CHAPTER 10

Realizing Climate Justice through Agroecology and Women's Collective Land Rights

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Introduction

The feminization of agriculture, or the sharp increase in the number of women in farming, is the result of a deep and ongoing agrarian crisis. Some scholars have more aptly named this phenomenon the 'feminization of the agrarian crisis' to capture how the ongoing agrarian crisis places a greater burden on women farmers than it does on their male counterparts. Patriarchal norms and attitudes prevent women from owning and controlling land, and women from marginalized castes and classes are the most disadvantaged (Pattnaik et al. 2018). Over 70 per cent of women in rural India are engaged in farming, but since the majority do not formally own land, they are not officially recognized as farmers and are instead considered as 'farm helpers' (Agarwal 2021). Given the substantial inequalities that affect women's ownership of and control over land, they cannot avail the benefits of land ownership – economic security, social status, and state support, among others.

This chapter looks at climate justice in the context of women in agriculture. Climate change and gender inequalities are deeply intertwined. Governments and civil society actors have launched various programmes aimed at climate resilience and adaptation in agriculture. However, when analysed through the lens of climate justice, these efforts do not always promote social equity. On the contrary, in some cases, mainstream climate solutions threaten women's land rights and farm-based livelihoods. Using the novel framework of agrarian climate justice, which combines ideas from agrarian justice and climate justice, we explore women's land rights within agroecology programmes in India. We argue that advancing women's collective land rights through climate initiatives can achieve the twin aims of climate resilience and agrarian justice. We focus on agrarian land and do not look at forest lands, which, although equally important, are outside the scope of this chapter. Drawing from feminist scholars' work on intersectionality, we emphasize the importance of an intersectional understanding of the differences between women based on intersecting identities of caste, class, age, education, and marital status, among others (Lutz, Herrera Vivar, and Supik 2011). Such an understanding is important to ensure that climate policies reduce, instead of reproduce, inequalities.

Globally, peasant women's rights have received increasing attention from social movements concerned with agrarian and climate justice, which often overlap. One example is the global peasant movement La Via Campesina (LVC), for which the commitment to peasant women's rights was born as a result of women demanding and gaining leadership roles and space within the movement. LVC's emerging concept of popular peasant feminism recognizes structural causes of gender inequality and peasant women's rights to decision-making and resources, particularly land (Val et al. 2019). In India, the Mahila Kisan Adhikaar Manch (MAKAAM), the women farmers' rights platform, came into being because women had become invisible in agrarian policy and were not recognized as farmers despite their predominant role in agriculture. MAKAAM has been working to secure women farmer's rights and entitlements to receive equal support from the state, particularly in matters of land access and ownership. Both these networks see ecological approaches like agroecology as key elements in their feminist vision of a sustainable and just world. This chapter substantiates the conversation on agrarian climate justice through the perspectives of two Indian women farmers' collectives working in Tamil Nadu and Kerala.

In the next section, we introduce the framework of agrarian climate justice. This is followed by background information about women's land rights in India. We then present our two case studies, which are the Tamil Nadu Women's Collective (TNWC) and Kudumbashree in Kerala; both organizations seek to integrate women's livelihoods and collective land access with agroecology. We then offer key insights based on an analysis of the case material and reflect on the prospects of agrarian climate justice before concluding.

Conceptual foundations and methods

Climate change-related politics are increasingly linked to land, with an ongoing contest between grassroots actors like small farmers, indigenous peoples, and

women on one hand and powerful market actors on the other. The link between land rights and climate interventions has been explored through the novel concept of 'agrarian climate justice' proposed by Borras and Franco (2018), which combines the principles of agrarian justice with climate justice. The concept of agrarian justice is related to struggles for recognition of land rights and redistribution and restitution of land, particularly for dispossessed groups like women. Climate justice is about equality and justice in the distribution of responsibility, impacts, and benefits accruing from solutions to climate change. Land is central to both climate justice and agrarian justice, and agrarian climate justice advocates the linking of social movements and the analyses of policies and programmes related to them.

Agrarian climate justice differentiates climate interventions promoted by the two sets of actors – market actors and grassroots actors – from their effect on land politics. Socially just land policies work towards regenerating nature while recognizing, redistributing, and returning land to the dispossessed (Borras and Franco 2018). In contrast, climate projects led by market-based actors and market processes threaten to dispossess rural populations of their lands to facilitate continuous capital accumulation. This approach tends to strengthen landed classes and agribusinesses while obfuscating redistribution. An example from India is the large-scale solar farms that have displaced vulnerable communities and facilitated the appropriation of village commons by renewables promoters (Yenneti, Day, and Golubchikov 2016). Land acquisition and popular movements against it have been well documented, but because of the lack of formal land titles for women, much of this discourse leaves out issues related to women farmers, which are linked to discussions on gender justice within climate justice.

Currently, gender justice in climate justice literature falls into three broad categories (Michael et al. 2019). The most prominent one highlights the gendered impacts of and vulnerabilities to climate change. The second category underlines the vital role women play in conserving the environment and promoting sustainability owing to their differential knowledge, roles, and stakes in ecological preservation. For example, Agarwal (2010) shows that in community-managed forests of India and Nepal, women are more responsible for firewood and fodder while men are more interested in timber. Such differing interests gave women a greater stake in forest preservation. The third category, building on the first two, advocates increasing the participation of women in decision-making processes and governance as a means to reduce gender injustice. Scholars point out that while these categories are all important, such conceptualizations also lead to problematic narratives around gender, deflecting attention from inequalities and power relations. For one, there is a tendency to portray women as a homogenous group and as vulnerable victims

(Crease, Parsons, and Fisher 2018). Second, they encourage an instrumental view of women – seeing them as responsible for making their families climate-resilient – leading to policies and practices that facilitate a feminization of both vulnerability and responsibility (Bendlin 2014).

Recent feminist scholarship has argued for a deeper intersectional analysis of climate interventions (Crease, Parsons, and Fisher 2018). An intersectional analysis considers inequalities not only between but also within genders, as depending on how they are situated, women have different vulnerabilities and adaptive capacities. Furthermore, it considers multiple identities working together to construct power or powerlessness. Gender intersects with other identities like caste, class, race, physical ability, and sexual orientation, among others. Not conducting such an intersectional analysis can lead to climate policies and practices that worsen rather than reduce inequalities, prompting gendered climate injustices.

Using Borras and Franco's (2018) framework for agrarian climate justice, gender-just climate interventions must accommodate recognition, redistribution, and restitution of land and other resources that are crucial for sustaining women-led agroecology. An intersectional approach steers the discourse away from the homogenization and essentialization of women and instead highlights the differences between women based on identities like caste, class, education, and marital status. Such a gender-focused intersectional analysis is a unique contribution to Borras and Franco's emerging framework for agrarian climate justice, which does not examine the question of women farmers' land rights.

Recognition entails acknowledging women's right to land; in India, this includes Dalit, Adivasi, or poor peasant women. Indeed, older women, single women, or women with disabilities within each of these social groups occupy an even more disadvantageous position. Redistribution of land to women is urgent where the means of production, especially land in rural areas, are monopolized by a few; in India, redistribution is a particularly pressing need among women who experience injustices borne of the intersection of multiple disadvantages. Restitution is relevant to those who have lost their land because of corporate or other types of resource grabs. It is also applicable to women - for example, widowed or divorced women - who may have lost land titles to other family members despite legal provisions to the contrary; in India, this includes Adivasi women whose forest commons have been grabbed for dams, mining, and other forms of resource extraction. Each of these dimensions must be examined from an intersectional perspective, with a focus on the recognition, redistribution, and restitution of the right to land for those individual or groups of women who hold a marginalized position, such as women from historically landless castes and classes.

To investigate the questions surrounding intersectional agrarian climate justice, we review policy documents, programmatic reports, non-governmental organization (NGO) reports, and social movements focused on two case study sites – the TNWC in Tamil Nadu and the state-wide Kudumbashree programme in Kerala. Additionally, we include information from qualitative interviews with leaders of the TNWC and scholars and activists of MAKAAM. We also draw from our association with the Karnataka chapter of MAKAAM, which has deepened its work related to women's collective farming efforts and organized various conversations and meetings on the topic with government officials, activists, and scholars, including the authors.

Background: land inequality and feminization of the agrarian crisis in India

Feminist scholars argue that landlessness is one of the most significant causes of female oppression in India (Agarwal 1995, 2003). Land access can provide both direct advantages like the ability to farm and indirect advantages that can take several forms, such as increasing bargaining power within and outside the household, enhancing social status, allowing access to state support, and encouraging the recognition of women as farmers. Additionally, there is some evidence that children of women with land tend to have better educational and health outcomes (Landesa 2012). Individual ownership also enables women to participate in credit markets using their land as collateral, but this comes with the dangers of land alienation and entrenches patterns of financialization (Collins 2019).

One important challenge in understanding women's land control is the lack of gender-disaggregated data in relation to land ownership since land title records are not digitized and most states do not collect data by gender (Swaminathan 2013). The only gender-segregated data that come close and allow some approximation are on operational land holdings (Table 10.1). An operational land holding is used wholly or partly for agricultural production and functions as one technical unit regardless of the title, legal status, farm size, or location. Agricultural census data from the Government of India reveal that 73.2 per cent of rural women workers are engaged in agriculture but that women control only 13.96 per cent of operational land holdings (Ministry of Statistics and Programme Implementation 2017). Moreover, even if women control 13.96 per cent of the land, it does not mean that they own this land since the data on operational land holdings do not account for title or ownership. There are significant gaps between women's legal rights and their actual inheritance of land and between the limited ownership rights women enjoy and their effective control over land. The gaps are mainly due to (*a*) gendered identities and social

	Number of operational holdings	Area operated (hectares)	Percentage of total (no. of holdings)
Men (all social groups)	125,751	137,784	85.80
Women (all social groups)	20,439	18,493	13.96
Women (Scheduled Castes)	2,329	1,584	1.50
Women (Scheduled Tribes)	1,612	1,984	1.10
Total (all social groups; men and women)	146,454	157,817	100.00

Table 10.1 Operational land holdings of women from different social classes in India

Source: Agricultural Census (2015-2016).

norms, which often restrict women's ability to articulate and exercise their right to inherit land, and (*b*) institutional practices, which are based on conventional maledominated understandings of land ownership and inheritance (Sircar and Pal 2014).

The data point to skewed land ownership patterns both between genders and among women from different social classes. The data in Table 10.1 show that women from Scheduled Castes (SCs), the official term for Dalits, control only 1.5 per cent of the total land holdings in India, while women from Scheduled Tribes (STs), or Indigenous Peoples, control 1.1 per cent. Dalit women not only control less land than women from the so-called higher Hindu castes but are also mostly involved in agriculture as labourers rather than cultivators; this has a negative impact on their status. Other studies show that single women (unmarried, divorced, abandoned, or widowed) are the most vulnerable even within these social groups (Sircar and Pal 2014). These data and research findings make an important case for using an intersectional approach to study land access, as they highlight the social positions of women depending on their identities.

Recent structural changes in Indian agriculture have led to the increasing feminization of agriculture – women are participating in agriculture in larger numbers, as is evident in the rise in the percentage of land holdings operated by women between the last two agricultural censuses (Table 10.2). However, somewhat counterintuitively, the increasing feminization of agriculture is not necessarily linked to women farmers' empowerment (Pattnaik et al. 2018). Feminization is driven by an ongoing agrarian crisis that has rendered farming unviable for men. Moreover, the outmigration of men towards more viable livelihood opportunities has resulted in the growing labour contribution of women in agriculture. This adds

to the already heavy work burdens of women and to the further deterioration of women's working conditions. Although an increasingly large number of women manage household agriculture operations, instead of being recognized as owner cultivators, they are regarded as agricultural labourers. Therefore, despite women's role in farming, they remain invisible. The lack of land titles, for instance, prevents women from being recognized as farmers in governmental programmes, such as those meant to subsidize the distribution of farm inputs or to facilitate easy access to rural agriculture credit. The situation is slightly improved in south Indian states like Andhra Pradesh, Tamil Nadu, and Kerala, which tend to have better land rights for women as compared to the rest of the country (Table 10.2). Nevertheless, the extent of overall landlessness is higher in all three states than in the rest of the country, with landless households at 73.41 per cent in Tamil Nadu, 72.50 per cent in Kerala, and 73.37 per cent in Andhra Pradesh, according to the latest available data (Ministry of Rural Development 2011). The struggle to secure women's land rights thus needs to be viewed in the context of the larger struggle for land rights for the landless poor.

The data in the table show standard land holding patterns in India, with a focus on operational land holdings. This unit of analysis has severe limitations, as it disguises problems like the fragmentation of operational holdings. It also does not take into account the ways in which landless women access land: increasingly, women are doing so collectively in some states. Given that the majority of India's rural women are landless, they encounter severe barriers, such as a lack of resources like land, inputs, capital, and skills, among others. Although institutions like the World Bank promote individual land rights within a liberal market-based framework, feminists note that without addressing broader social, political, and economic structures, individual land titles tend not to work for women (Jackson 2003). For instance, providing individual land titles without complementary support like inputs, training, credit, and culturally aware implementation will not result in any productivity gains, nor will it have transformative potential for gender relations. Contrarily, group farming

	Percentage operated by women	
	2010-2011	2015-2016
Andhra Pradesh	22.10	30.09
Kerala	15.00	29.38
Tamil Nadu	16.60	21.02
All India	10.90	13.90

Table 10.2 Operational holdings of women and women cultivators by state in 2010–2011 and 2015–2016

Source: Agricultural Census (2015-2016).

provides viable support for women to overcome such constraints by increasing their bargaining power and empowering them to pool resources, especially finance and land.

Women's land inheritance is governed by national laws, like the Hindu Succession (Amendment) Act, 2005 (HSAA), which ensures an equal share in ancestral property for men and women. HSAA was a significant move towards gender equality since land tenure rights were heavily biased against women in India before 2005. However, 15 years after its enactment, the ground reality is that women still do not inherit land on an equal basis with men. There are both formal and informal barriers to the implementation of HSAA and to the protection of women's right to land inheritance. Informal barriers include patriarchal pushback within the family such as resistance from brothers and parents, and cultural practices like dowry, because of which parents prefer to give dowry to their daughters and gift land to their sons (Landesa 2013). Formal barriers include lack of awareness and commitment among village councils and local land revenue staff who are meant to help enforce the act. Moreover, complicated procedures and administrative systems undermine women's ability to benefit from the law. Additionally, the HSAA does not apply to about 24 per cent of India's population comprising Muslims and Christians, who follow their own customary laws and have also traditionally excluded women from land ownership (Sircar 2016).

Tenancy laws, including land reform laws that impact women's access to land, are governed by states in India, so they vary across the country. All states have enacted reforms regarding the rights of tenants, labourers, and other farmers, but most have not accommodated women's land rights in a meaningful way (Chowdhry 2017). Despite the existence of the HSAA, there is legal ambiguity in its application to agricultural land, which falls under states' authority. Indeed, states have often overridden the HSAA with state-level land laws for agricultural land. One such example is the Uttar Pradesh Zamindari Abolition and Land Reforms Act, 1950, which discriminates married from unmarried daughters, as, in most cases, the former cannot inherit land (Mishra 2019). However, a 2019 Supreme Court decision has settled that agricultural land can be legislated by both central and state authorities, thus opening the doors for Hindu women to get succession rights to agricultural land under the HSAA (Supreme Court of India 2019). But in most cases, even if land records contain the name of a woman, the land is effectively controlled by male members of the family (Sircar and Pal 2014). Besides, inheritance is only possible for women from landed families. Women can also access land through government redistribution, land purchase, or by leasing directly from landowners. However, land redistributions have not historically worked in favour of women because of gender bias in state-led land reforms (Haque and Lekshmi Nair 2014). Moreover, purchasing is not easy, given land scarcity, prohibitive costs, and cultural norms that prevent women from accessing the necessary finances.

Under these conditions, land leasing has turned into an important path for women to access land, particularly via landless women's collectives formed by civil society groups or government institutions working with women from marginalized backgrounds (Agarwal 2003). Yet, the dynamics of group leases and agroecological enterprises remain inadequately documented and analysed. Next, we investigate two illustrative cases to inform our analyses in this chapter.

Case studies: group approaches to women's land access in two south Indian states

We present two programmes that promote climate-resilient agroecological farming while strengthening landless women's access to land, mainly through collective farming. We selected these cases because they offer unique perspectives on women's group farming and agroecology. Kudumbashree is an emblematic success story, achieved in part due to progressive policy interventions. TNWC is a case where policies on women's land access and agroecology are weak but women's movement efforts are prominent. Pragmatic reasons, such as having contact with these groups and being able to access programmatic documents easily, also played a part in our choices.

Tamil Nadu Women's Collective¹

In Tamil Nadu, high levels of landlessness coupled with neoliberal reforms have led to a repurposing of agricultural land for non-agricultural uses. This has restricted the availability of arable land for landless women, particularly those from marginalized communities (Murthy 2017). In 2020, when we wrote this chapter, there was no large-scale organic farming programme in the state, although activists were demanding an agroecology policy. Tamil Nadu has a few programmes for rural women, most of which tend to focus on credit and livelihoods. Mahalir Thittam is a women's self-help group (SHG) building and poverty alleviation programme that operates in both urban and rural areas targeting women from poor households. The Tamil Nadu Rural Livelihoods Mission (TNRLM) is a livelihood-focused poverty alleviation programme linked to the Indian government's National Rural

¹ This information is based on several interviews the authors conducted with Sheelu Francis of the TNWC between June and August 2020.

Livelihoods Mission (NRLM), which includes some support for sustainable agriculture. The NRLM promotes agroecology to enhance women's livelihoods and climate resilience. In particular, one of the NRLM's more recent programmes, Mahila Kisan Sashaktikaran Pariyojana (MKSP, translated as 'Women Farmers' Empowerment Programme'), focuses on women and agroecology and is being implemented through the TNRLM. The MKSP programme aims to support 42,359 women in undertaking agroecological methods; however, there is no specific focus on landless women (Murthy 2017).

Women's land access in the state is due less to policy and more to do with the self-led initiatives of SHGs and the presence of a strong women's land rights movement that has helped landless women file petitions with the state to access unused government lands (Murthy 2017). A key member of the women's land rights movement in Tamil Nadu is the TNWC, a state-level federation of women's groups founded in 1994. With a membership of over 150,000 women, the TNWC is spread over 16 districts in Tamil Nadu. In its initial years, the TNWC provided counselling and legal aid to women who were victims of sexual violence, particularly castebased sexual violence, which commonly arises in conflicts with landlords. Over time, the organization has expanded its activities to include sustainable solutions to food security and health. In this context, a focus on agroecology and land access has become one of the key pillars of the collective.

The TNWC organizes women into SHGs called *sangams*. These *sangams* engage in group savings to improve women's financial security and access to credit.

TNWC leaders note that women come together in groups to share farming resources, particularly land. Most of the TNWC's members are Dalits and tend to be either landless labourers or cultivators of small plots of land. Many of the women are single - either widowed, abandoned by partners, or unmarried - who singlehandedly shoulder the responsibility of running their households. Most have no education. The women face discrimination for being Dalit and single, and rarely have access to land or other types of support from the government. Less than 10 per cent of TNWC members have land titles to their name. But the TNWC recognizes women's fundamental right to land and provides political education for women around this right. Some of the sangam members have been approached by state agencies to join state programmes. However, as an NGO, the TNWC does not have any formal role in the Mahalir Thittam or the TNRLM. Sheelu Francis of the TNWC points out that the TNRLM does not provide any land access support, which leaves out landless women, who tend to unify under social organizations like the TNWC. The TNWC assists 81 women's groups consisting of 715 members in total to engage in group farming over 91.74 acres.

The TNWC supports land access in a number of ways. It assists sangams in approaching the local government to make public land redistribution claims. But government officials are often apathetic, which causes delays and disappointments. The TNWC advocates for collective as opposed to individual land grants. The latter do not guarantee women control over the land and do not prevent land from being bequeathed to sons and thus taken out of women's hands. It encourages the sangams to use their own savings to purchase land from the market but notes that the high cost of land is prohibitive. Indeed, the most common way for women to access land is by leasing it. This is done via a lease agreement with a landowner who is oftentimes a woman, such as a widow who may have inherited, but does not cultivate, the land. Such single women are invited to become part of the group via a share-cropping arrangement. To minimize lease payments, the TNWC members split the costs and share a third of the produce with the landowner. This encourages landless women to make alliances with landed single or older women who cannot work on their land themselves. Such women are more easily able to enter into joint cultivation arrangements if they are the sole owners of their land rather than joint owners with their husbands.

Land leasing is often fraught with insecurity for women. Often, when landowners see the land improve after agroecological farming, they want it back for themselves. *Sangams* therefore prefer longer and formal leases, for at least five years, but most landlords prefer informal leases so that they can take the land back anytime; this practice is restricted under Tamil Nadu's land lease laws. The TNWC currently advocates for long-term secure land leases for women's *sangams* in cooperation with the Tamil Nadu government.

In addition to promoting access to land, the TNWC supports *sangams* with credit and training on saving and thrift activities. Members contribute at least ₹100 per month to their *sangam* – this is pooled to support joint farming activities and loans for members. The TNWC gives an initial loan or seed capital of ₹4,000 to each group to supplement the women's own investments. As institutional or even informal credit is usually unavailable to landless women, the seed capital helps to fill this gap. When returned, the funds are passed on to another group.

The TNWC trains *sangam* members in technical aspects of farming like crop selection, agroecology, water conservation, and seed saving. During such training sessions, participants discuss relevant topics like violence against women, women's land rights, sustainable diets, and climate change, among others. The TNWC has also designated one or two model farms in each of the 16 districts, which serve as demonstration and training facilities for newer groups. Some women's groups maintain seed banks that facilitate the sharing of seeds within the network. Given

that drought is a serious problem in many of the villages, millet-based farming is encouraged; this has helped the women's groups adapt to dry conditions while contributing to household food security.

The TNWC's work has led to several positive outcomes for its members. The building of strong social networks for women farmers has helped women resolve a number of problems and fosters confidence in them. The groups facilitate peer learning and the pooling of risks related to crop failures due to drought. *Sangams* also help with food security and access to credit for landless women, many of whom face absolute poverty. Further, growing food through *sangams* and having an assured source of income greatly enhances food security for families.

The women farmers share that group farming has brought them more respect in their community. In the initial days of the group's formation, community members and upper-caste landlords subjected them to scrutiny, gossip, and ridicule. However, this has changed, as the women have persisted and succeeded in farming. Now, male farmers even ask them for seeds and farming advice. The women have also had a positive impact on youngsters who grow up seeing their mothers and sisters as role models.

Kudumbashree, Kerala

Kerala has long been known for its relatively successful abolition of feudalism and land reforms that were effected in 1970s. Yet the state's land reforms have reinforced patriarchal norms by identifying the marital family as the unit of reforms (Kodoth 2009). More than a fourth of those who lost land as a result of land reforms in the state were widows (Haque and Lekshmi Nair 2014). The post-reform period led to a decline in women owner cultivators and a consequent rise in women's farm work within the context of the family as well as the outmigration of men. Changes in dowry practices in recent times have also affected women's land inheritance. Daughters previously got land as part of their inheritance, mainly in matrilineal families, but as dowry practices have gained wider acceptance, parents prefer to give movable property or cash, which can be invested elsewhere. This has further reduced women's land access through inheritance (Kodoth 2004).

One key path for marginalized women in Kerala to land access is the state's poverty alleviation and livelihoods programme. Kudumbashree was initiated in 1998 under the NRLM's state-level programme, the State Poverty Eradication Mission. The aim of the Kudumbashree Mission is to eradicate poverty through various economic enterprises, of which group farming is an important component (Agarwal 2019). Kerala has been undergoing a rapid decline in agriculture resulting from the outmigration of men and waning interest in agriculture among traditionally cultivator

families, which has led to large areas of land becoming fallow (Kudumbashree 2020). Land leasing is also banned in the state, which has exacerbated the problem of fallow lands. Kudumbashree has used this as an opportunity to get more land into the hands of women's joint farming groups.

Women's group farming and economic enterprises in Kerala are supported by the institutional structure of the Kudumbashree programme, which is founded on three main pillars (Agarwal 2019). The first pillar is the Kudumbashree Mission, or the state poverty alleviation programme, run by government officials from several departments. The second is the grassroots members' network of Kudumbashree called the Kudumbashree community network - this is made up of all the women members who participate in the programme. At the lowest neighbourhood level, the basic unit of organization is called the neighbourhood group (NHG), which is similar to SHGs elsewhere. NHGs are small groups of 5-10 women who live close to each other and come together to initiate group economic enterprises, including group saving and thrift. Membership in NHGs is limited to one woman per family; Kudumbashree ensures that all poor families join NHGs. One of the key interventions of NHGs is collective farming by women farmers. The NHG is the basic unit of intervention for Kudumbashree and other government programmes. For example, the state government's agroecological farming programmes are disseminated and implemented via NHG networks. The network of NHGs is federated at the panchayat level, which means that all NHGs in a particular panchayat are registered as one autonomous organization with elected leadership. The third pillar of the Kudumbashree programme is the panchayat-level institution or the local government. The Kudumbashree community network mediates between the panchayat and the Kudumbashree Mission.

Kerala's commitment to agroecology started in 2014 when it created a state organic farming policy. More recently, in 2019, Kudumbashree initiated a climate resilience programme to turn 10,000 hectares into organic farming land and ensure certification in certain identified areas of all districts (Kudumbashree 2020). This programme is being implemented and scaled up via women's farming collectives. The farming groups are called joint liability groups (JLG); this name refers to the joint obligation of a group to pay debts. India's National Bank for Agriculture and Rural Development (NABARD) created JLGs to enable banking institutions to give out joint loans (Agarwal 2018). The JLGs, which comprise 4–10 women each and are embedded in the NHG network, are also federated at the cluster level; training and organic certification are implemented at this level. The number of JLGs leasing land has steadily increased from 26,499 in 2006–2007 to 65,601 in 2016–2017, and the area cultivated has increased from 17,370 hectares in 2006–2007 to 51,113 hectares in 2016–2017 (Abraham 2019).

Although Kerala banned the leasing of land to individuals through the Kerala Land Reform Act, 1963, following an amendment in 1969, it now allows land leasing to JLGs under the Kudumbashree programme using informal leases (Haque and Lekshmi Nair 2014). Local panchayat institutions support JLGs in identifying fallow lands and facilitating leases. However, since land leasing is officially banned, JLGs enter into informal leases. Usually, the leases are oral or written on paper, but informal and unregistered (Haque and Lekshmi Nair 2014). Banks recognize such informal leases in giving credit to JLGs. Clearly, a lack of formal leases does not prevent women from accessing state support for farming. However, the informal nature of the leases translates into tenurial insecurity. Kudumbashree women farmers often find that landowners are unwilling to negotiate longer than one-year term agreements. In one reported case, a landowner claimed state incentives in his own name and prevented the JLG from doing so (Abraham 2019). Fragmentation of land holdings is another problem and, as a result, many JLGs fail to find contiguous plots – the disparate lands are too small to cultivate individually.

Kudumbashree has an incentive structure to encourage JLGs to take up agroecological farming. However, JLGs are free to practise chemical farming or agroecological farming; they receive some incentive for both types, but they can secure additional incentives for the latter. The incentives are mainly aimed at achieving economies of scale necessary for the commercial viability of the group enterprises. There are two kinds of incentives. Area incentives are meant for women to lease fallow land. These incentives apply to a minimum area of 0.2 hectares. If a woman's group cultivates over 0.2 hectares of fallow land, they are eligible for a subsidy that equals 10 per cent of the total production costs incurred by the group. The second type of incentive is available to women who practise agroecological farming, which is certified by the local agriculture office. The women receive an additional 50 per cent of the 10 per cent area incentive. Thus, SHGs/JLGs that take up agroecological farming receive 1.5 times the area incentive.

A key factor in Kudumbashree's success is its wide institutional network (Agarwal 2018; Pammi and Malamasuri 2014). *Gram* panchayats provide inputs (seeds, fertilizers, and manure), basic infrastructure, machinery, irrigation facilities, and one-time land development grants for farming. The Kudumbashree community network provides support and training via agricultural universities and expert farmers within the network, whom they call 'master farmers'. The JLGs can tap into the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) labour pool to access workers for farming activities – local village councils coordinate this. There are multiple sources of loans; for instance, the state's primary agricultural co-operative societies (PACS) provide interest-free loans for selected crops. Nationalized banks and private banks provide crop loans at an interest rate of

7 per cent, of which Kudumbashree subsidizes 5 per cent . The programme facilitates market linkages with local and district markets. The JLGs sell their produce to each other and at a weekly market that Kudumbashree organizes to eliminate middlemen.

The key outcomes of the programme include improvements in the livelihoods of economically poor and socially marginalized women. Initially, most Kudumbashree collective farmers were landless labourers. They worked for wages and did not have land or access to credit. Today, the number of women taking up farming in the state has increased significantly (Abraham 2019). Women's food access has improved, as has their income from sales. Studies show that women's collective farms are considerably more productive than individual family farms (Agarwal 2018). The availability of fresh produce has also gone up significantly in the local markets where Kudumbashree women sell produce (Abraham 2019).

Analysis

Here, we analyse the extent to which the two state-level programmes serve the interests of women farmers and strengthen the grassroots practices of agroecology. We consider the advancing of these two aspects as contributing to the goals of agrarian climate justice. Viewing our case studies within an agrarian climate justice and intersectional framework then brings us to the question of whether the land-related policies and agroecology programmes in the two states have actually improved women's land rights and who are the women who have benefited. In our analysis, we focus on (*a*) state policies and programmes for agroecology, (*b*) state policies and programmes for improving access to land, (*c*) other vital resources (access to credit, training, and markets), and (*d*) informal sociocultural norms that interfere with the design and implementation of the programmes.

State policies and programmes for agroecology

Tamil Nadu and Kerala occupy contrasting positions when it comes to agroecology policies. Kerala has an ambitious plan to convert 10,000 hectares to organically cultivated land and a state organic policy that demonstrates its commitment to climate resilience. This strategy is being implemented via women's livelihoods programmes and women's collectives in the state. The focus on collective approaches and women's livelihoods is critical in enacting agrarian climate justice, as it ensures that marginalized groups benefit from agroecology programmes. Kudumbashree's universal coverage that is open to one woman from each family guarantees that vulnerable women benefit from these programmes.

Kerala's three-pillared institutional support system, which includes local government, the Kudumbashree Mission, and the community network, has been successful in facilitating sustainable collective farming and agroecological work. Support via national agroecology programmes like the MKSP is embedded into Kudumbashree's existing programme. An incentive structure to promote agroecology supports women's groups' practice of agroecological farming. The effort to bring fallow agricultural lands into the fold of agroecology is a key step towards both climate resilience and social justice. Meanwhile, Tamil Nadu does not have a specific agroecology programme despite a strong social movement promoting agroecology in the state. It is implementing the recent national-level MKSP programme for women's agroecology training as part of the TNRLM and Mahalir Thittam women's SHG network. However, the TNWC case shows that this programme does not necessarily reach landless women, who do not get support for land access. While the programme does try to include poor households, its lack of focus on land access for women limits its contribution to the advancement of agrarian climate justice, which requires a strong focus on land rights.

State policies and programmes for improving access to land

An analysis of land access policies in the two states reveals that of the various paths women can take to access land – inheritance, market purchase, government redistribution, and leasing – the first three have not benefitted women, particularly those from marginal castes. When it comes to the redistribution of public lands, women's collectives like the TNWC encourage local governments to allocate such land. However, these pursuits are often mired in bureaucratic processes and subject to the whims of individual government officials. There is no concrete law in either state to promote women's collective rights to public lands that have been set aside for redistribution. The large-scale conversion of agricultural lands for commercial and residential use in states like Tamil Nadu restricts the possibility of women's land rights while strengthening market actors' claims to common land.

The most common way in which resource-poor women in both our case studies access land is by leasing it. In both states, collective farming via land leasing has led to an increase in women's participation in agriculture as cultivators rather than labourers. In Kerala, although land leasing is banned, the state supports leasing by women's groups as a strategy to secure land access for women and reverse the expansion of fallow land. Local government institutions have helped women from the Kudumbashree network identify land and facilitate leasing along with access to credit. This shows the state's commitment to ensuring women's collective land rights.

The state's support seems to be critical to women successfully accessing land. In Tamil Nadu, land leasing is permitted, but there is no specific support for women farmers. Women face constraints in identifying and leasing land themselves. Organizations like the TNWC fill this crucial gap by bringing women landowners into women's collectives and negotiating longer leases and share-cropping arrangements, without renters having to pay rent in cash. Tamil Nadu should recognize and support such a pooling of resources by women who have land with others who can provide labour, as this can strengthen women's collective land rights and promote agrarian climate justice.

Women in both states face tenurial insecurity and there is a tendency for leasing arrangements to be informal, short, and insecure. This is often the result of landlords' reluctance to enter into formal lease agreements out of fear of losing control over the land or access to state subsidies, which are linked to land ownership. Women members report landlords wanting to cancel their leases after they see that agroecological farming improves the land. Similarly, Kudumbashree women note that it is difficult to get leases longer than one year. Formalizing tenancy laws so that women's collectives can get longer leases and the associated benefits of state programmes would help mitigate these difficulties. Our analyses of the two cases show that enacting laws is necessary but rarely sufficient to bring about transformative change.

While land purchase has not been a significant source of land access in either state, it is an important avenue for women's collectives that manage to accumulate funds. It is critical that state policy recognize not just individual women, but all forms of women's collectives, such as SHGs, JLGs, and cooperatives, as valid landowners. Further, as highlighted in our literature review, individual land titles promoted within a market-based framework do not necessarily mean that women control the lands, which have been subject to financialization via land and credit markets. Nevertheless, both individual and collective land titles are important to the state recognizing women's land rights.

Other vital resources

Land redistribution and land titling have been the focus of many land rights movements. However, feminist critics have pointed out that without a host of supportive mechanisms, giving out titles is not enough to make the land productive (Jackson 2003). In both cases, we find that land access is just the first step to making agroecology viable. NGOs, community organizations, and social movements provide vital resources for, and commitment to, such work. In Tamil Nadu, where there is little institutional support and the state is not committed to redistributive land justice for women, organizations like the TNWC help vulnerable and marginalized women to claim collective land rights. The TNWC also provides support in the form of technical training, inputs, seeds, and credit to help women practise agroecology. In Kerala, the three-tiered institutional support structure – Kudumbashree community network, Kudumbashree Mission, and local government institutions – provides an ecosystem of support to women's collectives, for instance, through land leasing, extension services, incentives, and marketing. Given that women need a variety of support to successfully practise collective agroecological farming, policy interventions should prioritize building these foundations. Further, the role of external actors like NGOs and grassroots movements must be recognized and rewarded in programme implementation.

Informal sociocultural norms that interfere with the design and implementation of programmes

Our case studies confirm that patriarchal sociocultural norms impede women in their efforts to practise collective agroecological farming. Male community members often ridicule women's efforts to farm independently, as it contradicts conventional and patriarchal understandings of gender roles and the caste position of women. Indeed, the TNWC women, many of whom are Dalits, faced resistance and ridicule from upper-caste landlords in their initial experiments with group farming. Caste conflicts around land are common, and the TNWC case shows that Dalit women are subjected to physical, sexual, and verbal violence when they try to assert their rights. Women farmers also encounter apathy from state officials when they approach them for land allocations; this also has to do with cultural attitudes around women's land ownership. In Kerala, the situation is different as the state's women's collectives are further along in their work and there is greater social acceptance of them. Their successes are also the result of strong state support for women's joint farming and better provisions for gender rights in the state. In areas of Tamil Nadu where women's group work has been ongoing for some time, the women find that men in the community are more supportive of their work.

These findings offer useful insights for programme design. Accounting for such sociocultural norms in programme design, building strong institutional support structures for women's collectives, sensitizing government officials, promoting women's movements, and hiring more women for relevant government positions can help address the barriers linked to conventional gender norms.

Conclusion

This chapter approached climate justice as it applies to women in agriculture. Using the agrarian climate justice framework, we argued that the twin aims of agrarian justice and climate justice must be addressed by advancing women's right to and control over land in climate resilience initiatives. We lookd at agroecology programmes in Tamil Nadu and Kerala, initiated by both state and movement actors, and analysed the prospects for advancing agrarian climate justice in policy and programmatic initiatives.

We highlighted the fundamental inequalities in women's ownership of and control over land, particularly concerning women from marginal castes and classes. Given the ongoing feminization of the agrarian crisis, which means that women are increasingly participating in farming as labourers rather than cultivators, the issue of their land rights is even more important. Our analyses showed that collective farming and collective land leasing offer significant benefits in terms of women's land rights and overall wellbeing. They further revealed four key areas within state policy that affect agrarian climate justice: (*a*) agroecology policies, (*b*) land access programmes for women, (*c*) other resources that help to make agroecology viable, like support from local NGOs/movements, access to credit, training, and marketing support, and (*d*) informal sociocultural norms that interfere with the implementation or design of gender-just agroecological programmes.

The two case studies provided a number of insights that could improve the prospects of agrarian climate justice in agroecology initiatives from the perspective of women farmers. One is a convergence of women's agroecology-based livelihood programmes with land access so that institutional support for both agroecology and land can be offered simultaneously. Many states have already made women's livelihood interventions via SHGs and are currently implementing various agroecology extensions through these interventions. Linking these with land redistribution or leasing, particularly through collective land access as is being done in Kerala, can greatly enhance the ability of poor and landless women to successfully practise agroecology and advance their land rights.

Leasing has become an important way for women's groups to access land, but these women face severe insecurity due to informal, insecure, and short leases. Formalizing tenancy laws to allow women's collectives secure land access could greatly improve women's collective land rights. Access to land is a key aspect, but not enough to ensure viable agroecological farming. A host of supportive measures are needed to make farming a success, including technical training, procurement, and links with local governments. Regressive sociocultural norms must also be tackled via sensitization and training, particularly within government offices at the local level. Social movement actors can provide critical support in programme design and implementation, given their vast experience, large community networks, and social justice vision.

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