governance structure in Kerala 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).[14] It included features that would be conducive to livelihood enhancement through micro-enterprise development. Experience garnered from projects for poverty alleviation and health, initiated by the United Nations Children's Fund (UNICEF) in two districts of Kerala in the 1990s, influenced the

9. Although the UNDP-GoI project launched women's group farming in three states of India – Uttar Pradesh, Orissa and Andhra Pradesh (Burra 2004) – the Andhra groups endured the best beyond the five-year project period.
10. The other local agencies were the Society for Elimination of Rural Poverty (SERP) and the Centre for Environment Concerns (CEC), but SERP supported individual women farmers through Self-Help Groups (SHGs) in 38 villages of Mahbubnagar district (SERP 2004) and CEC focused on SHGs in 20 villages of Medak district (CEC 2003).
11. The Mahila Samkhya programme, or education for women's equality, was initiated by the Government of India in 1989 in a few districts of three states (Karnataka, Gujarat and Uttar Pradesh) and later expanded to nine states (including Andhra Pradesh) and many more districts (*Gulati et al.* 2014).
12. The 500 groups were distributed across the districts as follows: Karimnagar (115), Mahbubnagar (180), Medak (125), Adilabad (40) and Nizamabad (40).
13. For a discussion on SHGs and their bank linkup, see Tankha 2012.
14. In crafting the governance structure, a key role was played by a three member task force consisting of Dr. Issac Thomas, member of the State Planning Board, Mr. S.M. Vijayanand, then Secretary Local Self-government Department in Kerala, and Mr. P. Bakshi, then head of NABARD in Kerala.

structure, which was given shape by the mentioned officials who had the authority and openness to experiment with new ideas.[15]

The first pillar of this structure was the Kudumbashree Mission (the State Poverty Eradication Mission of the Government of Kerala), launched in 1998 at the district and state levels to eliminate poverty and empower women. Parallel to the Mission (henceforth called the K. Mission), a three-level community network was created, with neighbourhood groups (NHGs) at the village level, Area Development Societies (ADSs) at the ward level, and Community Development Societies (CDSs) at the panchayat level.[16] A CDS (with its interlinked ADSs and NHGs) is an autonomous registered body whose office bearers are elected.[17] This shields it from direct government intervention and gives it negotiating power with government institutions. Henceforth, the CDS structure will be termed the Kudumbashree community network (or K. Network). Broadly the Kerala programme thus has two pillars: the K. Network and the K. Mission (with government officials seconded to the Mission). In turn, the K. Network mediates with a third pillar – the Panchayati Raj Institutions (PRIs) of local government. Initially, the K. Mission focused on micro-enterprises other than group farming, but a range of factors shifted its focus, including: reports in the early 2000s of village women informally forming groups to cultivate collectively (sanghakrishis) by leasing fallow land; the growing availability of uncultivated land as men migrated out of agriculture; the overall state objective of reviving agriculture, especially paddy farming; and the recognition that farming was what most rural women knew best.[18] From 2010 onwards, therefore, women's group farming was formalized and promoted on a systematic basis by the K. Mission and K. Network. The groups had to register with the CDS (which gave them a unique ID number), open a bank account, elect office bearers, keep minutes of meetings, and so on. They were also encouraged to link up with bank credit under the Joint Liability Group (JLG) scheme of NABARD, but this was not mandatory. Hence, although the women's group farms were called JLGs when they registered with the CDS, rather few were initially linked to bank credit as groups.[19] In April 2015, however, new guidelines were issued to make a bank linkage mandatory for JLGs.[20]

Structurally, the JLGs are embedded in NHGs and in turn connected to an ADS and CDS. In terms of expenditure, group farming via JLGs is now the second most important programme of the K. Mission, accounting for 12 per cent of its total expenditure in 2011.[21] The programme covers all 14 of Kerala's districts, and by official figures there were 61,836 JLGs with 201,650 women cultivators in early 2016.

JLGs are supposed to receive a variety of support and incentives from the CDS and the K. Mission on an ongoing basis: extension information; training in agricultural practices with support from agricultural universities, including training as master farmers; interest subsidies (if they take a bank loan);[22] crop-specific area incentives (based on the area under the crop) and crop-specific production incentives (based on JLG crop yield in comparison with the national average);[23] and so on. Each CDS received Rs. 50,000 for setting up farmer facilitation centres to buy equipment such as sprayers, weed cutters, wheelbarrows, etc. for use by the JLGs. And over 2006–2011, district-level meetings were held to discuss with the women what they would like to cultivate. In practice, there have been gaps in implementation on some of these counts, especially in the delivery of incentives.

15. See Agarwal 2017 for a detailed description of this process.
16. India has a three-tier system of local self-government: gram panchayat (village council, which can sometimes cover several villages, depending on village size), mandal parishad (block level board) and zilla parishad (district level board). A *sarpanch* is the elected head of a gram *panchayat*. The term panchayat is used in the paper to mean gram panchayat, and Panchayati Raj Institutions as covering all three tiers.
17. K. Network n.d.
18. These factors are culled from the authors' interviews in 2015–2016 with those who helped establish and govern Kudumbashree and its livelihoods programme. See also, K. Mission 2006) and Agarwal 2017.
19. The NHGs provided such as link, but only to its members as individuals.
20. K. Mission 2015a.
21. Personal communication, Rahul Krishnan, thematic anchor for farm livelihoods, K. Mission, Thiruvananthapuram, 2016.
22. For details on these incentives and subsidies, see K. Mission 2015b.
23. Some 28 crops were listed in 2010 with different incentive rates for different crops.

3.

DATA AND MEASUREMENT

The SDGs in Telangana and JLGs in Kerala constitute the focus of this study, which is based on my primary survey of group and individual farms in both states. The data (quantitative and qualitative) were collected for 763 farm enterprises in three districts (Medak, Mahbubnagar and Karimnagar) of Telangana[24] and 250 farm enterprises in two districts (Alappuzha and Thrissur) of Kerala during 2012–2014.[25] In each state, the samples include both group and individual farms to provide a comparison.

BOX 3-1

Assessing empowerment

Forms of empowerment	Forms of assessment	
State	Telangana	Kerala
Economic	Input use, productivity and profitability of SDGs compared with (i) individual non-group farmers (NGFs); and (ii) SDG women's individual family farms (SWIFs)	Input use, productivity and profitability of JLGs compared with individual family farms of JLG women (JWIFs)
Social	SDG members' self-perception about the change in their status within families and communities	JLG members' self-perception about the change in their status within families and communities
Political	SDG members (i) standing in local elections; (ii) winning in local elections	JLG members (i) standing in local elections; (ii) winning in local elections

In Telangana, the individual farms are of two types: non-group farms (NGFs) and the SDG women's family farms (SWIFs). The non-group farmers were selected randomly from a census (conducted for the study) of all farmers in the study villages owning five acres or less.[26] In Kerala, the individual farms were the family farms of JLG women (typically managed by husbands or adult sons). The survey data were collected in two main ways, following an initial baseline: (i) weekly recording of every input used and output produced by the sample farms over an entire year; and (ii) one time focus group discussions with both group farms and individual farms, to obtain information on farmer characteristics and farm functioning. These data were supplemented by in-depth interviews in 2015–2016 with key persons involved in the initiation and/or in the implementation of group farming in each state.

24. When the research began, the three sample districts were part of undivided Andhra Pradesh but now fall under Telangana state.
25. The initial sample was slightly larger, but some farms were dropped, such as those that did not continue cultivation for the full year due to crop failure or that had incomplete information.
26. Small and marginal farmers were selected as the control group to provide a relevant comparison with sangha women who come from similar economic backgrounds. Also, group farming is more likely to be advantageous to small farms than to large ones. In practice, after the survey began, we found that a few individual farmers had operational holdings somewhat larger than five acres because they had leased additional land after we had conducted the census.

The extent to which group farming empowers women economically, socially and politically was assessed as outlined in box 3-1.

For economic empowerment, the comparison is between women's groups and individual male farmers in the same state. Hence, for instance, I compare input access, crop productivity and net returns of SDGs and individual farms in Telangana, and similarly between JLGs and individual farms in Kerala. In both states, the individual farms are almost all male-managed. However, in Telangana, the comparison is between women's SDGs and two types of individual farms – NGFs and SWIFs – while for Kerala the comparison is between JLGs and JWIFs only. These assessments are based on an analysis of the quantitative data.

For assessing social empowerment, however, I depend on the self-perceptions of the female group members on how group farming has impacted their social status within communities and families, as reported by them in the focus group discussions. Finally, for political empowerment I use available statistics on SDG and JLG women who stood for and won in local government elections.

4.
GROUP CHARACTERISTICS

Telangana's SDGs and Kerala's JLGs differ not only in terms of the institutional structures within which they are embedded but also in other ways. First, they diverge in their size and social composition, both of which can affect their functioning and effectiveness (see Tables 4-1 and 4-2). Telangana's SDGs range between 10–54 members in size, with a mean of 22, while Kerala's JLGs range between 3–12 members, although they are recommended to have a maximum of 10. The average JLG has six members. NHGs, however, can be bigger, and one NHG can have more than one JLG.

Second, the caste and religious composition of JLGs is more diverse than that of SDGs. JLGs have a fair proportion of Christian members (18 per cent), and most of the 80 per cent Hindus belong to Other Backward Castes (OBCs) or upper castes (76 per cent and 15 per cent, respectively). The SDG women in Telangana, by contrast, are overwhelmingly Hindus, with 85 per cent Scheduled Castes (SCs) and 12 per cent OBCs. It is notable that the Christians in the Telangana samples also term themselves SCs and are economically disadvantaged like the SC Hindus.

The third major difference between SDG and JLG women is in education. In Telangana, 38 per cent of the sangha women are still illiterate, and another 31 per cent can sign their names or minimally read and write as a result of APMSS's Mahila Samatha Programme. In Kerala, barring one woman, all are educated: two-thirds have completed secondary school or above, and the rest have completed primary school or studied up to class 10.

Fourth, although the average age of members is around 45–47 in both states, Telangana has more older members – only 14 per cent of the SDGs have no members of 60 years or above, while in Kerala the figure is 64 per cent. This demographic difference is also reflected in the higher percentage of women with young children among JLGs than SDGs, which presents another type of constraint.

Fifth, there are differences in land ownership, although the picture is a mixed one. Some 86 per cent of women in SDGs come from landed families, but only 19 per cent of them own any land themselves (see Table 4-3). In contrast, all the JLG women are from landed households, and 39 per cent of the women themselves own some land (see Table 4-4). Some received the land as dowry, others bought it themselves, or their husbands bought it in their name or in the names of both spouses. However, the amounts of land owned by the sample households in Telangana are larger – 0.93 hectares (ha) on average – than the 0.25 ha on average in Kerala. Coming from landowning households, or owning some land relative to owning none, is clearly helpful for the Kerala women, but their very small family plots can at best provide supplementary support and are not large enough to provide full subsistence. What does help the JLG women, however, is that many have a family member sending remittances from abroad or earning a regular income from skilled or semi-skilled work or an office job.

TABLE 4-1

Telangana: Demographic characteristics of SDG members and SDGs

Characteristics	Medak	Mahbubnagar	Karimnagar	All districts
	CHARACTERISTICS OF SDG MEMBERS			
No. of observations	(N=697)	(N=420)	(N=432)	(N=1549)
	Religion			
% Hindus	88.4	98.8	95.1	93.1
% Muslims	0.00	0.2	0.00	0.1
% Christians[a]	11.6	1	4.9	6.8
	Caste (among Hindus)[b]			
% Scheduled Castes	86.7	70.3	98.3	85.3
% Backward Castes	12.3	23.9	1.2	12.5
% Other castes	1.0	5.8	0.5	2.2
	Age			
Mean	49.51	44.03	46.72	47.25
Max.	85	68	70	85
No information	0	1	1	2
	Marital status			
% married	68.3	77.6	88.4	76.4
% widowed	31.0	21.9	10.6	22.6
% other single	0.7	0.5	0.9	0.7
	Dependent children			
% women with children ≤ age 12	12.0	28. 3	10.0	16.1
No information	4	0	1	5
	Education			
Illiterate	40.2	40.3	31.2	37.7
Read and write or sign names	59.8	0.7	12.3	30.8
Up to class 5		37.9	42.6	22.0
6–8 class		16.4	9.0	6.9
9th class and above		4.6	4.9	2.6
No information		11		11
	Members with relatives in SDG			
% members with at least one relative in SDG	34.0	20.0	24.6	27.6
	CHARACTERISTICS OF SDGs			
No. of observations	(N=27)	(N=21)	(N=22)	(N=70)
No. of members in SDG (range)	10–54	11–33	10–43	10–54
Average SDG size (no. of members)	26	20	20	22
Years of SDG functioning	11.3	10.9	11.0	11.1
% SDGs with no member ≥ age 60	3.7	33.3	9.1	14.3

Source: Author's survey: calculated from focus group discussion data.
Notes: The percentages relate only to cases with information.
[a] All the Christians also declare themselves to be Scheduled Caste.
[b] There was only one Scheduled Tribe member in this sample.

TABLE 4-2

Kerala: Demographic characteristics of JLG members and JLGs

Characteristics	Alappuzha	Thrissur	All districts
	CHARACTERISTICS OF JLG MEMBERS		
No. of observations	(N=204)	(N=165)	(N=369)
	Religion		
% Hindus	91.7	66.7	80.5
% Muslims	1.5	1.2	1.4
% Christians[a]	6.9	32.1	18.2
	Caste (Hindus only)[b]		
% SCs	8.6	9.1	8.8
% OBCs	68.5	90.0	76.4
% Upper castes	23.0	0.9	14.8
	Age		
Mean	44.83	45.40	45.09
Max	71	68	71
	Marital status		
% married	89.7	89.1	89.4
% widowed	7.4	8.5	7.9
% separated	2.0	1.2	1.6
% other single	1.0	1.2	1.1
	Dependent children		
% Women with children ≤ age 12	30.4	21.8	26.6
	Education		
% illiterate	1.0	0.6	0.8
% primary (lower and upper)	22.6	22.4	22.5
% up to high school (10th fail)	10.3	13.9	11.9
% secondary (10th pass) or higher secondary	58.8	55.2	57.2
% undergraduate/graduate or above	7.4	7.9	7.6
	Members with relatives in JLG		
% members with at least one relative in JLG	32.4	27.3	30.1
	CHARACTERISTICS OF JLGs		
No. of observations	(N=33)	(N=36)	(N=69)
No. of JLG members (range)	4–12	3–6	3–12
Average JLG size (members)	7	5	6
Years of JLG functioning	3.7	3.8	3.7
% JLGs with no member ≥ age 60	57.58	69.44	63.77

Source: Author's survey: calculated from focus group discussion data.
Note: The percentages are based on cases with information.
[a] Most of the Christians declare themselves as upper/forward castes and the rest as Backward Castes.
[b] There were only two Scheduled Tribe members in this sample.

Among these broad differences, one feature common to both Telangana and Kerala is that some 27–30 per cent of the women members have at least one relative in the group, which can add to internal trust and cohesion.

TABLE 4-3
Telangana: Land ownership among SDG members

Characteristics	Medak (N=697)	Mahbubnagar (N=420)	Karimnagar (N=432)	All districts (N=1549)
% SDG members from landowning households	92.2	90.7	71.0	86.0
Mean area owned by landowning SDG households (ha)	0.94	1.10	0.71	0.93
% SDG women owning land themselves	19.8	31.9	2.4	19.2
Mean area owned by SDG women (ha)	0.54	1.05	0.67	0.79

Source: Author's survey: calculated from focus group discussion data.
Note: Figures in brackets give the number of SDG members.

TABLE 4-4
Kerala: Land ownership among JLG members

Characteristics	Alappuzha (N=204)	Thrissur (N=165)	All districts (N=369)
% JLG members from landowning households	100.0	100.0	100.0
Mean area owned by landed JLG households (ha)	0.22	0.28	0.25
% JLG women owning land themselves	41.2	36.6	39.1
Mean area owned by landowning JLG women (ha)	0.14	0.15	0.15

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

Overall, the SDG composition reflects APMSS's emphasis on constituting sanghas of women from relatively caste homogenous and economically disadvantaged 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 for more caste and class diversity within JLGs. Group size and composition have further implications. On the one hand, if groups are very small (some JLGs have only three to four members) they can face labour shortages and spend a great deal on hiring labour. On the other hand, the very large size of most SDGs is not conducive for either economic viability or effective cooperation (as also pointed out by an interim evaluation of the project in 2004[27]), notwithstanding their experience of working in sanghas before forming SDGs. Very large groups are likely to be more effective in social protests than in joint production, and large numbers can also reduce the returns each woman gets. Hence, medium-sized farms are likely to prove more conducive in economic terms.

27. See, Gulati et al. 2004.

The issue of caste heterogeneity is also contentious. On the one hand, SDGs constituted almost entirely of poor, low-caste women could make for better cooperation. But being poor and low caste also limits the women's social reach within the community. This can especially restrict their ability to lease in good quality land in convenient locations. In Kerala, on the other hand, given their caste and religious heterogeneity and broader economic spectrum, JLGs have access to more potential sources for leasing land from outside their group, as discussed further in Section 5. More generally, literature from other contexts indicates that group homogeneity is not always a necessary condition for successful cooperation, and there are contexts in which heterogeneity can help.[28] This idea is contrary to the primacy given by most civil society groups to social and economic homogeneity in group formation.

28. Heterogeneity can take various forms: economic (e.g., class differences), social (e.g., caste hierarchies), ethnic or religious. Economically homogenous groups can still be heterogeneous in other respects. (See, Baland and Platteau 1996; Marwell and Olivier 1988.)

5.

ECONOMIC EMPOWERMENT: ACCESS TO INPUTS

An important indicator of a farm's economic viability is access to inputs such as land, irrigation and fertilizers.

5.1 Land access and farm size

Since in both Telangana and Kerala women's groups depend entirely on leasing in land, the availability of such land is critical to their ability to farm. Land can be leased either from land-owning group members or from landlords outside the group. The problem is eased somewhat if group members are themselves landowners, since they are more willing to lease to the group and the transaction costs are lower. But access to land from outside the group is also important, since simply depending on in-group leasing can limit the expansion of farm size to make it economically viable or profitable.

In Telangana, 71 per cent of SDGs depend only on land leased from other SDG members, 26 per cent from landowners outside the group, and 3 per cent from both (see Table 5-1). The leased area ranges from 0.4 to 8 ha, but the higher end of the range is only found among the Medak groups, while in Mahbubnagar and Karimnagar the largest area leased is 2.5 ha. Most SDGs complain about the difficulty of getting good quality land with irrigation and near their homesteads. The quotation below is illustrative:

> *"We are not getting good quality land in a single plot. There is also no irrigation. We don't have enough power either, even if we have an irrigation facility. The landlords don't want to lease their high quality land to us, since they want to cultivate it themselves."* (SDG members, Chenchel village, Karimnagar, Telangana)

The caste homogeneity of SDGs also restricts their access to land. For a start, the SC community tends to own much less land than OBC or upper-caste landowners, to whom SC women have limited access.

> "*The situation in the village for the SC community is very bad. Most of the OBC community people 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 members. The land is dry and of poor quality.*" (SDG members, Chowdarpalli village, Mahbubnagar, Telangana)

> "*In the initial years, our SDG leased two acres of the 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 in that land." (SDG members, Tirumalagiri village, Mahbubnagar, Telangana)

Also, SC communities in Telangana are often located at a distance from the village. This reduces women's access to leased land close to their own homes that would be easier for them to supervise.

TABLE 5-1
Telangana and Kerala: Farm size and source of land by farm type (hectares)

	Telangana			Kerala	
	NGF (N=485)	SWIF (N=208)	SDG (N=70)	JWIF (N=181)	JLG (N=69)
	Farm size (net sown area: ha)[a]				
Mean	1.14	0.92	2.06	0.48	1.22
Min.	0.10	0.10	0.40	0.01	0.09
Max.	5.01	2.63	8.09	4.05	4.05
	% Source of cultivated area[b]				
Owned only	90.7	90.4		71.3	
Owned + leased in	9.1	7.7		28.7	
Leased in only	0.2	1.9	100		100
	Source of land leased (%)				
Leased from group members			71.43		13.0
Leased from landlords			25.71		56.5
Leased from both			2.86		30.4
	Seasonal use of land (%)[c]				
% cultivating in both seasons	34.2	29.8	42.9	74.0	76.8

Source: Author's survey: [a] Calculated from weekly data; [b] Calculated from focus group discussion data.
Notes: [c] Perennial crops such as banana have been counted as occupying the land in both seasons.
Figures in brackets give the number of farms.

SDGs thus depend mainly on land leased from group members, rather few of whom, as noted, own land. This reduces their ability to enlarge farm size, although it has one advantage: they can usually get the land at below market rates. This is partly because women do not view in-group leasing in strictly commercial terms, since they themselves gain from the land being cultivated by their SDG, and partly because the owners are unable to manage the land alone if they are old and/or widowed and find it difficult to bear the high labour costs. Most leases require 50 per cent advance payment and the balance after harvest, which means that the lessee bears only part of the risk of crop failure. The individual farmers in the sample, in contrast, almost entirely cultivate their own land. Some 90 per cent own all the land they cultivate.

In Kerala, the JLGs generally face less difficulty in getting land on lease, although this can vary by region and type of land. Unlike Telangana, only 13 per cent of the JLGs depend on within-group leasing, 56 per cent lease from other landowners and 30 per cent draw on both. The area leased by JLGs ranges from a minute 0.09 ha to a decent amount of 4.05 ha. Most of this land has some irrigation. Hence, even a rather small plot can be economically productive for, say, vegetable farming and help supplement household income. Only 11 per cent of the JLGs pay advance rent, but very few get the land below market rates and most have

oral leases. The two Kerala districts – Alappuzha and Thrissur – are quite similar in these respects. Also, all the individual farmers in the Kerala sample (as in the Telangana sample) cultivate either only their own land (71 per cent) or owned plus leased land. None is a pure tenant.

Hence, although in both states individual farms are substantially better off than women's group farms in terms of land security, JLGs are less constrained than SDGs in access to land for several reasons. First, they have wider social contacts due to their caste and class heterogeneity and the mixed neighbourhoods they live in, which give them better access. Especially given the legal restrictions on leasing, informal networks based on trust and reciprocity are important, and it is more difficult for predominantly low-caste SDGs in Telangana to build such networks across castes, than it is for mixed caste JLGs in Kerala. Consider some examples on how JLG women draw on their networks:

> "*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)

> "*JLG members directly approached the landlord for getting land on lease. One plot of 31 cents belongs to the brother of Krishnamma (JLG member).*[29] *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)

That a larger percentage of JLG women come from economically better-off households than SDG women also enlarges the JLG's social access to land.

Second, JLGs can sometimes get support from K. Network officials in negotiating with landlords:

> "*The ADS secretary and ward member recommended to the landlord that he lease us his land. The JLG members then directly approached the landlord to discuss the lease terms and fix the rate at Rs. 1,000*." (Kathir JLG members, Alappuzha, Kerala)

Third, due to high male out-migration to cities or shifts to non-farm employment, more land is left uncultivated and owners are willing to lease it more readily.

> "*Nalakath Abdul Salam, my husband's brother, works abroad and his land was not being used. We contacted him over the phone and he agreed to lease it to us, so we didn't face any difficulty*." (Pushpam JLG members, Thrissur, Kerala)

Although JLG women (like SDG women) do complain about their land problem, this is usually about the plot size being too small, or not getting good quality land in a consolidated plot, rather than 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. Paddy land is especially difficult to lease since the owners often cultivate it themselves.

> "*Yes, there is a problem in getting a single plot of land here, since the villagers are engaged in cultivating their own land. Nobody here is interested in leasing out the land, so we are cultivating the land owned by our own JLG members*." (Thrikarthika JLG members, Alappuzha, Kerala)

Landowners are also sometimes wary of leasing to groups and prefer to lease to individuals in whose experience they have faith, as illustrated by the views of a landlord in Thuravoor CDS, Alappuzha, Kerala:

> "*Actually, I am not interested in leasing land to anyone. I was cultivating my three acres myself, but now due to high wage rates for hired labourers I reduced this to 1.5 acres. So when Mr. Basheer, who won the best farmer award approached me for land, I decided to lease him some land. He gave me about 30 per*

29. 100 cents of land make one acre, and 2.471 acres make a hectare.

cent of the crops after the last harvest. I don't like leasing to groups. I preferred leasing to Mr. Basheer because of his interest in cultivation and because I am sure that he will maintain the land's quality."

The difficulty of getting paddy land, especially in the high productivity parts of the sample districts, means that JLG women face a notable disadvantage in matching the paddy yields of male farmers who own suitable paddy land and have long experience in cultivating the crop.

5.2
Access to irrigation and inputs

How do the groups fare in terms of input access? The Telangana SDGs constantly complain about their lack of irrigation, erratic rainfall (untimely, too much, or too little rain) and poor weather conditions. Large parts of the sample districts are semi-arid. Only 44 per cent of the SDGs have irrigation compared to 50 per cent of NGFs, while in Kerala most of the JLGs and individual sample farmers have some source of irrigation (see Table 5-2), even if not always assured or adequate.

TABLE 5-2
Telangana and Kerala: Percentage of farms using specified inputs (both seasons aggregated)

	Telangana			Kerala	
Farms using specified input	NGF (485)	SWIF (208)	SDG (70)	JWIF (181)	JLG (69)
Fertilizers	98.8	97.6	97.1	62.4	84.1
Manure	24.3	25.0	17.1	90.06	89.9
Fertilizer and/or manure	98.8	98.1	97.1	100.0	100.0
Pesticides (% using only chemicals)	86.6 (85.8)	76.9 (76.0)	65.7 (65.7)	52.5 (28.2)	71.0 (43.5)
Farms with irrigation	50.1	40.4	44.3	96.1	88.4

Source: Author's survey: calculated from weekly data.
Note: Figures in brackets give the number of farms

On other inputs there were some interesting differences, such as in the use of seed varieties, fertilizers and insecticides. The SDGs depend much less on local paddy varieties than individual farmers, but 97 per cent or more of both SDGs and individual farmers use fertilizers. However, fewer SDGs than individual farms use manure (since they do not keep animals) and markedly less use pesticides, either chemical or organic. They persistently mention difficulties in accessing fertilizers, good quality seeds, or tractors in time. The following experience is typical:

"*It is hard to get good quality seeds. If we get good seeds then the cost is very high. If we buy cheaper seeds, the yield is low. Fertilizer costs are also very high. Moreover, 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)

In Kerala, again, most JLGs as well as individual farmers use fertilizers and pesticides. A larger proportion of JLGs than individual farmers use chemical fertilizers, probably because the latter have animals that provide manure and JLGs do not. But JLGs also use a higher proportion of chemical pesticides. Market demand for non-chemical crops makes a difference. Many use chemicals on some crops but not in others to exploit niche markets for organic vegetables and bananas.

> "*In the paddy field we use chemical fertilizers, otherwise it will not be a success. In vegetable cultivation we practice organic farming. We use cow-urine, cow-dung and weeds as manure and neem oil and tobacco-soap solution as pesticides.*" (Maniyakam JLG members, Alappuzha, Kerala)

Tables 5-3 and 5-4 give the expenses on purchased inputs for Telangana and Kerala respectively, by district. It is notable that in Telangana, the total expenditure on purchased inputs is much higher among individual farms than SDGs in each district, and aggregated across districts. Most of this cost (40 per cent among NGFs) is for hired labour, with fertilizer and manure coming next. By contrast, for all districts aggregated, only 6 per cent of SDG cost is on hired labour, the main expenditure being on leasing the land. This picture broadly holds for two of Telangana's districts, but not for Mahbubnagar where expenses are more evenly distributed between inputs. In Kerala, again, the total expenses per hectare differ between districts: JLGs spend somewhat less than individual farmers in Alapuzza but substantially more in Thrissur. Like Telangana, however, 40 per cent of the total cost of individual farms in both districts in Kerala is on labour, while in JLGs, expenditure on labour is less and equivalent to that spent on fertilizer plus manure.

TABLE 5-3

Telangana: Total and percentage annual expenditure on purchased inputs per gross cropped hectare

	Medak			Mahbubnagar		
	NGF (183)	**SWIF (79)**	**SDG (27)**	**NGF (150)**	**SWIF (65)**	**SDG (21)**
Total input cost[a] I (Rs/ha of GCA)	39,673.95	37,990.02	24,943.06	27,647.33	28,234.45	23,452.20
% of total input cost						
Fertilisers + manure	19.6	19.0	16.3	18.6	19.2	19.0
Pesticide	8.8	8.4	7.6	7.9	7.3	7.9
Transport	3.2	2.7	2.0	3.5	2.7	2.6
Seed	8.8	10.2	9.3	8.7	9.0	9.6
Labour	43.0	42.1	3.9	35.6	34.1	11.2
Animal	5.1	5.0	5.2	9.0	10.0	13.9
Machine	10.7	12.5	10.8	15.1	16.4	18.6
Rent-lease	0.7	0.0	44.9	1.5	1.3	17.2
Input cost	100.0	100.0	100.0	100.0	100.0	100.0

	Karimnagar			All districts		
	NGF (152)	SWIF (65)	SDG (22)	NGF (485)	SWIF (208)	SDG (70)
Total input cost[a] I (Rs/ha of GCA)	40,687.40	43,780.34	30,057.09	36,272.00	36,723.04	26,103.07
% of total input cost						
Fertilisers + manure	18.3	18.6	18.9	18.9	18.9	18.0
Pesticide	5.4	5.2	0.7	7.4	6.9	5.2
Transport	2.0	2.0	2.1	2.9	2.4	2.2
Seed	9.8	10.6	8.4	9.1	10.1	9.0
Labour	38.5	33.9	5.1	39.7	37.2	6.3
Animal	5.9	6.1	4.9	6.3	6.6	7.4
Machine	16.9	17.4	24.1	13.9	15.2	17.7
Rent-lease	3.2	6.2	35.9	1.8	2.6	34.2
Input cost	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author's survey: calculated from weekly data.
Note: Figures in brackets give the number of farms.
[a] Includes cost of all purchased inputs; does not include imputed values of own labour or inputs.

Unlike SDGs in Telangana, JLGs growing paddy (like all paddy farmers in Kerala) receive state support. They are well served by the Krishi Bhavan (Ministry of Agriculture) and few complain about a lack of access to seeds or other inputs. Moreover, paddy growers can lease machinery from the Padasekara Samitis (machine-leasing societies for paddy farmers). Telangana's farmers (SDGs or individuals) do not have access to such specialized machine-leasing bodies.

TABLE 5-4

Kerala: Total and percentage annual expenditure on purchased inputs per gross cropped hectare

	Alappuzha		Thrissur		Both districts	
	JWIF (106)	JLG (33)	JWIF (75)	JLG (36)	JWIF (181)	JLG (69)
Total input cost[a]	28,605.35	24,719.51	43,017.65	97,680.45	34,577.30	62,786.09
Per cent of total input cost						
Rent-lease	12.6	26.1	5.4	11.4	8.9	14.2
Labour	40.3	32.4	40.2	25.7	40.3	26.9
Seed	7.3	7.2	7.2	6.6	7.5	6.8
Fertilizers + manure	23.6	19.9	38.3	28.9	31.2	27.2
Pesticide	5.4	4.9	0.9	0.9	3.0	1.6
Machine[b]	8.7	8.0	2.1	1.6	5.3	2.8
Transport	1.2	1.6	2.2	2.4	1.7	2.2
Material cost	0.5	0.0	3.6	22.6	2.1	18.3
Total input cost	100.0	100.0	100.0	100.0	100.00	100.0

Source: Author's survey: calculated from weekly data.
Note: Figures in brackets give the number of farms
[a] Includes cost of all purchased inputs; does not include imputed values of own labour or inputs.
[b] Includes two cases of JWIFs in Alappuzha where animals were also used.

5.3

Access to labour

Labour access is one aspect in which the women's groups, except when they have very few members, have an advantage over individual farmers. As a group, their needs for hired labour are substantially less (except when they hire machinery, which comes with the machine operator, or require male labour for heavy manual work). Especially in Telangana where SDGs are large, the annual hired labour hours per hectare are 78 relative to 824 and 780, respectively, among NGFs and SWIFs. Hence the group farms, as noted, have lower hired labour costs (Rs. 1,644 relative to Rs. 14,403 for 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)

In Kerala, however, the picture is a mixed one. Given that some of the JLGs have only three to four members, they still have to hire a fair amount of labour like individual farms. At the same time, many JLGs take advantage of the Government's Mahatma Gandhi Rural Employment Guarantee Scheme (MNREGS) for land preparation and some other operations on their group fields.[30] This reduces their overall cost and gives them an additional income as well. Hence, although JLGs do hire labour, most are less dependent on it than individual farms.

30. MGNREGS was established in India through the National Rural Employment Guarantee Act 2005 to provide livelihood security in rural areas by guaranteeing at least 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work.

5.4

Technical, financial and marketing support

The biggest difference between the SDGs and JLGs, however, lies in access to technical inputs and financial support. In Telangana, even for the five years of the UNDP-GoI project, SDGs were imperfectly served with technical inputs and training and, at best, were helped by privately hired agricultural experts rather than by government agricultural officials.[31] And even this private support ceased after the project ended. An interim evaluation report in 2004 highlighted that almost no extension officers from the state agricultural and horticulture departments were allocated to collaborate on the project.[32] Within the project too, as P. Prashanti (head of APMSS) points out: "There were many vacancies and few agricultural officers. In addition, drought for two congruent seasons meant that many [sanghas] lost their investments".[33]

None of the SDGs had crop insurance at the time of my 2012–2013 survey. As a result, if the crop failed, they had no fall-back security. Also, since many SDGs have no written proof that they are cultivators, while the landlords have the 'pattadar passbook' (record of ownership) and survey numbers of the leased land, it is the landlords who get the compensation. These disadvantages are over and above those that small individual male farmers also face: they too complain of crop loss due to untimely rains or drought, high market prices for fertilizers, and inability to access fertilizer subsidies.

JLGs, by contrast, are better served with institutions providing inputs and information. After the groups are formed, they also receive technical support and training in agricultural practices on a fairly consistent basis through the K. Mission. And some village women are trained to be 'master farmers' to provide additional technical support to the JLGs.

31. Menon-Sen 2012.
32. Gulati et al. 2004, p. 27.
33. Author's interview with P. Prasanthi, Director, APMSS, 2015.

"*Our access to Krishi Bhawan, Panchayat and block officials increased after forming a JLG. They are providing us information without delay. We were not aware of support from these organizations before joining the JLG. Our ward member, Mr. Kareem, is also very supportive.*" (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)

Relative to Kerala's individual women farmers, there are scale economies in providing services to a group, such as support for input purchase, sales or training. The JLGs are also better able to negotiate access to farm machinery. Individual women farmers are seldom members of the Padasekara Samitis through which paddy farmers can lease machinery. In theory, these services are available to all paddy farmers, but women farmers have problems of access that can be overcome if they form a group.

Forming JLGs thus helps women bridge input access gaps to an extent. But they still face difficulties in getting the area and production incentives promised by the K. Mission. Many women find the paperwork and eligibility conditions difficult to navigate and are unable to apply for the incentives, although Thrissur JLGs do much better than those in Allappuza in this regard. Also, with oral leases, JLGs cannot access the subsidies or crop loss compensation that the state government provides to farmers and that (as in Telangana) require proof of being a cultivator. For example, to apply for subsidies a land tax receipt is needed, which landlords are not willing to provide.

Hence, overall, individual male farmers still have an advantage in their access to land, irrigation and other inputs, the only exception being hired labour.

5.5
Dealing with free riding

The most important challenge in group farming is to make sure that everyone shares the work load equitably and completes operations in a timely fashion. Mechanisms for dealing with absences are therefore a critical part of successful group functioning. Both states follow somewhat similar mechanisms to check free riding.[34]

In Telangana, the absentee woman typically finds someone else to substitute for her in that period—some 57 per cent report this, with daughters-in-law being the most common substitute, but husbands, sons, daughters and even grandchildren also pitch in sometimes. Those who cannot find substitutes pay a fine equal to the prevailing market wage or contribute additional time at a later date. For short illnesses, some leniency is shown by the group and there is no penalty. In Kerala, JLGs follow similar mechanisms, but here replacement is typically by daughters or sons, and some 14 per cent mention paying a wage labourer to replace them, or paying a fine. Notably too, in some cases they forfeit their share of the output or profit if they have been absent for several months, something not reported in Telangana.

The fact that the women know each other, live in the same neighbourhood, and are often related to each other, makes it relatively easy to enforce accountability for absenteeism. What is more difficult to enforce if the group is large is equitable distribution of work loads among those present. Although there is no formal monitoring, in both Telangana and Kerala they have devised methods of task rotation: they form sub-groups for particular tasks and rotate the work among these subgroups across the week (Table 5-6 provides an illustration).

This system appears to work reasonably well, since they do not report any significant conflict over work sharing. There are additional advantages of such a rotation system, namely freeing the women to take on MNERGS or other wage work to supplement their family income.

34. The groups do not keep written records of work contributions. Everyone is expected to contribute equally, and lapses are dealt with on a case-by-case basis.

TABLE 5-5

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
Fine or wage equivalent	31	25.6	5	10.2
Sent coolie	–	–	7	14.3
Worked extra	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] This includes daughter, sister, sister-in-law or mother-in-law.

TABLE 5-6

Telangana: Example of weekly labour rotation for supervision

Name of member	Labour hours on given weekday, August 2012							
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
S. Baratavva	1 hr							1 hr
S. Padma		1 hr						1 hr
S. Manemma			1 hr					1 hr
S. Mallavva				1 hr	1 hr	1 hr		3 hr
S. Kanakavva							1 hr	1 hr
S. Sunitha			1 hr					1 hr
D. Balavva	1 hr							1 hr
D. Chiliukavva		1 hr						1 hr
B. Pochavva				1 hr				1 hr
B. Pushpalatha					1 hr	1 hr		2 hr
E. Laxmi						1 hr	1 hr	2 hr

Source: Author's survey: weekly data, Ellampally village, Karimnagar.

6.

ECONOMIC EMPOWERMENT: OUTPUT, NET RETURNS, AND OTHER GAINS

How do the groups perform in economic terms relative to the individual small farmers in their state? I examine this both quantitatively in terms of farm performance – productivity and profits – and qualitatively in terms of an expansion of women's capabilities. First let us consider farm performance.

6.1 Land use and cropping patterns

Notwithstanding their difficulties in leasing land the women's groups tend to use the land they do lease more intensively, since a larger proportion of them compared with individual farmers cultivate it in both seasons. In Telangana, 43 per cent of the SDGs relative to only 34 and 30 per cent of the individual farmers (NGFs and SWIFs) cultivated their land in both the *kharif* and *rabi* seasons (see Table 5-1 above).[35] In Kerala, however, the difference is slight, with 77 per cent of the JLGs relative to 74 per cent of individual farmers cultivating in both seasons, taking into account annual crops such as banana, coconut and rubber.

In Telangana, the SDGs grow mainly foodgrains – paddy, maize and various varieties of gram (pulses) – due to a strong push by APMSS that they should concentrate on foodgrains for household food security. Very few grow cotton, which is the main cash crop favoured by individual farmers in the area. Many of the groups that had ceased group farming by 2012–2013 cited this as an important reason for stopping, saying it was difficult to get good yields with food crops without irrigation, and, if allowed to, they would have preferred to grow cotton, which gives higher returns.[36]

> "*We want more profits from agriculture. APMSS staff restricted us to food crops. 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 make 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)

In Kerala, however, cropping patterns are more diverse. Even in Alappuzha district – a major paddy-growing area – not all cultivators grow paddy; many also grow vegetables and mixed crops. The Thrissur JLGs grow

35. India has two major crop seasons: *kharif* (broadly July to October) and *rabi* (broadly October to March/April). Summer crops can be grown in-between seasons. *Kharif* crops largely depend on the monsoon rains (which fall mostly during late-June to early September). *Rabi* crops need irrigation to grow well.

36. See also Agarwal 2014b.

banana, a wide range of vegetables, and various types of tubers. There is no pressure from the K. Mission to plant only food crops. And the vegetables and fruits are grown largely for the market. The influence of the K. Mission on crop choices is more indirect, such as through the training they provide for growing new crops or for preparing organic inputs, and the support they extend in terms of marketing outlets. Cropping patterns, in turn, make a key difference to the output performance of the farms and their profitability, as discussed below.

6.2
Yields and productivity

Table 6-1 compares SDGs, NGFs and SWIFs in terms of their total value of output over the year per hectare of gross cropped area (GCA), by district. We note that there are some district-specific disadvantages that affect all farms. Hence all farm types perform poorly in Mahbubnagar and better in Medak and Karimnagar. Nevertheless, in each district, SDGs perform less well than individual farms. Table 6-2 measures the statistical differences between farm types in their mean annual outputs for all crops as well as yields of foodgrains and cotton in the *kharif* season (the main crop season in the region).

TABLE 6-1
Telangana: Annual value of output per gross cropped hectare (Rs/ha)

	Medak			Mahbubnagar		
	NGF (183)	SWIF (79)	SDG (27)	NGF (150)	SWIF (65)	SDG (21)
Mean	62,451.29	60,898.31	39,880.71	29,643.20	27,829.79	23,055.14
Min.	6,227.05	2,790.84	4,767.07	1,412.03	3,953.68	5,281.87
Max.	221,979.50	261,289.00	91,185.77	166,734.50	83,098.72	75,119.97

	Karimnagar			All districts		
	NGF (152)	SWIF (64)	SDG (22)	NGF (485)	SWIF (208)	SDG (70)
Mean	66,498.84	57,367.63	45,325.85	53,572.97	49,478.03	36,544.37
Min.	3,448.63	16,045.36	15,444.07	1,412.03	2,790.84	4,767.07
Max.	228,572.30	122,803.80	115,707.00	228,572.30	261,289.00	115,707.00

Source: Author's survey: calculated from weekly data.
Note: Figures in brackets give the number of farms

We note from Table 6-2 that NFGs outperform SDGs in productivity both in *kharif* foodgrains and for all crops grown, but not in *kharif* cotton where the differences are not statistically significant. SWIFs also perform better than SDGs in terms of annual crop output (the differences are statistically significant), but not in *kharif* foodgrains alone or cotton alone. Indeed, overall, the performance of SWIFs falls in-between NGFs and SDGs: they perform less well than NGFs for some crops (e.g., *kharif* foodgrains) but as well as NGFs in terms of annual crop output/GCA. This suggests that SWIFs are able to reap many of the benefits enjoyed by NGFs but share some caste disadvantages with SDGs, such as in access to inputs, especially irrigation.

Overall, individual farms, whether cultivated by non-group farmers or sangha women's families, perform better than the SDGs, but with the consistent exception of cotton: on this there is no statistically significant difference between NGFs, SWIFs and SDGs. The choice of crops thus appears to be a major factor in how these farms perform in semi-arid, unirrigated conditions. The restrictions on SDGs in growing non-food crops, especially cotton, disadvantage them, apart from their limited access to irrigated land and other inputs. I find that these results hold even after controlling for inputs used and other variables in regression analysis. And in that analysis too, the percentage area under foodgrains is significant and negatively related to annual value of output of all crops.

TABLE 6-2

Telangana: Testing differences in yields of major crops and aggregate annual output by farm type (Rs/ha)

		Kharif: All foodgrains (Rs/ha)[a]		
		NGF	**SWIF**	**SDG**
Mean		36,167.92	28,956.74	25,079.35
Total farms		286	117	52
Pairwise t test (*t*-values)	NGF vs SWIF	2.706***		
	NGF vs SDG	2.978***		
	SWIF vs SDG	1.148		
ANOVA (*p*-value)[b]		0.009***		
Bonferroni (*p*-values)[b]	NGF vs SWIF	0.018**		
	NGFvs SDG	0.006***		
	SWIF vs SDG	0.984		
		Kharif: Cotton (Rs/ha)		
Mean		83,765.00	79,169.06	71,821.03
Total farms		259	103	16
Pairwise t test (*t*-values)	NGF vs SWIF	0.855		
	NGF vs SDG	0.983		
	SWIF vs SDG	0.696		
ANOVA (*p*-value)		0.4533		
Bonferroni (*p*-values)	NGF vs SWIF	1		
	NGF vs SDG	0.928		
	SWIF vs SDG	1		
		Total annual output of all crops (Rs/GCA)		
Mean		53,572.97	49,478.03	36,544.37
Total farms		485	208	70
Pairwise t test (*t*-value)	NGF vs SWIF	1.328		
	NGF vs SDG	3.683***		
	SWIF vs SDG	2.779***		
ANOVA (p-value)		0.001***		
Bonferroni (*p*-values)	NGF vs SWIF	0.518		
	NGF vs SDG	0.001***		
	SWIF vs SDG	0.030**		

Source: Author's survey: calculated from weekly data.
Notes: [a] Foodgrains include paddy, jowar, maize, red gram, black gram, green gram and ragi.
[b] ANOVA helps test for differences between the means of the three farm type categories taken together. The Bonferroni post-hoc test then helps assess pair-wise differences .
Two-tailed *t* test. *t*-values, significance: *** at 1%, ** at 5%.

The results for Kerala contrast with those of Telangana (see Tables 6-3 and 6-4).[37] Here too group and individual farms were compared in terms of their yields of two major crops – paddy and banana – as well as the total value of farm output per hectare of GCA. Paddy yields were assessed only for Alappuzha, since few Thrissur farmers were growing paddy, while banana yields are assessed only for Thrissur, since few were found growing bananas in Alappuzha. For both districts taken together, JLGs outperform JWIFs in annual farm output per hectare as well as in banana yields. In fact, the banana yields of JLGs are on average 1.6 times as high as those of the (typically male-managed) individual farms. The better performance of JLGs relative to individual farms in annual crop output and for bananas alone is also borne out by my ongoing regression analysis, which controls for input use and other factors.

TABLE 6-3

Kerala: Testing differences in annual output per gross cropped hectare by farm type (Rs/ha)

	Alappuzha		Thrissur		Both districts	
	JWIF	**JLG**	**JWIF**	**JLG**	**JWIF**	**JLG**
Mean	54,305.22	40,974.31	167,372.2	305,875.6	101,156.2	179,183.7
Min.	741.32	2,119.66	1,176.29	3,651.23	741.32	2,119.66
Max.	279,311.2	332,882.8	775,078	1,053,274	775,078	1,053,274
Total farms	106	33	75	36	181	69
	Difference in mean values: JWIF minus JLG					
Difference	+13,330.9		-138,503.4		-78,027.5	
***t*-values**	1.232		-3.114***		-3.189***	

Source: Author's survey: calculated from weekly data.

Note: Two tailed t-test. *t*-values, significance: *** at 1%.

TABLE 6-4

Kerala: Testing differences in paddy and banana yields by farm type (Rs/ha)

Crops / districts	JWIF	JLGs	JWIF minus JLGs	t-values
Paddy (Alappuzha)	80,741.02 (23)	69,548.15 (7)	+11,193.00	t = 0.962
Banana (Thrissur)	258,064.1 (17)	413,734.2 (14)	-155,670.10	t = 1.717*

Source: Author's survey: calculated from weekly data.

Note: *t*-values, significance: * at 10%.

Figures in brackets give the number of farms.

37. In the Kerala sample, seasonal crop comparison was not possible since many farmers grow perennials such as banana and coconut that last for almost the entire year, and they grow vegetables which can have more than one rotation per season.

These productivity outcomes are noteworthy on several counts. First, the Kerala results demonstrate that, notwithstanding their difficulties in leasing good quality land, women's group farming can succeed with some support, and outperform individual (almost entirely 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 are able to work the market by selling at the right time. Some Thrissur JLGs have contracts for supplying particular varieties of bananas to local temples , and most try and take advantage of high banana prices during the festival season of August and September.

Notably too, JLGs outperform individual family farmers, even though the latter benefit from the new knowledge of agricultural practices that JLG women carry over to their family farms.

> "*We get timely information for paddy farming from the Padashekara Samithi. For instance we received information about fertilizer application. This information also helped us with our individual farming*." (Ujwala JLG members, Alappuzha, Kerala)

> "*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)

Second, the contrast with Telangana reinforces the point that group formation alone cannot overcome other difficulties women farmers face in accessing land, irrigation and inputs. They need better access to good quality land, state support for technical information, training and incentives, and the freedom to grow ecologically suitable and commercially profitable crops. The group's composition (homogenously low caste), as noted, can also be a disadvantage in leasing land. The perceptions of some SDG women on why their performance is poorer than that of individual farms is insightful:

> "*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, so our yields will be lower*." (SDG members, Choutkur village, Medak, Telangana)

> "*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, cow bars, fertilizers and pesticides in time. Those who lease out tractors and cow bars for ploughing only come to our land after completing the work of the big farmers*." (SDG members, Kalwal village, Mahbubnagar, Telangana)

Local ecology plays a part as well. 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 and are more disadvantaged than individual farmers in this respect.

6.3
Net returns

Apart from productivity, the net returns per farm – obtained after deducting the cost of all purchased inputs from total output – are an important part of economic performance. In Telangana, we find substantial district-wise variability between SDGs and individual farms (see Table 6-5). SDGs outperform NGFs in Medak district but do much worse in Karimnagar and Mahbubnagar. Talking the three districts together, however, SDGs do slightly better than NGFs in their average net returns due to their lower expenditure on purchased inputs, but the difference is not statistically significant. Notably, both NGFs and SDGs do better than SWIFs (see Table 6-6). Of course, 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 6-5

Telangana: Average annual net returns per farm[a]

	Medak			Mahbubnagar		
	NGF	SWIF	SDG	NGF	SWIF	SDG
Mean	28,063.58	26,167.84	58,166.57	10,174.21	6,089.96	-995.66
Min.	-29,305	-27,630	-28,116.7	-60,908	-42,140	-24,969
Max.	286,514	357,872.3	210,471.1	195,891.2	242,060	45,047.5
Total farms	**183**	**79**	**27**	**150**	**65**	**21**

	Karimnagar			All Districts		
	NGF	SWIF	SDG	NGF	SWIF	SDG
Mean	41,732.96	17,920.00	21,698.65	26,814.80	17,355.71	28,956.56
Min.	-49,825	-29,280	-19,330	-60,908	-42,140	-28,116.7
Max.	258,361	175,743	91,165	286,514	357,872.3	210,471.1
Total farms	**152**	**64**	**22**	**485**	**208**	**70**

Source: Author's survey: calculated from weekly data.
Note: [a] Net returns = value of total output minus total value of purchased inputs.

TABLE 6-6

Telangana: Testing differences in annual net returns per farm by farm type

		All districts		
		NGF	SWIF	SDG
Mean		26,814.80	17,355.71	28,956.56
Total farms		485	208	70
Pairwise t-test (*t*-value)	NGF vs SWIF	2.52**		
	NGF vs SDG	-0.36		
	SWIF vs SDG	-1.84*		
ANOVA (p-value)		0.03**		
Bonferroni (*p*-value)	NGF vs SWIF	0.04**		
	NGF vs SDG	1.00		
	SWIF vs SDG	0.20		

Source: Author's survey: calculated from weekly data.
Note: *t*-values and p-values, significance: ** at 5%, * at 10%.

In Kerala, the picture is different. For individual districts and for both districts taken together, net returns per farm are significantly and strikingly higher for JLGs than individual farms. In fact, the mean net return per farm of Rs. 121,048 for JLGs is five times higher than that for individual farms (a few JWIFs do especially badly).

TABLE 6-7

Kerala: Testing differences in annual net returns per farm[a] by farm type (Rs.)

	Alappuzha		Thrissur		Both districts	
	JWIF	**JLG**	**JWIF**	**JLG**	**JWIF**	**JLG**
Mean	-105.1	15,629.2	57,050.8	217,682.9	235,78.3	121,048.5
Min	-223,663	-127,885	-26,156	-22,379	-223,663	-127,885
Max	56,895	207,245	1,027,825	1,691,857	1,027,825	1,691,857
Total farms	106	33	75	36	181	69
	Difference in mean values: JWIF minus JLG					
Difference (JLG – JWIF)	15,734.3		160,632.1		97,470.2	
***t*-values**	2.04**		3.49***		4.20***	
Total farms	139		111		250	

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

6.4

Perceived income gain

The members of both SDGs and JLGs divide the produce or the income they earn equally, after deducting costs. They similarly share the losses. Notwithstanding the variable returns in Telangana and Kerala, women's general perception in both states is that group farming has benefited them economically.

> "*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 after joining the SDG, everything has changed. Some of us are also using the knowledge we have gained for our own farms. As a result of all these factors, 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.*" (Karshakashree JLG member, Thrissur, Kerala)

6.5

Ability enhancement

Beyond productivity, however, capability enhancement can have economically empowering effects over time, and bring long-term productivity benefits for SDGs and JLGs as well as for their family farms.

In both Telangana and Kerala, qualitative evidence indicates that group farming has enhanced women's farming capabilities. First, they say they have developed stronger identities as farmers in their own right, rather than being counted simply as farm labourers or farm wives.

"*The long, strenuous, but successful efforts of the sangha women for the last two years have made them very confident of their collective strength and success. They now claim proudly: 'from the status of labourers, we are now farmers'.*" (APMSS, Annual Report 2003–2004)

"*JLG farming has helped me enrich my farming experience. Also, 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 requires women's groups to open bank accounts, keep track of funds, interact with both government and private agencies that provide extension, inputs and information, and negotiate in markets. This has familiarized them with the wide range of public institutions that farmers use. Some illustrative quotations from the women 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.*"

W5: "*We have acquired new agricultural skills after joining the SDG.*"

(SDG members, Andole village, Medak, Telangana)

"*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)

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

Third, both SDGs and JLGs have gained from a systematic transfer of agricultural knowledge and practices. This lasted only four to five years in Telangana, but continues on a regular basis in Kerala.

"*After becoming a JLG member I learnt to sow cheera seeds in a better way. We have to first put the seeds in water. Next day we mix these seeds with soil, then enfold them in a cloth and embed them in wet soil. After two days, they start to sprout. Then we transplant them in the trench. This method helps avoid ant attacks.*" (Mahima JLG member, Alappuzha, Kerala)

"*They are giving us training on how to prepare organic fertilizers and pesticides. We have attended five to six such training classes conducted by Kudumbasree.*" (Holi family JLG members, Thrissur, Kerala)

Fourth, they have learnt to negotiate in multiple markets: land markets (for leasing land, judging its quality, assessing its price, negotiating the lease terms, etc.), as well as input and output markets.

"*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 managed to negotiate access to storage yards in market centres for storing their produce.[38]

"*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*

38. Author's interview with P. Prasanthi, Director, APMSS, 2015.

their produce, negotiating with buyers, and, if necessary, negotiating for physical space in the market yard to keep their produce there for a few days till they decide to sell it." (P. Prashanthi, Director of APMSS)

Fifth, especially in Kerala, women who have trained as master farmers not only serve as a resource for the JLGs but also build leadership among women, and enhance community respect for women as farmers. Many women, in both states, also say (as quoted above) that they use what they learn as JLG members on their individual farms. This is an important externality in terms of knowledge transfer. The high levels of education of the JLG women also play an enabling role in this regard.

Sixth, especially in Kerala again, JLGs, as noted, have used MNREGS in innovative ways on their group farms, especially (but not only) for land preparation. In this way, they can earn some income for tasks they have to undertake in any case on their group farms. In Telangana, MNREGS is not integrated to undertake operations on the group farms, but women do mention going for MNREGS work as well as other wage labour for supplementary income. This is usually in the off-season when it does not conflict with their work on the SDG farms or their family farms. But, as noted earlier, they are also able to integrate SDG work with some wage work due to the large size of their sanghas, which allows them to rotate responsibilities without sacrificing wage work opportunities.

Seventh, formalization of the groups helps. Women of Sreedurga JLG in Thrissur (Kerala) outline these benefits lucidly:

"*Before joining the JLG we were doing Sanghakrishi, but 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.*"

6.6
Other economic gains

Apart from individual gain, there are gains to the community, since in both states the institutions initiating group farming – the APMSS, K. Mission and K. Network – cite examples of women's groups bringing fallow land under cultivation. APMSS gives a figure of 2,262 ha of fallow land being cultivated by SDGs across the 500 project villages in 2004. It also mentions 51 villages where the 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.[39]

In Kerala, 31,714 ha of fallow land (much of it in private hands) were systematically identified by the K. Mission some years ago, by involving the panchayats in each village. Of this, 40 per cent is now leased and cultivated by JLGs.[40] The land could well have lain fallow otherwise. Many groups have also improved the quality of fallow land.

39. APMSS Annual Report 2004–2005, pp. 73–74
40. Personal communication, Rahul Krishnan, K. Mission, Thiruvananthapuram, May 2016.

7.

SOCIAL AND POLITICAL EMPOWERMENT

Unlike the mixed economic effects of group farming in the two states, there appear to be unambiguous gains in terms of women feeling socially and politically empowered in both regions. However, there are some measurement and attribution issues that need to be kept in mind. First, while there are figures for political empowerment, social empowerment is not easy to measure and I rely on the women's self-perception, as expressed in the focus group discussions. Second, being part of an organized group can itself be socially empowering, and sometimes it can be difficult to separate the effects of, say, joining a sangha and forming an SDG in Telangana, or becoming part of a neighbourhood group and constituting a JLG in Kerala. Nevertheless, the qualitative evidence enables us to make persuasive links between group farming and non-economic forms of women's empowerment.

7.1 Social empowerment

In Telangana, sanghas were formed with the specific aim of social empowerment by increasing literacy, building self-confidence and social awareness, and taking group action against domestic violence and social exploitation. Although, as noted, gains are sometimes difficult to attribute solely to group farming, there are several reasons to believe that this has made an important difference. For a start, enhancement of women's economic capabilities has both economic and social benefits. For instance, women as farmers have to interact with a wider range of public institutions and officials than they would need to simply as *sangha* members. Exposure visits to meet farmers in other states is another horizon-widening dimension.[41] Most importantly, families and communities value *visible* economic contributions, and women seen to be contributing to household income enjoy a higher social status. Many SDG members now feel they are recognized for their contribution to household earnings and savings, and community respect is of primary importance, given that the SDGs are constituted predominantly of SC members. SDG members of Yerraram village, Medak (Telangana) gave the following example.

> "*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. And we are involved in solving village conflicts. So now villagers respect us and call us by our own names*."

An older experiment in group farming, undertaken in some of the same Telangana districts in the 1990s by the Deccan Development Society, provides many additional examples on this count.[42]

In Kerala, the link between group farming and social empowerment is again found to be strong, but in respects other than caste-related. Many of the JLG members here were previously housewives, with little exposure to economic institutions. They were also somewhat isolated from one another, except as neighbours. While NHG formation strengthened their social links, farming connected them economically and also made their work contribution visible in economic and physical terms.

41. APMSS, Annual Reports.

42. Agarwal 2003.

"*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)

In addition, those specifically trained in leadership roles, such as master farmers, not only feel empowered themselves but also indirectly empower other women by challenging social norms and demonstrating what women are capable of.

Hence it can be claimed that the experience of group farming has had a socially empowering effect, over and above that resulting from simply being members of sanghas or neighbourhood groups. The same is true for political empowerment.

7.2
Political empowerment

In assessing political empowerment, as noted, it is more difficult to separate the effect of being members of sanghas or NHGs from being part of SDGs or JLGs, but we can legitimately assume that what we see on this count is at least partly due to women's membership in group farms and the associated broadening of their social networks. Many members of sanghas in Telangana and of the K. Network in Kerala have been standing for local elections and winning.

In the study's three sample districts of Telangana, for example, 371 women won in the 2001 elections and 285 won in 2005, at various levels of the Panchayat Raj Institutions (see Table 7-1). For sangha women, this is of particular importance since they are mostly SCs and some want to invest in community infrastructure. As one SDG member from Medak district reported: "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 (that is, 46.6 per cent) of them won. This was at all levels of the K. Network from CDS down to the NHGs.[43] 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 (see Table 7-2). All major political parties – including the Communist Party of India (Marxist) (CPI(M)), Indian Union Muslim League and Bharatiya Janata Party (BJP) – inducted some Kudumbasree candidates.[44] Of the K. Network women who stood for elections, 46.5 per cent won. Overall they won 34 per cent of all ward seats and 52 per cent of all leadership positions.

43. Varghese and Mavoothu 2014.
44. See, e.g., http://www.thehindu.com/news/national/kerala/kudumbasree-flag-flies-high/article7779185.ece

TABLE 7-1

Telangana: Women winners in 2001 and 2005 local government elections

Name of the district	Year of election	Ward member	Sarpanch	Mandal Parishad	Zilla Parishad	Total positions won
Medak	2001	73	6	3	3	85
Mahbubnagar	2001	166	23	3	3	195
Karimnagar	2001	64	13	7	7	91
Total		303	42	13	13	371
Medak	2005	70	4	2	1	77
Mahbubnagar	2005	72	13	2	1	88
Karimnagar	2005	98	7	5	0	110
Total		240	24	9	2	275

Sources: For 2001 figures, see APMSS Annual Report 2003–2004; for 2005 figures, see APMSS Annual Report 2005–2006.

TABLE 7-2

Kerala: Women winners in 2015 local government elections

Total seats available across all wards in Kerala	Kudumbashree members participating in elections	Winners from various posts	Percentage of total wards with Kudumbashree winners	Kudumbashree members elected as office bearers[a]
21,682	15,863	7,376	34.0	313

Source: http://www.kudumbashree.org/?q=ataglance

Note: [a] The positions elected include panchayat president, block president, municipal chairperson, district panchayat president and corporation mayor.

8.
REFLECTIONS AND LESSONS LEARNT

8.1
Reflections

Both Telangana and Kerala launched women's group farming for livelihood enhancement and social empowerment around the same time, but they differed in many respects: the organizational structure of implementation, the extent and period of state support, group size and composition, 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 a wide range of state institutions, from banks to government agricultural departments, as well as private markets for land, inputs and products. It has given them an identity as economic actors and not just social actors, and enhanced their status within families and communities as contributors to livelihoods. It has also led many to seek political office.

Moreover, it is notable that in both states, women in SDGs and JLGs have brought fallow land under cultivation, and a larger proportion of them than individual farmers tend to use the land they cultivate more intensively, by cultivating in both seasons. In other words, they have improved land quality by making it cultivable and put the land – a scarce resource – to greater use. The qualitative evidence also indicates that the women in both regions are better off in economic terms than if they had not formed groups.

On the economic performance of group farms compared to individual farmers, three points are especially notable. First, in terms of farm productivity, Kerala's JLGs do much better than Telangana's SDGs in relation to the individual farms in their respective regions. Second, in both states, groups perform much better if they are not cultivating traditional food crops (such as paddy) where access to particular types of land matters, and where individual farmers owing good quality land have an advantage. In Telangana, for instance, groups do worse than individuals in *kharif* foodgrains and annual value of output, but not in *kharif* cotton. Third, despite the overall poorer productivity of SDGs in Telangana, they are able to make up for this to some extent (if not entirely) in terms of annual net returns per farm by saving on purchased inputs, especially hired labour. And Kerala's JLGs do strikingly better than individual farms in annual net returns per farm. Hence, as with productivity, so with profitability, Kerala's JLGs perform much better than Telangana's SDGs.

Several factors are likely to underlie the differences in the performance of Telangana's SDGs and Kerala's JLGs, such as: (i) the limited and short-term state support received by SDGs in Telangana compared with the continuing government support received by JLGs in Kerala, which helps the latter overcome many of the gender-specific disadvantages women farmers face; (ii) the local ecology and economy: while both SDGs and individual farmers in Telangana are located in ecologically poor regions, SDGs are much more dependent on rain-fed agriculture and lack the means to overcome unfavourable climatic conditions, while Kerala has fairly favourable climatic and ecological conditions so that JLGs do not face a special hurdle in this respect; and (iii) the emphasis by APMSS that SDGs should concentrate on foodgrains despite their poor access to irrigation, and even though many of the individual farmers in the same region grow cash crops, especially cotton. In contrast, JLGs, like the individual farmers in their districts, are free to respond to market opportunities and face no pressure to focus on foodgrains.

Differences are also embedded in the conceptualization of the initiatives. SDGs are typically of very large size, composed almost entirely of SC women, many of whom are over 60 years of age and illiterate, while the Kerala JLGs are constituted of five or six relatively younger women of mixed caste, well-educated, and with wider social networks. Importantly, the SDGs were established under the Mahila Samakya 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.

8.2
Lessons learnt

Based on the above analysis, what lessons can we take forward? Which kind of model might work better, and what principles and mechanisms could make group farming more viable, sustainable and potentially replicable? Clearly, while group farming has substantial potential for empowering women in multiple ways, it will need to be carefully structured and fostered to be successful.

First, and perhaps most fundamentally, there is a need to ease the land constraint. Land leasing, although common in both states, is formally banned in Kerala and restricted in Telangana. Hence the women's groups typically do not manage to get written leases. This makes it difficult for them to prove they are farmers when applying for government subsidies and incentives or seeking compensation for crop failure. Where the facilitating NGO exerts pressure on landlords to sign written leases (as in many Telangana cases), landowners are reluctant to lease out their land on the grounds that they will lose it to the tenant. Basically, wide-ranging tenancy reform is required that addresses the concerns of both parties – lessees and lessors.

The K. Network has recently devised a way of partially getting around this hurdle by providing JLGs with a letter certifying that they are cultivating leased land.[45] This document can go some way towards helping women prove to government agencies that they are farmers. But additional mechanisms also need exploring, such as helping women to jointly buy land. There is anecdotal evidence from Kerala that some of Thrissur's JLGs made enough profit to purchase land jointly for collective farming,[46] but for many more to do so will require other mechanisms. In undivided Andhra Pradesh, for instance, in the late 1980s the state government started a scheme for SC women to purchase land in groups. The land was registered in individual names but cultivated jointly.[47] Group registration and joint ownership could be an option as well.

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 mandated to produce, say, food crops, and are restricted from choosing the best options suited to local ecology and market opportunities, as in Telangana. The substantial success of the Thrissur groups in Kerala, which grew high value crops and explored niche markets, illustrates the benefits of technical guidance and economic incentives compared with directives. It also highlights the need to move away from a narrow conception of food security ('grow your own food') to a broader one of generating enough income to purchase food if needed. Notably, even JLGs performed better when not concentrating on traditional food crops such as paddy, for which access to good quality land matters a great deal.

Third, group size is important: both very small groups and very large ones face disadvantages. Overall, smaller groups can facilitate cooperation by reducing problems of coordination and providing a higher return per capita. Groups of six to 10 women (the size of many SHGs, and the typical size of JLGs) would probably work better, at least for economic activity, compared with some very small JLGs that have to hire a fair amount of additional labour, or the many very large SDGs in Telangana. In the latter, instead of

45. Personal communication, Rahul Krishnan, K. Mission, Thiruvananthapuram, 2017.

46. I heard details of several such cases in an annual experience-sharing meeting of JLGs that I attended in Thrissur in 2015.

47. Agarwal 2003.

one large SDG, each village could have several smaller SDGs, federated horizontally within the village and vertically to the district level or higher. This model would be similar to the federations constituted by SHGs in many states.

Fourth, groups that are more diverse in terms of women's caste and class help expand the social capital and networks that they can draw on, especially for accessing land. While extreme heterogeneity may be counter-productive, the Telangana model suggests that high homogeneity, where everyone is disadvantaged, could also prove to be a liability.

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 range between semi-formal to increasingly formal. Groups that are commercially oriented and successful could even become producer companies over time.

Sixth, embedding groups both within neighbourhood networks and in federations beyond their neighbourhoods can provide women with the support they need, not just locally but also 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 also helps expand that social capital by bringing neighbours together into group activity. On federations, however, both Telangana and Kerala provide interesting models that need to be studied for local fit.

Seventh, state commitment and support is the most striking feature of the Kerala model, compared with Telangana. As noted, the Kerala government has supported JLGs on a continuing basis and (unlike Telangana) not just as a short-term experiment. The commitment of the Kerala government helped the groups alleviate, if not entirely overcome, their production constraints. Linking group farming with complementary government schemes such as MNREGS also gives JLG women additional returns from their labour, even for cultivating leased land. Although the Telangana women are able to take advantage of local wage opportunities (including MNREGS) to some extent, due to the large size of SDGs and task rotation, MNREGS is not integrated into the SDGs' farm work. Such integration would benefit the women.

Eighth, supplementary cooperative structures have played an important role in the Kerala model, such as the Padasekara Samitis that lease out machinery to paddy farmers. Machine leasing could be extended to cover all farmers, irrespective of crops grown, with a special effort made to include women as members. Machines could even be designed for women's ease of use. Examples from other countries also hold lessons. In France, for instance, many farmers are members of CUMAs (Agricultural Machinery Cooperative Units), from which they lease machines as and when needed, with the members collectively working out a schedule to cover each one's needs.

Ninth, groups need both internal and external mechanisms for regular monitoring. For example, almost none of the groups or individual farmers, even in Kerala, keeps 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 understand where support is needed for accessing incentives and subsidies and raising output. Especially in Kerala, with its high educational levels, the well-educated JLG members could be trained to keep farm accounts on a regular basis.

Tenth, a systematic database is needed to track and monitor the groups in terms of their economic performance (profits and losses, being active or becoming inactive). Both SDGs and JLGs would benefit from such monitoring. For instance, it would provide an alert both if a group is making losses and needs support, and if a group is making profits from which other groups could learn. In Telangana, even during the five intensive years of the UNDP-GoI project, the economic returns of the programme were not effectively monitored and evaluations were rare. And although Kerala has a large database that tracks group formation, group social composition, and the crops grown, the system is not set up for monitoring economic performance.

Eleventh, doing group farming alongside individual family farming has both advantages and disadvantages. On the positive side, women enjoy some autonomy from the patriarchal relations that tend to dominate family farms. On the negative side, they can face conflicting demands on their time. Here additional models could be explored, such as women becoming formal partners within family enterprises (rather than being unpaid workers with few rights). Group farms in France, such as GAECs (*Groupements Agricoles d'Exploitation en Commun*), provide one such model where both spouses (and more generally family members) can be registered formally as partners.[48] Formalizing production relations within families and making women partners in the farm enterprise would empower them to participate on a more equal basis in farm decision-making and profit-sharing.[49]

Finally, for promoting similar initiatives in other states, apart from the lessons outlined above, the central design feature of the Kudumbashre programme is of key importance, namely the three pillared interlinked governance structure of K. Mission, K. Network and PRIs. These pillars provide both ongoing state support and autonomy for the group farms. 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 for programme success.

48. Agarwal and Dorin 2017.

49. This is not unusual in industrial enterprises even in India, but has not been attempted to my knowledge in agricultural enterprises.

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UN Women supports UN Member States as they set global standards for achieving gender equality, and works with governments and civil society to design laws, policies, programmes and services needed to implement these standards. It stands behind women's equal participation in all aspects of life, focusing on five priority areas: increasing women's leadership and participation; ending violence against women; engaging women in all aspects of peace and security processes; enhancing women's economic empowerment; and making gender equality central to national development planning and budgeting. UN Women also coordinates and promotes the UN system's work in advancing gender equality.

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