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Ambivalences of collective farming: feminist political ecologies from Eastern India and Nepal

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Abstract: Collective farming has been suggested as a potentially useful approach for reducing inequality and transforming peasant agriculture. In collectives, farmers pool land, labor, irrigation infrastructure, agricultural inputs and harvest to overcome resource constraints and to increase their bargaining power. Employing a feminist political ecology lens, we reflect on the extent to which collective farming enables marginalized groups to engage in smallholder agriculture. We examine the establishment of 18 farmer collectives by an action research project in the Eastern Gangetic Plains, a region characterised by fragmented and small landholdings and a high rate of marginalised and landless farmers. We analyze ambivalances of collective farming practices with regard to (1) social relations across

scales, (2) intersectionality and (3) emotional attachment. Our results in Saptari/Eastern Terai in Nepal, Madhubani/Bihar, and Cooch Behar/West Bengal in India demonstrate how intra-household, group and community relations and emotional attachments to the family and neighbors mediate the redistribution of labor, land, produce and capital. We find that unequal gender relations, intersected by class, age, ethnicity and caste, are reproduced in collective action, land tenure and water management, and argue that a critical feminist perspective can support a more reflective and relational understanding of collective farming processes. Our analysis demonstrates that feminist political ecology can complement commons studies by providing meaningful insights on ambivalences around approaches such as collective farming.

Keywords: Agriculture, collective action, collective farming, commons, feminist political ecology, FPE, gender, India, irrigation, land, Nepal, water

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1. Introduction

Critical theoretical approaches are increasingly used to understand the governance of the commons as political (Clement 2010; Bennett et al. 2018; Brisbois et al. 2018), affective and relational (Mosse 1997; Nightingale 2011a; Singh 2017). However, to date, commons governance has hardly been reviewed critically through a feminist theory and framing of social relationships (Velicu and García-López 2018). The growing body of feminist political ecology (hereafter, FPE) has the potential to shed light on how intra-household and community relationships across scales, intersectionality and emotional attachment affect commons governance, and how they influence outcomes for environmental and social justice (Nightingale 2011a,b; Clement et al. 2019). FPE perspectives support questioning

the extent to which collective practices solve issues of social inequality and dispossession (Nightingale 2014), or rather reproduce or even exacerbate existing power relations. Hence, FPE helps understand gendered power relationships in scales unexplored by mainstream commons studies.

This paper applies FPE to study the extent to which collective farming enables marginalized groups to engage in smallholder agriculture in South Asia. Developed through a project collaboration of researchers, local NGOs and farmers in the Eastern Gangetic Plains, collective farming is a practical, locally specific approach to overcome land fragmentation and labor shortages in contexts of emigration, as well as unequal landlord-tenant and gender relations. This practice has some similarities to the tenets of food sovereignity, which is a rights-based approach to define own agriculture led by a transnational peasants' movement, La Via Campesina (cf. Patel 2009; Agarwal 2014). The farmer collectives discussed here present experimental project-based models of small groups pooling land, labor, tools and produce with the intention of mutual benefit of all. By operating a contiguous plot and sharing infrastructure such as irrigation, smallholders can increase their productivity and profitability over individual family farms as Agarwal (2018) showed with a case study in Kerala. Collectives have also been suggested to have the potential to empower women by reducing labor and ease inequality in peasant agriculture as tenant and marginal farmers can increase their collective bargaining power, e.g. with landlords, governments and markets (Sugden 2016b; Agarwal 2018).

This paper will explore collective implementation processes from feminist and social justice perspectives. It is based on case studies of an action research project which sought to pilot farmer collectives in six villages in three regions of the Eastern Gangetic Plains (the Eastern Terai in Nepal, Alipurduar and Cooch Behar in West Bengal and Madhubani in Northern Bihar, India). The project focused on this region because of its high levels of poverty above 40%,[1] the high levels of tenancy and small land holdings, and unequal gender, caste and class relations (Sugden et al. 2014). Marginal and tenant farmers of the region live in high food insecurity, and male out-migration result in women increasingly managing the farming process with great workload and constrained access to water, credit and other resources (Sugden et al. 2014).

The authors were part of developing and implementing the project idea funded by the Australian Centre of International Agricultural Research (ACIAR). As part of the project, local NGOs formed collectives grounded in the premise that collectively leasing land, joint ownership and management of irrigation equipment (such as borewell, pump sets and drip irrigation kits), pooled labor and shared capital inputs and profits would bring new opportunities to marginal, tenant and women farmers.

[1] In Nepal's Saptari district, where two of our case studies are located, the poverty is 39.5% (Central Bureau of Statistics 2014), in Madhubani, Bihar, poverty is 45% (Bihar Rural Livelihoods Promotion Society 2010), and 42% in Cooch Behar (Government of India 2010).

We analyse how the initial idea unfolded in the implementation process. By applying an FPE approach, this paper explores how social relations mediate collectivization processes such as group membership, the (gendered) labor division, and the share of produce. The analysis sheds light on the extent collective farming approaches transform unequal gender relations in land tenure and water resource management, or if gender relations are reproduced or even exacerbated through collective farming.

We orient our analysis of farmer collectives around three themes – scales, intersectionality, and emotional attachment.

Firstly, we examine social and environmental relations across scales (Rocheleau et al. 1996): how do intra-household, group and community relations mediate the redistribution of labor and control over land and water resources in farmer collectives? Personal and domestic spaces are important sites where gender relations and social norms are negotiated (Leach 2007; Nightingale 2011a; Arora-Jonsson 2013; Leder et al. 2017a,b). We explore ambivalences of social relations (Velicu and García-López 2018) and how those shape collective farming practices and interventions.

Secondly, we explore the ways farming collective practices are produced by intersectionality, with a focus on gender, class, (e.g. shaped by land ownership, remittances received), caste, age, or individual's household position and family composition (Harris 2006; Nightingale 2011b; Leder et al. 2017a). These complex social relations are often hidden in commons research but are vital for understanding how power relations shape resource management.

Thirdly, we examine the role of emotional attachment in people's willingness to cooperate (Nightingale 2011a; Singh 2013, 2017). FPE studies show how emotional attachment to the family, the community and the environment influence resource management practices. In our case studies new institutions were built upon local histories and practices of family farming and existing relationships among farmers as neighbors, relatives, laborers and landlords. Trust, for example, is ambivalent – it can have not only positive (Ostrom 2010), but also negative effects on collectives due to unequal power relationships.

We begin with a review of relevant literature of FPE and collective resource management. Then we will outline our study context, the approach of farmer collectives and our methods. The empirical section focuses on the three dimensions, scale, intersectionality and emotional attachment to provide a better understanding of the conditions to greater inclusion of marginalized groups in collective farming. We conclude by highlighting how an FPE lens on farmer collectives opens up a more reflective and relational understanding of potentials and limitations of collective farming in order to contribute to more equitable and sustainable collective resource management.

2. Collective resource management and feminist political ecology

Commons studies have been grossly categorized in two bodies of scholarship: new institutional economics, and sociological and anthropological approaches

(Faysse and Mustapha 2017). New institutional economics identify certain conditions under which people manage common pool resources, such as institutional arrangements, clear incentives (short and long term), property rights, leadership, a sense of ownership and transparent mechanisms for the sharing of benefits (Ostrom 1990; Agarwal 2000). Further, collective resource management depends on relatively stable relationships and shared norms (Dietz et al. 2003).

Extensive scholarship of anthropological and sociological traditions has documented how communities manage local water and forest resources through robust systems of local knowledge and collective action (Agarwal and Narain 1997; Mosse 2003; Baker 2005). Mosse (1997) and others criticizes mainstream commons studies for ahistorical and apolitical constructions of locality, as well as narrow definition of resources and economic interests, not recognizing symbolic and material interests and resource values. Mosse (ibid) argued with a case study of irrigation tanks in India how institutional design principles were neither a sufficient nor a necessary condition for just and sustainable resource management, by uncovering how social relations are articulated, reproduced and challenged through tank systems. Critiques of this sort have crystalized into a broader field of critical institutionalism (Cleaver and de Koning 2015).

These bodies of literature have only rarely pointed out the great extent to which gender relations matter for environmental collective action and natural resource governance more broadly (Meinzen-Dick 2002).

The rich gender and environmental governance literature shows that in highly stratified social formations marked by patriarchy such as in South Asia, decision-making, access to and control over water resources is male-dominated (Meinzen-Dick and Zwarteveen 1998; Zwarteveen and Meinzen-Dick 2001; Leder 2018). Agarwal (2000) has argued for the distinctness of women's social networks in environmental management groups. Westermann et al. (2005) identified that self-sustaining collective action and norms of reciprocity increase in groups where women are present.

FPE takes gender research in natural resource management a step further beyond examining differences in participation and benefits for women and men in collective farming. Rather, FPE examines the contradictions and struggles over access to and control over resources (cf. Elmhirst 2011; Harcourt and Nelson 2015). Post-structuralist perspectives see gender as a process by which social differences are produced, performed and contested in environments (Nightingale 2006). Such a relational perspective (1) is particularly important if we want to understand the emergence and functioning of collective farming from a feminist and social justice perspective. Recently, Velicu and García-López (2018) bring Butler's feminist theory of subjection into Ostrom's thinking about commons into dialogue, and stress a feminist approach on how subjectivities are formed in commoning, e.g. how power relations, structural conditions and past experiences influence people's perception of (and relation to) themselves and others (ibid, 5). Velicu and García-López (2018) describe 'commoning as a relational politics that engages with humans' boundedness and mutual vulnerability as well as with

the performativity of such subjectivities'. Hence we understand commoning as everyday practices rather than institutional set ups, as a 'set of processes/relations enacted to challenge capitalist hegemony and build more just/sustainable societies insofar as it transforms and rearranges common sense in/through practices' (García López et al. 2017, 88). As Nightingale (2019) puts it, these relations are always contingent, ambivalent and outcomes of the exercise of power. This calls for a nuanced understanding of collective farming practices as structuring and reproducing existing power relations, particularly if facilitated externally. This can only be explored by drawing from rich local knowledges which are the core of an FPE analysis.

FPE attempts to make power relations at household and community level and everyday struggles visible which influence seemingly (ir-)rational choices on resources and labor (Nightingale 2011a). The Butlerian tradition applied to the commons engages with "bounded selves" (cf. Velicu and García-López 2018), in contrast to institutional design studies which have been reliant on economic rationalities. Hence, FPE can demonstrate how gender norms and social relations shape participation, rules and practices of collective farming. Studies have argued for either homogeneous or heterogenous groups based on gender, land ownership status (class), literacy etc. as better suited for collective resource management (Varughese and Ostrom 2001; Agarwal 2018). As homogeneity or heterogeneity are highly relative terms and vary from one context to the next, FPE helps to understand the ambivalences of social relations and explains how benefits from these groups are disperse due to social differentiation.

FPE embraces an intersectional analysis (2) to demonstrate how differentiated access, use and control over natural resources such as water is conditioned by poverty, livelihoods and landlessness (Harris 2008). In South Asia, axes of social and economic differences in terms of age, ethnicity and caste shape water access and irrigation management (O'Reilly 2006; Sugden et al. 2014; Leder et al. 2017a; Panta and Resurrección 2017; Leder 2018). FPE can help to understand how subjectivities emerge (Nightingale 2011a, 2017), that is how social difference such as gender, age, or class, is produced and performed in collective resource management. Any intervention runs the risk of providing those in positions of power with improved access to resources. Harris (2006), for example, demonstrated that new established water user groups reproduce old power relations. Water and agrarian developmental programmes are often designed by apolitical and technologically driven approaches and run the risk of reproducing or even exacerbating gender and other local power relations when neglecting intersectional approaches (Leder et al. 2017a).

Next to relations of power which affect collective action, emotional attachment (3) is highly important for people's willingness to cooperate in more organized natural resource management contexts (Nightingale 2011a; Morales and Harris 2014). Emotional reasons can explain why people cooperate: due to gender and kinship relations, community obligations, or attachment to the land or sea (Nightingale 2013). Hence, incentives for group farming cannot solely be

explained by economic or political rationalities (Nightingale 2013; Singh 2017). Resource management practices, struggles and conflicts are not just material challenges but also emotional labor, which can range from emotions of relief and joy to pain and suffering (Sultana 2011).

3. Context: unequal gender relations, land fragmentation and dry-season irrigation

The Eastern Gangetic Plains as an ecological region is marked by a fragile agricultural base, limited mechanization and commercialization, high vulnerability to both drought and flooding, and a predominance of small and marginal farmers. Nepal's Terai and India's Bihar in particular are characterized by high levels of land inequality, with a small yet powerful class of landlords, and heavy concentration in the ownership of irrigation equipment and other assets, and a deeply entrenched and complex caste system (Sugden 2016a). Our case studies included two villages each in Madhubani in India's Bihar state, Saptari over the border in Nepal, and Cooch Behar and Alipurduar in the northern corner of West Bengal. 80.54% households in the six villages were either landless or owns less than 0.5 ha of land. Tenants or part tenants form 36% of the sample, while those with more than 1 ha of land own 56% of the land, despite forming just 6.8% of the sample. Tenants in Bihar and Nepal pay 50% of the harvest to landlords through a sharecropping system known as *bhaataiya*.

In the northern part of West Bengal, while holdings are small, land reforms in the 1970s transformed agrarian relations (Banerjee et al. 2002) from landlordism and tenant farming to smallscale peasant agriculture. The cultural context is also quite different, and overall inequality is less extreme. With the absence of a caste system per se, and a predominance of the indigenous Rajbanshi community (Scheduled Caste) and Adivasi (Scheduled Tribe) communities who migrated to the region during the colonial era and have been historically marginalized, with a long trajectory of dispossession of land and forests (Nilsen 2012).

In all regions, however, gender inequalities are pronounced. Women are responsible for reproductive tasks such as household chores (cooking, washing, cleaning etc.), as well as child and elderly care, and time consuming agricultural tasks such as paddy transplantation, weeding and harvesting. Due to male labour migration from the rural Eastern Gangetic Plains, women enter previously male-dominated space such as procuring agricultural inputs and handling cash. However, particularly female-headed households face new patterns of vulnerability with an increase in the labor burden and due to gendered norms. Structural and institutional constraints limit access to and control over water and land resources in a patriarchal and caste-based society marked by migration (Sugden et al. 2014).

All three regions face the combined impact of climate change and political-economic processes at different scales such as price rises for inputs (Pant 2011) and rural monetisation (Sugden et al. 2014). The already high barriers in accessing irrigation are aggravated by rising costs of diesel and equipment, further increasing

the vulnerability of farmers to drought. Agriculture is perceived as labor intense, with high risks and dependent on weather for crop failures, and little alternative rural livelihoods (Leder 2018), that the idea of collective farming as an innovative approach developed to dismantle existing rigid agrarian structures.

Several policies promote group activities for selected farming activities. In Nepal, the Ministry of Agricultural Development encourages farmers to register in groups at the District Agriculture Development Offices (DADO) in order to access extension services and inputs such as seeds and irrigation pumps (Kyle and Resnick 2016); and the Agricultural Development Strategy 2015–2035 highlights the importance of land consolidation.

The first and second plan in India (1951–1961) considered the promotion of cooperative farming as a way for rural development. However, the Planning Commission became silent on cooperative farming as the objective of the agriculture policy with the Green Revolution focused on output maximization and little consideration was given to the distributional aspect of such an economic growth policy. Today, the Government of India promotes Farmer Producer Organisations, currently 5000 registered, which comprise 70–80% small marginal farmers and enable to access government subsidies and schemes for procuring farming inputs, storage, and marketing support (NABARD 2015). These policies promote selected farming activities, yet a comprehensive and radical collective farming approach which encourages the redistribution of land, labor and capital has so far not been promoted in policies.

4. Farmer collectives to restructure land and water management

The establishment of collective farming groups contrast historically failed socialist collectivization, which was top-down, large-scale, mostly coercive and non-participatory (Agarwal 2010). The specific project idea to establish farmer collectives in the Eastern Gangetic Plains was motivated by addressing land fragmentation and unequal landlord-tenant relations. Collective models developed out of the dialogue with and experience of local NGOs and marginal and tenant farmers to organize small groups around contiguous plots. Broadly, this approach oriented around the eight principles for managing a commons by Ostrom (1990) and the collective farming principles by Agarwal (2010): (1) voluntariness, no coercion to participate, (2) small group size (5 – 18 farmers per group in our approach), (3) social affinities among members, (4) participatory decision-making in production, management, and distribution, (5) checks and penalties for containing free-riding and ensuring accountability, (6) group control over the returns and a fair and transparent distribution of benefits.

A total of 18 collectives were analysed for this study. The collectives were established in 2015 with the support of a consortium of government, research and NGO partners, set within the four-year research project “Improving water use for dry season agriculture by marginal and tenant farmers”. A team of local NGOs was primarily responsible for regular social mobilization, e.g. to discuss labor

division and accounting, while the government partners were more focused on technical support, such as irrigation, crop scheduling, and vegetable gardening.

Six villages were selected based on a scoping study with the objective of identifying a minimum of three sites per village suitable for experimental collective farming. The sites fulfilled both bio-physical and social criteria, such as the groundwater level, the availability of land plots close to the existing pump set, the willingness of the landlord to give land, interest of tenant and marginal farmers to be part of the intervention, and high rates of male and youth emigration and hence female-headed households.

The project's strategy included mobilising groups of landless farmers (mostly women) to take a joint lease or consolidate land, and then share labour, irrigation costs and profits. Groups have been supported to use water and energy efficient technology such as solar pumps and micro-irrigation systems, which was their major incentive to join the groups.

Four models of collective with different levels of cooperation were piloted to fit in with the existing land ownership structures and willingness of farmers to work together (cf. Table 1). In Bihar and Nepal where tenancy was predominant, model 1 was proposed whereby groups would lease land and cultivate collectively. In West Bengal, where land was not easily available for lease, group members were mobilised to collectively consolidate their plots to allow group farming (model 2). The sharing of labour, costs and output would be the same as under model 1, except rather than the land being leased, it would belong to group members. A third and fourth model developed subsequently to allow for medium levels of cooperation, particularly when farmers were uncomfortable with the pooling of labour. Farmers would collectively lease a contiguous plot (model 3) or cultivate their own land (model 4) and would cooperate for stages of the production process including joint decision making on cropping calendars, training, crop planning, input investment and irrigation, but would be responsible for their individual plots of land.

5. Methods

The study is based on extensive field work in six villages (cf. Figure 1). We attempted to undertake 'non-extractive research by experiencing and learning from communities' responses' (Editorial, Clement et al. 2019), and documented social engagements and changes of these groups (e.g. out-migrating group members) over a period of four years. We saw our engagement and observations as a way to uncover diverse gender relations within and beyond farmer collective groups, and we aimed to situate occurring conflicts and stagnations of group development in everyday practices, going 'beyond homogenizing versions of the development enterprise and of feminism' (Cornwall et al. 2007). However, it is important to acknowledge that our research was set within a project to promote collective farming, and hence we were part of an action research project which externally facilitated an experimental exercise within hierarchical relations between researchers and

Table 1: Four models of collective farming.

Collective model	Land arrangement	Labor arrangement	Financial arrangement	Target group	Examples
Model 1 – Comprehensive collective	Collective leasing of contiguous area	Pooled labour within group	Sharing of all costs and produce	Landless/Tenants	Nepal and Bihar
Model 2 – Comprehensive collective	Consolidation of group members' land	Pooled labour within group	Sharing of all costs and produce	Small owner cultivators	West Bengal
Model 3 – Medium cooperation	Collective leasing of contiguous area, but maintaining individual plots	Household labour on own land	Cooperation for land preparation, inputs and irrigation	Landless/Tenants	Nepal and Bihar
Model 4 – Medium cooperation	Maintenance of individual plots within contiguous area	Household labour on own land	Cooperation for land preparation, inputs and irrigation	Small owner cultivators	West Bengal, Bihar

Figure 1: Location of case study villages.

communities. Despite frequent visits, our engagements remained short and strongly dependent on local NGOs which had built relations of trust but also dependence with the communities.

We used a variety of qualitative methods ranging from farmer interviews, focus group discussions (FGDs), and diverse participatory methods and a participatory gender training (Leder et al. 2016); (cf. Table 2). With the establishment of the collectives, a series of timed field visits at different points in the cropping cycle were carried out throughout winter and summer planting from 2015 to 2017. We conducted repetitive FGDs with each of the 18 farmer groups to understand farmer's perceptions on opportunities and challenges in their groups and beyond

Table 2: Methods conducted in field sites.

Field sites	Focus group discussions (before and during farming collectives establishment)	Semi-structured interviews (before and during farming collectives establishment)	Observations (days at the field sites)	Participatory methods (gender training, resource mapping, transect walks)
Saptari district, Nepal	13	20	12	Yes
Madhubani district, Bihar, India	30	42	24	Yes
Cooch Behar and Alipurduar, West Bengal, India	29	44	20	Yes
Total	72	106	56	Yes

in their families and with diverse stakeholders. This was accompanied by both formal interviews and informal discussion with key project staff who is engaged with and supporting the farmers regularly in the field. Observations in the field were documented with photographs and in detailed field notes.

We acknowledge that the comparability of the collective models across sites is limited due to different NGOs and various trainings and agricultural inputs such as seeds, crops, and water technologies per site. Among the authors and the wider project team, we struggled to see patterns in our data. Therefore, this paper compares the diverse trajectories of group formation, motivation and incentives qualitatively.

6. Feminist political ecologies of farmer collectives

6.1. Social relations across scales and sticky relations of power

6.1.1. Ambivalences around group membership

The decision to become a group member and the degree of engagement in collective farming is shaped by social relations across scales (Rocheleau et al. 1996), namely an individual's position in- and the composition of a household as well as intra- and inter-household relations. Taking social relations into account helps explain ambivalences around group membership motivations and drop-outs of collective farming. The following cases highlight ambivalences of clear group boundaries and monitoring labour contributions (Ostrom 1990) as these are embedded within and mediated by social relations across household, group and community scales. Households, despite its fractures and inequalities, often operate as a unit. Farming is a collective risk and challenge for families – even though they are experienced differently. These social relations can either inhibit or promote individual's engagement in groups. However, we would like to note that amongst project staff, we could not always solve disagreements or identify 'best practice' models on group membership. For example, while an external advisor to the project advised individual labor accounting in order to increase the visibility and benefits of women's labor contributions, a local implementing NGO feared this will destroy "trust" among group members as they consider families as a "member".

Engagement in collective farming needs to be seen against the background of women's reproductive labor and women's every day struggles of care work at home, what Saleh (2004) calls 'meta-industrial labor'. A woman's household position and labor responsibilities greatly affect the level of participation in meetings and collective labor. Some women left the collectives to take care of the children, elderly and sick. In these cases we observed that collective members were frequently substituted by other male or female family members in meetings and agricultural activities of the collective. In the village Uttar Chakoakheti (West Bengal), for example, a pregnant woman was included in the group but was replaced by her father-in-law when her child was born. This shows the very real limitations of women to engage to the same extent as men in collectives.

Beyond household relations, community relations affect the participation in the group. In one of the collective groups in Bhagawatipur, Madhubani, a female member left the collective group, stating that she had to return to her household chores. Later in an in-depth interview, however, she also stated:

> "My family feels that due to the increasing conflicts within the group, our relationships with the households of other members in the group will be spoiled. Given the time and money invested in the collective and due to the low returns, my husband and father-in-law asked me to not get involved in such groups.' (interview, female member, Bhagwatipur 1)

She thus withdrew from the group in order to maintain her family's good relations with the community. Collectivising labor and capital involves group members' families as well, and women often have to request their husbands or father-in-laws to engage in collective activities. Arguments and conflicts can arise, and in this case, (male) family members decided for the woman to discontinue the group membership, although she later shared her own interest to remain in the group.

In other cases, the support and encouragement from husbands and other family members led to an active participation of women members in the collective. A few female members from the village Uttar Chakoakheti in West Bengal highlighted that their husbands encouraged them to participate in the collective groups. One of the women stated, "We take help from male household members for activities such as ploughing, irrigation, hiring tractors, buying diesel and applying fertilizers." Another women added that based on the advice of her husband they cultivated an early harvest paddy variety (locally called 'Mala'). She stated: "Early harvest of paddy gave us enough time to cultivate the Rabi season crops, which further helped in avoiding crop damage from early monsoons". Learning from that experience, other members of the collective now cultivate this variety as well. This latter case demonstrates that the commitment of (male) household members to their (female) group members positively contributed to both women's encouragement and the overall productivity of their group.

6.1.2. Ambivalences on the (gendered) division of labor

The division of labor was the key source of conflicts in the farmer collectives, particularly those involving high levels of cooperation and labor pooling (model 1 and 2). The farmer collectives would not necessarily rely on formalized rules to share labor, which are meant to avoid free-riding (Ostrom 1990, 2010). In monthly meetings, labor and input procurement are decided, but most arrangements are informally discussed as the group members live close to each other: timings to go to the field and to irrigate, the cash collection for input procurement, and decisions on a person responsible to purchase inputs such as seeds, fertilizer and pesticides in the market.

Due to unequal labor burdens within the collective, one group in the village Koiladi (Saptari, Nepal) preferred the partial collective model where they are

responsible for their own plots on a commonly leased area (model 3), rather than pooling labour (model 1). The group leader reported that he feels burdened to call the members for tasks such as harvesting paddy, bundling hay stacks and ploughing the land, and that the unavailability of group members due to (women's) domestic labor and their prioritization of individually rented plots had resulted in a delay for paddy harvest. He perceives individual self-dependent farming more advantageous and decided to shift back to cultivate land on an individual basis (model 3) in the following season. After one season with individual plots, he stated,

> "At present for Rabi, we have prepared cauliflower beds for individual plots. Other members are not concerned about their fields. Even for cauliflower plantation, they do not come to look at it, irrigate it on time and apply pesticides. I have been regularly contributing time and my cauliflower have grown well. Others should learn from my good practices." (interview, male member, Koiladi 2)

The group reported that they had set up rules on labor contribution in farm activities and penalty mechanisms if members do not turn up, but these are not enforced. Economics and institutional literature argues that this creates opportunities for individual free-riding (Ostrom 2010). However, building on FPE, we rather saw struggles over (gendered) power relations at play which hindered women to take on the ownership of (collective) farming. The neglect of individual plots demonstrates that it is not intended to avoid labor and receive collective benefits, but rather demonstrates low incentives, limited available time and low trust in returns to invest in agriculture more generally. In addition, the willingness to contribute labor was greater in groups with more equal gender balances and strong social ties amongst the members. This demonstrates how the FPE framework takes a different ontological route from the institutional approach and that both approaches could speak to each other to better explain collective action. While "free-riding" is a dominant theme in economics and commons literature and a phenomenon observed by external experts, we argue for triangulating this perspective with an analysis of structural incentives and (gendered) power relations which strongly influence the motivation of the marginalised to invest labor for collective farming.

Farming collectives in structurally similar communities showed important variations in gender norms on the division of labor. Even in villages close by with similar socio-economic profiles, there were great differences in how far women gained control in collective farming. Highly specific contexts, historical social environments and political fields enabled that certain (female) change agents could emerge. This became particularly apparent in the case of handling irrigation technologies in our two case study sites in Saptari district in the Eastern Terai of Nepal. In both villages, irrigation technologies were introduced, but the perception of the gendered division of labor and machine handling by women was entirely different.

In the village Koiladi, the notion that irrigation pumps should be handled by men has a strong hold. When being asked for the reason, one of the female

members strongly said, "How can girls operate pumps? I get scared to use a pump, what if I am electrocuted? Look at my daughter, she does not know anything." (interview, female farmer, Koiladi 2). Her statement reflects strong gender norms that machinery operation is the domain of men. Similarly, one of the male group members said:

> "How will women irrigate with the pump? They know how to switch the pump on and off, but what if the motor fails to draw water after switching the system on. In that case, they may damage the motor. (…) Women can irrigate once the pump is functioning but if there are problems in the motor, women cannot fix it." (interview, male member Koiladi 1)

Interestingly, one woman from the same group counterargued, "Women are operating pumps by themselves at home, how can you say we cannot do it (in the group)?" (interview, female member Koiladi 1). This shows how group farming can reinforce the gender division of labor, rather than altering gender norms publicly.

In the same village, we observed that the gendered division of labor is sustained in other activities of the collectives as well. Male group members were responsible for short-term physically labor intensive tasks such as land preparation (ploughing, hoeing), while women were doing more time-intense labor such as weeding, planting seeds and seedlings, and harvesting and post-harvesting activities. These everyday practices produce and reiterate gender differences in farmer collectives.

The gendered division of labor was different in the case study site 27 km away. Several women had experiences in operating small electric pumps at home and quickly became comfortable using the 80w solar pumps of the group, which were provided by the project. In case the pump did not discharge water immediately, some women knew how to prime it, although they sometimes seeked assistance from male farmers. When we enquired about the reasons why women were confidently handling irrigation technologies in their group, one woman shared that her husband is supportive and taught her how to operate the group pump and assisted when required. He also helped their group to transport seeds from the market on his motorbike. She said:

> "When we were girls, we were not allowed to ride bicycle or go to school. I have learned these skills, to cycle and to write. Similarly, I have learned how to operate pumps (…). So, I know I can operate it well in future."

Her statement reflects what we observed throughout our engagements in this village: there was an enabling social local environment, with an increasing critical awareness towards existing gender roles by both men and women, which allowed women to imagine new possibilities and their own roles in agriculture. In the latter case, the female farmer was able to mobilize a group of women who successfully operate solar pumps to irrigate the crops on their consolidated land.

The supply of one irrigation pump per group and training new technologies can both help and prevent to dismantle gender norms. The former case study on the introduction of irrigation technologies to groups shows that female group members were disengaging with pumps in males' presence, while the latter shows the opposite. These two very different responses demonstrate the stickiness of gender relations, as they follow the trajectory of the specific gender norms in each village. While in the first village, strong gender norms by both women and men continued to shape the labor division in the collectives, the latter village with a more gender-supportive environment enabled women to take more control in farmer collective groups.

6.2. Intersectionality and control over land

The intersection of gender inequalities and land ownership among group members poses a serious challenge in the sustainability of collectives, as landowners are predominantly men, while women often have no titles to land. If land is pooled by a few group members, and landless women are added to the group, the latter receive less produce in lieu of 'rent' for those who have given land. This can pave the way for exacerbating inequitable class and gender relations.

One collective group (model 2) in Dhaloguri village in West Bengal was formed under the lead of a relatively large farmer. His plot was selected as the location for the boring based on the projects' bio-physical assessment and a community discussion. The group consisted of three landless women, a male neighbor, and his brother and nephew living on the same compound, but as they use different kitchens they were counted as separate households by the local NGO. The NGO staff noted on the landlord that "we should salute him for his sound knowledge and positive intention to work with daily wage labour", e.g. lending money without interest to the landless for input costs.

Of a total paddy produce of 40 mon (1 mon=40 kg), 35 mon were distributed among the seven group members who received 5 mon each. The landowner received additional 4.5 mon (almost double) for renting 3.5 bigha land to the collective, and the other landowner received 0.5 mon for less than 1 bigha.[2] As the brother and nephew of the larger landowner received 5 mon as well, his extended family received 19.5 mon in total, almost half of the harvest. This was justified as all three contributed their labor to the group. While the female laborers planned to keep their paddy for self-consumption, the landowner's family sold most of their harvest and could bargain a higher market price for their fresh produce. The female laborers realized after a month that the crops started molding and therefore sold later at the market, but for a lower market price as the quality of the crops deteriorated.

In an in-depth interview, the female laborer and widow believed that the new model is beneficial to her, in spite of the lower share she received in comparison

[2] The landowner would usually rent out his land for 3500 INR, but is paid 2250 INR instead in form of the collective harvest – plus group harvest.

to the landlord. Although she was doubtful when she was contributing extensive labor during the season, she was happy: "For the first time in my life, I received a big bag of rice at once" (female member, Dholaguri 1). However, before she received daily wages of 150 INR, while calculating the return of the crops, she would have earned only 75 INR per labor day in the collective. Her illiteracy contributed to unclarity of labor input, as accounting and labor time rules were not clear and therefore could not be negotiated.

In the next season, the female members withdrew from the group as they had experienced crop loss which resulted in financial constraints in their household. The NGO stated as reasons that the land area of collective farming was too small, and therefore, the female group members decided to work as daily wage laborer as it is more rewarding than the collective.

This case study demonstrates how important it is to ensure that both individual and group labor inputs and financial benefits are accounted for and compared in order to avoid collective farming groups to reproduce unequal labor and gender relations. Female laborers internalized the devaluation of female labor, particularly since they remain in a dependency status on the landlord while working in a group. The acceptance of unaccounted labor and receiving a lower share reflects the process through which subjectivities of being a female landless laborer and a landowning male are constituted and performed through everyday practices (Butler 1997).

6.3. Emotional attachment and everyday practices

Emotional attachment within communities and everyday practices which create feelings of unity and shared norms were constitutive of more just collective farming practices.

Nightingale (2013) pointed out how emerging collective subjectivities of fishermen affect the long-term sustainability of fisheries management. She argues that attachments to the community, fishing and the sea explain successes or failures of sustainable resource management. Attention to emotions can further explain broader participation in natural resource management, and open up spaces for transformative change by involving more marginalized groups (Morales and Harris 2014).

The villages in West Bengal differentiate from caste Hindu villages in Bihar and Nepal. Collective practices such as hunting in groups, protecting fields together from cattle and occasionally cooking within the community are particularly strong in the Adivasi (tribal) village Uttar Chakoakheti, whereas also Dholaguri is home to the culture of Rajbanshi, and cohesive to some extent. The distribution of land is less unequal than in the other village, and households depend similarly on agriculture as a primary source of income, which means that the labor burden is much more equal for everyone, with less differences in class.

While collectives in other regions decided after crop failures to change back to individual cultivation, a feeling of unity encouraged members in the Adivasi

village to continue and to take risks collectively: "we, both male and female are working together, trying new technologies. We have to take the risks- sometimes we will gain financially and sometimes we may face trouble. We have to accept this for our own development" (female farmer, FGD, UC). In other sites, particularly in Bihar and Nepal, considerable dialogue over the opportunities and challenges of higher level cooperation was required, and three groups reduced levels of cooperation, shifting from a model of full labour pooling (model 1), to one where people were responsible for their own plots (model 3). Additionally, individuals' drop-outs were much lower than in the neighboring project village, and one new group emerged spontaneously with limited external support. We assume that existing commoning practices opened up spaces for emotional attachment to neighbors and community members, which now encourage groups to take risks again together despite crop failure. Deeply emotional, affective relations between individuals "supported the collective in times of crisis", as Nightingale (2019) suggests. Rather than institutional rules and economic logics, emotions or "alternative rationalities (…) develop informal modes of cooperation" (Nightingale 2011a), e.g. they wanted to see more greenery in their community which they had experienced through collective farming.

We observed that the Adivasi community has strong common tribal cultural practices with fewer practices that fragment residents in terms of ethnicity, class and gender. We observed that marriages, cultural and religious festivals commonly celebrated together, which is different in other villages where such events often reflect social discrimination and boundaries of who is invited and who is not. For example, the Adivasi community celebrates "Korom Puja" to pray to plants and the environment, where also non-Adivasis participate. In return, Adivasis participate in Durga Puja which is organized by the Bengali community. In addition, diverse community members have a history of collectively successfully pressurizing the local government and individuals for shared interests, such as banning alcohol or installing shallow tubewells. We assume that it is through these social practices and relationships, that emotional attachment is created which was also strengthening new collective practices. This builds on the understanding of emotions based on relationships and formed through social practices rather than individual experiences (Morales and Harris 2014).

Contrastingly, we also experienced resistance to collectivisation, for several reasons. The primary reason were individual financial and time constraints, as wage labor would provide daily monetary returns, whereas collective farming required continuous labor and financial inputs and unsecure returns at the end of the season. In West Bengal, for example, rice cultivation is seen as the households' annual food security. As food security is intrinsically linked to the household unit, collective farming was practiced for vegetables, but not rice. Within established groups, individuals differed in the extent of their willingness to collectivize. For example in Madhubani, Bihar, one group leader (Bhagwatipur 2) is a school teacher and was selected by men and women due to her education. However, the reliance on her educational status and respected position did not

comply with the projects' focus on establishing groups of marginal and tenant farmers in order to cultivate together. Other motivations such as the engagement with project staff and the availability of trainings drew individuals to participate in the groups. Although the other group members, mostly elderly men, were most interested in establishing collective model 1, the idea of shared labor and procuring inputs did not align to the teacher's interest as she was less dependent on earnings through agriculture. The attachment and trust to one (female) group leader in the community was closing down the opportunity for male laborers to establish greater cooperation within the group.

7. Conclusion

This paper interrogated the ambivalences of collective farming as approach for enabling marginal and tenant farmers to engage in smallscale agriculture. While Ostrom's principles for managing the commons assume that formalized rules and informal norms are purposive, our analysis shows in line with critical institutionalism and anthropological approaches that social relations and everyday practices are crucially shaping collective farming practices. By drawing from FPE, this study contributes to a richer understanding of collective farming, and questions common interests and equal benefits within communities and households when establishing such an approach (Elmhirst 2015). Forming farming collectives brings various responses and struggles related to gender, land ownership, age, and ethnicity. These variables might also be important to other local governance arrangements as indicated by earlier studies on fishery cooperatives (Nightingale 2013), water user associations (Meinzen-Dick and Zwarteveen 1998) or community forestry groups (Agarwal 2000).

The three issues we explored, (1) social relations across space, (2) intersectionality, and (3) emotional attachment, are not stand-alone, but interconnected from a gender perspective. The FPE framework helps to connect these ambivalences within collective initiatives, e.g. as gender and social relations in collective farming are always intersectional, and framed by emotional attachments. Such an integrated framing helps explain contradictions and better situate ambivalences in collective farming, such as around group membership and gendered labor division, as we found across six villages and 18 groups in the Eastern Gangetic Plains.

The collective farming approach introduced in the studied project aims at shifting power relations in water and land management towards the benefit of marginal, tenant and women farmers. While the action research approach to farmer collectives attempted to fulfill collective farming principles (Agarwal 2010) and institutional design criteria (Ostrom 1990), we found contradictions between intended benefits of collectivization and their actual functioning. Our data demonstrates the various ways according to which the redistribution of labor and benefits based on class and gender, and the concept of individual group membership was renegotiated and aligned to existing norms and practices of farming as a household unit. On the one hand, group members benefitted differently despite

the aspired egalitarian approach. On the other hand, in enabling environments with less fragmenting social practices, the collective farming approach turned farming groups towards more equal shares due to their collectivization of labor, land and benefits. Our approach to observe everyday practices and continuously engage with the groups over a period of four years documents how institutions and community relations co-emerge (Nightingale 2011a). We observed a range of ways in which social relations mediate access and control over resources in collective farming:

Firstly, social relations within and beyond the group, across different scales within households and communities, can help understand how concepts of group membership and the (gendered) division of labor are practiced in various ways. Everyday struggles and women's household tasks, family care and the dependence on subsistence agriculture shape how individuals are differently willing and able to collectivize labor, land and capital (Kariaa et al. 2016). This is in line with Agarwal (1997) who argues that women with weaker intra-household bargaining power have weaker extra-household positions, particularly if a husband and marital family oppose her stand. Intra-household relations can both inhibit and support women's role within collective farming groups. Across groups within the same region, we found differences on the extent to which gender norms on using irrigation technologies were reproduced or challenged. All cases demonstrate the importance to take into account broader social relations across scales, but also individual benefits of collective farming in terms of cash, time and decision-making to understand the degree of more socially just outcomes in comparison to individual family farming.

Secondly, if the division of labor, capital and land distribution and benefits remain unequal or even get exacerbated due to unequal gender and class relations, the project's approach to collective farming has not fulfilled its very intention to redistribute land, labor and water resources more justly. Therefore, gender and class relations matter immensely in collective groups, and it is important to reflect these not only prior, but also throughout the formation of groups, particularly since group homogeneity and heterogeneity is highly context-specific. Otherwise, there is a danger that subordinate positions are reproduced due to the internalization of particular (gendered) labor roles.

Lastly, emotional attachment among group members and existing commoning practices matter strongly when establishing collective farming, more than household's or individual's socio-economic preconditions and prior farming skills alone. Emotional attachment to the community helped overcome crop failures through mutual encouragement, promoted continuous informal discussions and motivated to continue sharing resources and labor, which are the most important dimensions to keep farmer collectives functioning.

Establishing farmer collectives requires understanding cultural norms and practices, e.g. existing gender relations in agriculture and perceptions of households as a production unit. FPE opens up new analytical angles – e.g. on structural gender inequalities in household responsibilities as reason for unequal labor

contribution in collectives, what economists call 'free-riding'. Hence, FPE approaches help understand how household and community dynamics, intersectionality and emotional attachment shape collective action. In order to understand gendered power relationships in scales unexplored by mainstream commons studies, highly contextualized and local approaches implemented and observed by trained staff are required to avoid the reproduction or exacerbation of existing power imbalances in households and communities. Such reflective and relational approaches question Ostrom's institutional design principles by uncovering ambivalences in collective action from feminist and social justice perspectives.

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