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Research Article

Examining the 'feminization of agriculture' in a mixed-farming system in Sindhuli District, Nepal

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Abstract

This paper aims to explore the feminization of agriculture amidst the agrarian transition from cereal to citrus crops in Sindhuli district. Multiple ethnographic field studies in citrus-producing areas have been used to present the conceptual debate and empirical findings on the feminization of agriculture in a mixed-farming system. The paper highlights changing labor arrangements for household labor, exchange labor, and wage labor in agriculture and presents the nature of the agricultural work conducted by men and women. The paper argues that cash crop farming has resulted in a gendered hierarchy in agriculture, with men primarily occupied with skill-based work in high-value citrus crops, while women's engagement is mainly limited to subsistence farming and menial agricultural tasks. However, some women directly benefit at the household level because of their involvement in citrus production. The study shows that gender-based inequalities in labor use have the power to reinforce and intensify the existing gender roles that render women subordinate. However, women choose their work based on its importance for household food security. The paper portrays four categories of feminization, namely feminization of labor vis-à-vis managerial feminization, feminization of labor categories such as household, exchange, and wage labor, and feminization of particular crop/livestock and subsistence/commercial farming. The study concludes that feminization varies based on the degree of crop marketability.

Keywords

Feminization of agriculture; division of labor; agrarian transition; ethnography; Nepal

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Introduction

In Nepal, agricultural feminization is mostly associated with migration (Tamang et al. 2014, Maharjan et al. 2013, Piotrowski et al. 2013, Gartaula et al. 2012). Male outmigration and male off-farm employment are considered the primary reasons for the occurrence of the phenomenon. Armed conflict is another factor associated with an increasing number of women in farm decision-making and the labor market (Upreti et al. 2016; Advocacy Forum and International Center for Transitional Justice, 2010), pointing again towards men's mobility and migration. In rural Nepal, 82.32 percent of economically active women and 62.82 percent of men were engaged in agricultural activities (Central Bureau of Statistics [CBS] 2013: 67). Backed by the population census and labor census of the government (CBS 2013), along with reports prepared by development agencies (The Food and Agriculture Organization [FAO] 2011, The World Bank 2009), the feminization of agriculture has been considered an axiomatic statement. However, this overgeneralized packaging of the feminization debate is problematic in the analysis of changing gendered patterns and farm dynamics in Nepal. The recent literature shows that an agricultural transition is changing how women work in agriculture (Tamang et al. 2014, Adhikari-Thapa 2013, Adhikari and Hobley 2011). Therefore, more research is needed to obtain a better understanding of women's participation in relation to the proportion of market-oriented crop production in a mixed-farming system.

This study critically evaluates the existing literature on women in agriculture in Nepal, highlighting multiple states of feminization within the realm of agriculture and accounting for the agricultural transformation and dynamics of continuity and discontinuity of gender-based practices. The gendered pattern of labor contribution observed in Nepal's mid-hills shows that women contribute to cash crops but have no decision-making power in market-oriented crops (Adhikari-Thapa 2013). Men might return to agriculture when they see the opportunity to earn more cash, resulting in de-feminization. Scholarly work suggesting men's and women's relative engagement in agriculture based on crop marketability provides an opportunity to look at gendered opportunities and power dynamics in the changing agricultural context (Rana et al. 2018). The return of men to agriculture due to the introduction of a cash crop generally has the effect of marginalizing women, increasing their workload, and reducing their control over household resources (Adhikari-Thapa 2013, Acharya, 2000).

Background

Debates on the nature of the feminization of agriculture (Kawarazuka et al. 2022, de Schutter 2013, Doss et al. 2011, FAO 2011, Zhang et al. 2006, Deere 2005, McMurry 1992) provide a new angle on gender hierarchies in agriculture. Scholars suggest the need to delve deeper into the question of whether women manage farms or merely serve as farm laborers, whether they are solely involved in staple crop production or also in cash crop production, and whether their involvement is limited to the lower rung of the value chain or encompasses every level of work. In addition, the issue of whether women do the work and men merely use the fruit of their labor has been a concern for many scholars dwelling on the phenomenon of agriculture feminization. However, scant research and a lack of proper conceptualization regarding what may constitute the feminization of agriculture have resulted in gaps in existing knowledge concerning women's role in agricultural development and the effect of agricultural development on women.

In line with the global trend, scholars have used the feminization of labor and managerial roles as the analytical framework for examining the feminization of agriculture in Nepal (Gunnhild 2015; Tamang et al. 2014; Gartaula 2010). Gunnhild (2015) analyzes labor use mainly at the household level, along with limited analysis of wage labor, thus confining the research within the periphery of household labor and decision-making. Gunnhild's study suggests that if labor is used without substantial

decision-making power in the hands of women, the feminization of agriculture may be a form of exploitation. Women working in agriculture are characterized as family workers in the domestic sphere, whereas wage laborers are characterized as temporary, seasonal, and casual workers in the labor market. Women usually do labor-intensive and time-consuming work (Tamang et al. 2014). These scholars have also highlighted how women exchange laborers are seen as compared to male exchange laborers. Women's exchange labor is usually undervalued in relation to male exchange labor (Tamang et al. 2014). Research on women left behind (Maharjan et al. 2013, Adhikari and Hobley 2011, Lokshin and Glinskaya 2008) has highlighted the increased use of hired female laborers by migrant households due to the improved cash flow within the household that makes it possible to substitute household labor with hired labor. In addition, these authors have provided insights on decreasing family labor and increased leisure due to better household income. Loss of family labor and increased hired labor have severe implications for exchange labor. These scholars also suggest that women have the additional burden of domestic labor as they must perform the work that would normally be done by household males who have migrated. De facto, women-headed households face heavier burdens than those women living with their in-laws but have increased decision-making power (Gartaula et al., 2012; Gartaula et al., 2010).

Adhikari-Thapa's (2013) study on the relationship between cash crops and gender roles shows how the degree of market orientation of the crop affects gender relationships. The study also suggests that males who had migrated might return to farming if they saw the prospect of a higher cash income in agriculture. Gartaula et al. (2010), on the other hand, focused on male outmigration and its impact on women's participation in agricultural labor and agricultural decision-making. They adopt the term 'feminization' and describe the increased participation of women in labor as 'labor feminization' and their increased role in decision-making as 'managerial feminization'. These scholars found a higher level of managerial feminization in de facto autonomous female-headed households but a lower level in patrilineal households where parents-in-law are present. Therefore, they consider domestic arrangements to be an integral factor influencing labor force participation and decision-making. Social arrangements within the patriarchal system that subordinate women directly or indirectly are thus considered problematic. Gartaula et al. emphasize that the absence of men fosters women's empowerment and places them at the forefront of decision-making, despite the lack of conceptual clarity regarding empowerment. They also point toward the reduction in women's ability to make decisions in the presence of a male or a senior family member who is considered the head of the family in a patriarchal society. Despite women's increased autonomy, the examples of women wanting to leave agriculture further show a context in which women are a part of agriculture by force rather than by choice, suggesting a more complex gender relation where, despite men's absence, women are unable to make strategic life choices as per their will. Most research in Nepal has nevertheless presented a situation of feminization as a result of direct male outmigration. However, while not all families have male migrants, the social and gender relationships within farm families are evolving. Thus, it is essential to understand feminization beyond the scholarship of male outmigration and within the broader context of multi-functional agriculture.

Criteria used to Determine Feminization of Agriculture

There is no consensus among scholars about what feminization really is. According to feminist economists, agriculture feminization refers to the measurable increase in women's participation in the agricultural sector (Hanne 2015, 29). However, as part of the feminization debate, borrowing from Chant (2006, 2007, 2008), Bieri (2014) has extracted three different meanings

associated with the phenomenon. The feminization of agriculture could thus be indicated as i) with reference to past involvement, women's involvement in agriculture is increasing; ii) without reference to the past, the incidence of women's involvement in agriculture is higher than that of men; iii) with or without reference to the past, women emphasize or provide more meaning toward the experience and involvement in agriculture as compared to men. The first two emphasize the numerical dimension of feminization, which is either compared with men or with previous states in time. The third aspect could be interpreted as offering a broader conceptual space combining women's experience and scholars' heuristic knowledge through ethnography-based research to subjectively understand the phenomenon of feminization in agriculture.

Whether a study uses time-use data, activity share, labor force participation, a survey tool with specifications about decision-making and daily activity in agriculture during peak and lean seasons based on the agriculture calendar, case studies, or narratives, scholars have suggested using mixed research methods to better capture the phenomenon by gathering both numerical and subjective qualitative data to understand women's role in agriculture. Typically, people understand feminization by comparing it to either the previous state or the current state between men and women; therefore, the term is better understood by comparing numerical dimensions or the qualitative nature of agricultural work. Bieri (2014) asserts that the term entails more than numbers; it also refers to changes in structures, processes, and norms associated with a female realm. Feminization is thus considered to encompass social structures and institutions that create and retain females in specific sectors. Such a notion of feminization thus questions gender hierarchy, in which women are considered subordinate to men.

In this paper, feminization of agriculture was explored using a mixed-method approach with quantitative data providing a glimpse of gendered participation in a mixed-farming system that highlights the extent of women's participation in agriculture in association with the changing degree of market orientation of the crop/livestock. Quantitative methods with a questionnaire survey were used to collect data on labor force participation by sex to gather numerical and measurable accounts of women's involvement in agriculture and to gather measurable accounts of decision-making participation as a proxy for women's empowerment. On the other hand, qualitative tools were used in two ways: first, to gather contextual clarity of the agricultural setting of the study area and the degree of market orientation of crop/livestock; and second, to explore the nature of women's participation in each domain of agricultural production. During the ethnographic fieldwork, qualitative data collection tools included narrative interviews and participant observation. Labor force participation (International Labour Organization [ILO] 2022) and task-based participation of women in different activities were used as criteria to determine the feminization of agriculture. Women's lived experience highlighting their day-to-day engagement in agricultural work is presented as a condition that binds women into agriculture.

In total, 140 household surveys were conducted between 2016 and 2017. The questionnaire included inquiries related to Labor Force Participation in four production domains. However, the data on labor participation was limited to the respondent's recall of the major activities for each domain and the number of labor days provided by men and women, respectively. The Labor Force Participation (LFP) included the total male and female household members above ten years who contributed their labor to agriculture. The study unravels the changes, if any, in terms of household labor use, wage labor relationship, and the everyday lives of those engaged in an agrarian lifestyle associated with citrus production, in particular, by using qualitative narrative data.

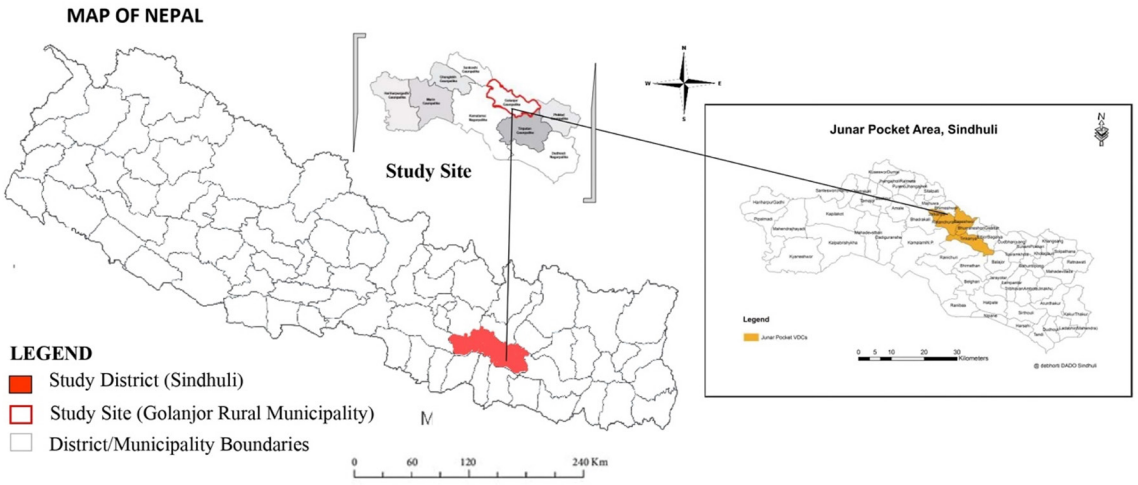

Figure 1: Map of Study Site Source: DADO (2014)

Study Site

Multiple periods of ethnographic fieldwork were conducted over nine months between 2015 and 2017 in the citrus-producing areas of Sindhuli district. Sindhuli, situated between 168 meters and 2797 meters above sea level, boasts a diverse agro-climatic environment that is ideal for various types of agricultural activity. This area is well-known for the production of *junar* (*Citrus sinensis* Osbeck*)* and other citrus fruits. According to the Ministry of Agriculture Development [MOAD] (2012), out of 60 citrus fruit-producing districts, Sindhuli had the highest production (9737 metric tons) and area coverage of 1476 hectares as of 2011/2012. Moreover, Sindhuli boasts 88.98 percent agricultural households, with 74.46 percent of males and 86.86 percent of females above ten years actively engaged in agriculture, forestry, and fisheries (CBS 2017). According to the Ministry of Labour and Employment (MOLE) (2014), a total of 27,793 males and 1086 females migrated between 2008 and 2014, excluding individual applicants from Sindhuli. Around 87.7 percent of the population lives in rural areas, and 5.16 percent of the total population has migrated out of the country. Ten villages from Baseshwor, Tinkanya, and Ratanchura of the Golanjor rural municipality of Sindhuli district were selected for the study based on the degree of market orientation towards citrus farming. Only 64.91 percent of females in Golanjor are literate, compared to 80.62 percent of males.

Feminization of Agriculture Case Study: Citrus-Producing Area in Sindhuli

Agrarian Transition: Agrarian transition in the study area is conceptualized as having varying degrees of market orientation, focusing on increasing or maintaining the productivity of the crop or livestock. Given the market value of the crop or livestock at a given time and space, farm decisions are made based on land use and income generation. Farmers' decisions to cultivate paddy, maize, and millet over citrus, mainly *junar* or sweet orange (*Citrus sinensis* Osbeck), rather than cereal crops show how they decide to make crop transitions based on the market and non-market value of a crop. When the citrus had low market value, then the farmers produced it on a small scale, but as the fruit started having more market value, growers moved to citrus production on a larger scale. Such transitions have resulted in changes in land use from monocropping to phases of inter-cropping, multi-cropping, and yet again toward monocropping of citrus on some plots of land. The political economy has also influenced the expansion of citrus cultivation in the study

Production domain	Household labour (in %)		Female to Male Ratio	Exchange labour (in %)		Female to Male Ratio	Hired labourer (in %)		Hired labourer	
	Male	Female		Male	Female		Male	Female	Total (Number)	Female to Male Ratio
i. Cereal	46.56	54.51	1.18:1	45.03	72.18	1.6:1	32.55	67.44	258	2:01
ii. Vegetables	19.08	52.25	2.78:1	0	6.01	-	46.15	53.84	26	1.16:1
iii. Livestock	36.25	53.75	1.5:1	0	1.12	-	0	100	2	-
iv. Citrus	48.09	49.62	1.04:1	1.14	1.5	1.3:1	40.6	59.39	564	1.4:1

Table 1: Household Labour and Hired Labourers in Four-production Domain by Sex. Source: Field Survey, 2015/2016

site, with the government and other organizations supporting the commercialization of *junar* and other citrus varieties. Thus, citrus is considered a high-value crop with a high degree of market orientation in the area, as compared to other crops or livestock. This study presents the case of a mixed-farming system that includes four major agricultural production domains—cereal, citrus, livestock, and vegetables.

Labor Force Participation: Table 1 shows two types of intra-household agricultural labor, household and exchange labor, and hired labor in four agricultural production domains. Household labor includes agricultural work conducted by household members to produce food for their own use or for market production of crops or livestock. Exchange or reciprocal labor in the study site includes agricultural work performed by household members in return for agricultural labor from other households. The study used the total number of household members above ten years to estimate the total number of people available to work in agriculture. The total number of household members above ten years was 532, out of which 262 were male and 266 were female. Given that every household member over the age of ten contributes their labor to agriculture, the study calculated the following: (i) the percentage of male household labor compared to the total male population, and the percentage of female household labor compared to the total female population; (ii) the percentage of male household labor providing exchange labor compared to the total male population, and the percentage of female household labor providing exchange labor compared to the total female population. This analysis was performed for all four agricultural production domains.

Female participation is higher than that of male participation in all production domains and all types of labor. The female to male ratio in household labor is highest in the vegetable domain, followed by livestock, cereal, and citrus. Household members primarily provide the labor required for vegetables and livestock, as these two domains do not use exchange labor or hired laborers. With a female to male ratio of 1.6:1, the LFP ratio in exchange labor shows female domination in cereal production. Although the use of exchange labor is negligible in vegetable, livestock, and citrus production, female participation is still greater than that of males. In the context of exchange labor in cereal crops, a greater proportion of women participate in this type of work. Women's involvement in food preparation during household labor could potentially account for this. A woman involved in food preparation will be exempt from exchange labor. Thus, the household labor of women is undercounted when they are busy preparing food for laborers. Women's role in agriculture is greater in situations where household food production needs to be secured.

Table 1 not only presents the concentration of labor through numbers, but also highlights the qualitative transformation of labor structure in different types of agricultural production. It shows that the practice of exchange labor, which is dominant in traditional cereal crops, is not evident in the three other domains. The pattern of

exchange labor, known as *'parma,'* changes with the type of production. Cereal crop production uses both household labor and exchange labor, with a heavy emphasis on female labor. In contrast to vegetable and livestock production, citrus cultivation uses hired laborers. There is a higher proportion of women in wage labor across all production domains, with a greater female-to-male ratio in cereal cropping. Citrus production is shaping the wage labor market, employing twice as many wage laborers as cereal production. Due to the high number of wage laborers employed in citrus production, the labor demand is met from the labor market rather than from the traditional practice of exchange labor. The introduction of new horticultural crops is leading to the abandonment of the exchange labor system.

Task-based Division of Labor

> Men and women alike are experts in cereal production. […] But when cereal is planted with citrus, then not many people know how to plant multiple crops. Whether it is vegetables or cereals. Whenever work is being done in citrus-planted areas, I prefer to overlook and supervise the work. If citrus plants are damaged then it will be a great loss. While our mother or wife prepare food for the laborers, we monitor the work being done in the field. (Male citrus farmer, aged 46)

Task-based division of labor consists of gendered patterns of engagement for each production domain at the household and wage labor market levels. Work usually done by men in cereal production includes land clearance, plowing, leveling the ground, repair of irrigation canals, and maintenance of tools and equipment. Work primarily done by women includes sowing and plantation and almost all the post-harvest work. Post-harvest work for cereals is often considered an extension of food provision; therefore, women are responsible for storing and managing cereal distribution throughout the year. Except for straw storage, women perform the majority of the post-harvest work, such as drying crop residue, winnowing, threshing, and seed selection. Apart from a few activities associated with land preparation and plowing, both men and women participate in all the other tasks. Plowing is the only activity that is culturally inappropriate for women to engage in. Since men plow the field, they usually level the ground afterwards.

> If I could I would have worked for wage. But the practice of exchange labor is more prominent in this area. Without exchange labor it is not possible to get laborers to work in one's field. In my land, I need three oxen-pair, six *ropār*, four *bāosey*, and three *lāthey*. In total, I need at least sixteen *jan* (labor), with ten men and six women. For ten men, I have to provide twelve days of my labor only for *hāli*, and fourteen days for *bāosey* and *lāthey*. Total of thirty-two days of labor (laughs). Now, I cannot provide that labor at once, so mostly I carry manure year-round, and dig *āli*, or help during harvest season to provide labor that I used during plantation in my own land. That's why I hardly get time to work for money. (De facto female head of household, aged 36)

Terms used to define the workers preparing land for paddy plantation include '*bāosey*', '*hāli or haliy*ā', and '*lāthey*'. *Hāli* or *Haliy*ā are the men who plow the field. *Lathey* are the male laborers who assist in the preparation of land for planting, constructing bunds or *aali* to hold water for irrigation, and beating large soil clods when needed. *Bāosey* is a special type of *lāthey* who levels the field to give a final touch before the seedlings are transplanted. For one *lāthey* or *bāosey*, who are male laborers, one male should return the same labor. If there is no male in the household, two female laborers should return the labor. In the case of one *hal*, which comprises one *hāli* with an oxen pair, four female labor days should be provided if another *hal* is not available for exchange. Women usually work as *ropār* or plantation laborers. They perform important intercultural tasks like manure

application, weeding, mulching, cutting, and bundling. Exchange labor arrangements often create a surplus of women's labor in comparison to men's labor. This is because there may be double or sometimes three or four-fold provision of women's labor in return for one man's labor.

If a household is producing vegetables commercially, men are more likely to be engaged in the work. Women, on the other hand, provide labor for subsistence cultivation and small-scale market production. They usually make the decisions on what to grow, where to grow, how to grow, and when to start cultivation. Men rarely provide labor or even managerial input for kitchen gardens because they view vegetable production for home consumption as part of a woman's duty to feed her family. In Nakajoli, Baseshwor and a few areas in Ratanchura, male vegetable entrepreneurs were more numerous than female vegetable entrepreneurs. Particularly near the road and market areas, the number of female entrepreneurs was relatively low.

Vegetable farming had also lured some youths, especially in Ratanchura, to return to their villages. These youths had already started commercial vegetable farming and were now actively developing citrus orchards. They relied on family labor, usually mothers, fathers, and wives, and used little to no hired labor. When women grow vegetables, whether for commercial or domestic use, they do all the work, from land preparation to planting, watering, chopping, drilling, fertilizer application, harvesting, and seed selection. However, when men are engaged in commercial vegetable production, they use hired laborers and take help from household members. Since subsistence vegetables are planted on a small area of land, women usually prepare the soil with a spade and hand hoe rather than relying on an ox-drawn plow. They also prepare '*dyāng*' or furrows for the cultivation of vegetables such as cauliflower, tomatoes, cabbage, spinach, lettuce, and other crops. Unlike the case of cereal production, women grow vegetables independently without seeking any support from their male counterparts or male laborers because there is no specific work for men in vegetable growing.

When it comes to livestock rearing, both men and women participate in fodder collection, watering and feeding, forage preparation, milking, herding, and dung-management activities. Both men and women look after animals such as chickens, pigs, goats, cows, and buffaloes. However, male members of the household typically take care of bulls and oxen. Unlike other livestock, these large animals are not found in every household. Households raising bulls and oxen are usually professional laborers that plow other people's land for a wage. Some households, on the other hand, own oxen to plow their land and to rent out for cash income. Unlike professional *hālis*, these men may or may not plow other people's fields. Bulls are rented out for breeding purposes. Depending upon the distance and number of days the bulls and oxen are used, the owners receive Rs 800–1000 per day. Since the males of these large animals are more aggressive and difficult to handle than the females, men usually claim ownership of the mature males. In livestock management, men play an exclusive role in plowing and breeding operations, while the day-to-day tasks of feeding, watering, and other activities are shared by men and women, with women playing the predominant role. However, men dominate the decision-making related to the buying and selling of livestock.

Based on the priority given to citrus cultivation on a farm, task-based gendered division of labor varies. If the household has low to moderate expectations from citrus, then the household members mostly provide the labor, and wage laborers may not be hired. At the household level, the higher the market orientation of citrus cultivation, the more distinct is the role of men and women, as shown in Table 2, but as the market orientation diminishes, the difference in the work conducted by men and women is

Work under Citrus Plantation	Moderate to high aspiration from citrus		Low to Moderate aspiration from citrus	
	Household Labour	Wage labourers	Household Labour	Wage Labourers
Land preparation				
-Orchard space management	Mostly male	x	Mostly male	x
-Dig holes or pits	x	Mostly male	Both	x
-Carry fertilizer	Mostly female	Mostly female	Mostly female	x
-Mix fertilizer and soil, and cover the land	Both	Both	Both	x
Plantation				x
-Plant saplings using wooden/bamboo sticks	Both	Both	Both	x
- Regular watering	Both	Not used	Both	x
- Regular mulching and weeding	Mostly female	Mostly female	Mostly female	x
- Regular application of fertilizer	Mostly female	Mostly female	Mostly female	x
- Spray insecticides	Mostly male	Mostly male	Mostly male	x
- Harvest	Both	Mostly male	Both	Both
- Prepare Bordeaux paste,	Mostly male	x	Mostly male	x
- Clean the trunk and apply Bordeaux paste	Mostly female	Both	Both	Both
- Cutting, trimming and pruning	Both	Both	Both	x

Table 2: Household and Hired Laborers in Citrus Production. Source: Field Survey, 2015/2016

more blurred, with less structured gender-based division of labor.

> I sometimes look around during citrus plantation and harvesting, but only when *dāi* (literally means brother, referring to her husband) has to leave for some emergency work [...] when he gets back, he tells me that I can leave as he will take care of it. (Ranjana, 38 years, a woman from a citrus-producing household)

On the one hand, Ranjana's narration shows her reluctance to identify herself as a citrus farmer, but on the other, she proudly tells her story of acquiring the skills of cutting grass and her struggle to learn farming techniques after her marriage:

> My father was in Nepal army, so we traveled with him most of our childhood. Due to traveling from one place to another, I did not know anything about farming. When I got married, we had to work in the fields, plant maize, millet, paddy, and cut grass for buffaloes on a daily basis. Many times, I had even cut my hand while cutting grass, as I was not used to it. My in-laws used to complain about it every time. But in two years, I learned everything. (Ranjana)

Ranjana's narrative reveals that she even struggled with cutting grass, a task usually considered easy by farmers. Ranjana's perseverance and diligence in learning traditional farming methods, combined with her hesitation to take on citrus farming, raise concerns about the sociocultural mindset and expectations surrounding women's integration into the citrus production domain. Although Ranjana's family believed that learning traditional farming was critical for women in rural areas, they did not think that learning citrus-farming techniques was essential for her. In contrast, after spending years in Kathmandu, her husband returned to the village, took up citrus farming after inheriting his father's citrus orchard, and later planted new saplings on land previously used for maize and millet cultivation.

Socially, it was acceptable for women not to know the skills and techniques needed to grow and harvest citrus. However, traditional farming skills were considered an asset for women living in rural areas. Not knowing traditional farming skills resulted in day-to-day pressure, as experienced by Ranjana. While other agricultural activities became an inherited responsibility of women in farm families, citrus responsibility was taken over by men who returned to agriculture after seeing the possibility of earning a high income. Given men's significant presence in citrus farming, women tend to undervalue their work in citrus production despite their labor contribution. Sons, on the other hand, are not pressurized to learn traditional agricultural skills:

> If I leave home for a few days, then there will be chaos. *Dāi* does not do anything in the house. He sometimes cooks, when I am not around. Sometimes helps in the kitchen when there are guests. But besides that, he does not do anything. Especially when it comes to carrying loads, manure, he wouldn't even touch it. Other men do it in the village, but no […] not *dāi*. His parents didn't let him work at all in the field. So, he didn't know anything about farming. Later, when he came back from Kathmandu after carpet business failed […], he started getting engaged in citrus farming. (Ranjana)

Like the wage laborers, women play a significant role in weeding, carrying, and applying manure-based fertilizer. 'Mal bokne, jhārpat ukhalne, tyai ta ho ni kām,' was a statement they made repeatedly. The comment suggests that their work is to carry manure and weed out unnecessary plants. Women laborers often used the term *'mela pāt'* to denote agricultural work that includes regular agricultural tasks such as weeding, fertilizer application, and other cereal crop-based activities. Men were sometimes seen doing these tasks; however, any men carrying manure and weeding were mostly working for their own farms. These chores were seen as an extension of routinely performed traditional agricultural work, which did not require any new skills or technical know-how and was considered tedious. Household males conducted activities typically considered skilled, such as managing orchard space, preparing Bordeaux paste, and spraying insecticides. While citrus cultivation tasks were not culturally gender sensitive, males primarily performed a few tasks, while females tended to perform the other tasks at both household and wage labor market levels. Variations in labor arrangements based on tasks in each production domain reveal the gendered pattern of agricultural work.

Discussion

The gendered nature of exchange labor is an important factor in understanding feminization in Nepal. As an essential component of traditional agrarian life, the division of labor based on kind rather than money preserves close relationships between neighbors and family members. Groups of households work together to finish the work in each plot, with an investment of labor from both male and female members. In such systems, cash usage is minimal. Typically, households use cash to hire draft animals or men for plowing, as not all households have the capacity to raise these animals.

In households with fewer or no male members, hiring men to plow was common. As per local norms, rather than in-cash payment, women provided two to four days of their labor for one day of hired plowman and one day of hired plowman with an ox, respectively. This practice differed in detail from village to village, with some villages requiring three workdays from women in exchange for one day of labor. This study demonstrates how crucial it is to comprehend labor exchange practices in order to understand the transformation of agricultural societies where crop marketability has led to reductions in the practice of exchange labor.

The labor exchange practice, which is primarily linked to the production of cereal crops, values labor according to the difficulty of the tasks, which are typically

performed by men, rather than according to the laborer's time contribution. This paper highlights women's significant contribution to cereal production, given the higher ratio of female involvement in hired and exchange labor for cereal crops. The primary role of women in cereal crops is that of *ropār* or plantation worker, which is socio-culturally defined as women's work. All other work done by women is socio-culturally gender neutral. On the other hand, men's role in cereal cultivation is socio-culturally bounded by the works conducted by *hāli, bāosey*, and *lāthey*. These culturally constructed roles restrict and separate men and women when they work as exchange laborers and hired laborers. However, these tasks are generally interchangeable at the household level, with men performing women's tasks and women doing men's tasks, except for plowing with oxen, which is strictly men's work. The labor exchange practice has two gender-related implications. i) In most study sites, labor exchange arrangements misconstrue women's surplus labor relative to that of men, as a result of either double or sometimes three or four-fold labor provision for women in return for one-man's labor. ii) The labor of male household members in cereal cultivation plays a crucial role in determining the labor pooling of household women. This is because some women may not practice exchange labor due to their husband's and other male family members' labor as *hāli, bāosey,* or *lāthey*, which can be enough to obtain work from outside women laborers. Thus, the practice of exchange labor benefits women who have more men at home but disadvantages households with few or no male members.

Women's involvement in agriculture has increased relative to men's, not due to male-outmigration, but because of men's limited involvement in vegetable subsistence production, livestock management, and post-harvest activities for cereal cultivation. However, stark differences in the relative participation of men and women could be found based on the degree of market orientation of the crop. Crop marketability attracts men to get engaged in citrus cultivation with limited household labor input, as the increased income enhances their capacity to hire laborers. Compared to cereal crops, citrus crop production uses a higher percentage of hired labor and a lower female-to-male labor force participation ratio. Overall, the number of hired female wage laborers is high, but the ratio of female-to-male labor force participation (LFP) shows a smaller gap in wage labor participation in citrus compared to cereal crops. Thus, this paper argues that all forms of division of labor are influenced by whether the crop is produced for the market or for subsistence. Nevertheless, an analysis of women's agricultural work, either at household level or on the wage labor market, or in cereal or citrus production, shows a higher concentration of women in tedious and menial tasks for which the payment is less than for other agricultural work.

However, women are starting to work in the citrus sector, which requires new methods and skills. In addition to the routine tasks of weeding and fertilizer application, women work in the citrus orchards post-harvest. Their tasks include cutting, trimming, and pruning the trees in addition to cleaning the trunks and applying Bordeaux paste. The majority of these female wage workers are new to the wage market. Women who have previously only worked at the household level and as exchange laborers have been drawn to these activities because of the competitive daily wage. However, because the harvest and post-harvest activities of citrus coincide with those of paddy and millet, many wage laborers working with cereal crops have been unable to take advantage of the chance to earn high wages.

The feminization of one sector or sub-sector may impact the de-feminization of another, leading to the simultaneous occurrence of various types of feminization in agriculture. Feminization scholarship in agriculture should therefore include, but not be limited to, the following issues:

1. Labor as defined by type of work: feminization of agricultural labor and managerial agriculture. Physical labor

and decision-making are the two broad categories that have already been used by numerous scholars. Another factor needing attention is the task- or activity-based feminization process in various agricultural production domains.

2. Type of labor: This paper suggests that, beyond the widely used term 'feminization of agriculture labor,' researchers in Nepal should also prioritize exchange labor, which constitutes a larger share of household labor. Labor force participation in the household economy should focus on family labor and exchange labor, as there could be a trend of feminization of exchange labor, paid through kind rather than cash or wage.
3. Labor as determined by crop ownership: feminization of subsistence crops, mostly cereals, instead of the feminization of livestock, market-led cash crops, or export-led crops could be a different, more complete way to think about feminization in the context of product specialization. In Nepal, where mixed farming is practiced, the ownership of crops and livestock can have a substantial impact on the labor categories, depending on whether the crop is used solely for subsistence or also for market sale.

This paper suggests that feminization categories might help us understand how complicated and multidimensional feminization is by letting us compare cases within and between groups as part of rural transformation. The characteristics of feminization as they relate to these four production domains vary according to the life paths of men and women, as well as the trajectories of family and/or household livelihoods. Feminization is an ever-evolving social process that is constantly in flux. Like Boserup (1970), several scholars have emphasized the need for an in-depth, comprehensive, and comparative study of the gendered impacts of trade liberalization on employment in food and cash crops (Whitehead 2009; Deere 2005), as well as the process and causes of feminization and de-feminization during agricultural transition. However, studies on the direction, extent, and magnitude of feminization, or nature and trend of agriculture feminization, are scarce (Kawarazuka et al. 2022).

Conclusion

Men's and women's participation in mixed farming systems in modern rural agrarian society in Nepal's mid-hills has been identified as a critical factor in comparing different labor types. Unlike the few clearly defined tasks in cereal crop production assigned to men and women, some agricultural work is culturally gender neutral. This paper demonstrates how different levels of market orientation in a mixed farming system affect household labor, exchange labor, and wage labor relations. In every agricultural production domain, men's labor contribution is valued differently to that of women, indicating a gendered pattern of labor value. Besides focusing on change, the study examines what has remained unchanged, thereby emphasizing both continuity and discontinuity and critically examining gender relations that are strictly binding on one hand and somewhat flexible on the other. Gender-based disparities in the use of labor can be understood as having the ability to strengthen and perpetuate gender roles that are already in place, with men integrating into the new jobs that citrus has created and women being encouraged to engage in traditional agricultural work. Nevertheless, the introduction of new crops also increases the choices, opportunities, and spaces available to women in the labor market.

To understand, investigate, or analyze differences in the feminization of agriculture and establish a gender-neutral agrarian society, it is important to consider the debate this study highlights. While this paper does not take a homogeneous view of women, it does not incorporate the concept of intersectionality to the same extent as Kawarazuka et al. (2022). Beyond the rationale of male outmigration and male non-agricultural employment, this paper proposes a more cautious approach to capture the many instances of feminization that may further result in

defeminization of one category over feminization of another, a point that has been articulated by McMurry (1992), Mehra and Gammage (1999), Zhang et al. (2006), and De-Brauw et al. (2008). The term 'feminization' draws attention to the ongoing debate by highlighting the social arrangement in agriculture that has led to a gendered hierarchy, where men are primarily involved in high-value crops and better work, while women are primarily involved in subsistence farming and menial tasks. However, a slight increase or decrease in number alone might not indicate feminization, and the use of the term may be questioned under such circumstances. The feminization categories presented here, while not exhaustive, offer a concise overview to help understand the changing rural livelihoods of women and guide future research on the feminization of agriculture. The categorization proposed in the study can help elucidate agrarian transformation and how it affects gender re-negotiation and restructuring to lessen gender disparity. In conclusion, the paper raises the question of whether gender dynamics in a rapidly evolving rural agrarian space with an export orientation in Nepal can be understood through the lens of the feminization of agriculture.

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