

Feminization of Agriculture and its Implications for Food Security in Rural Nepal

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Abstract: The rural Nepal is going through unprecedented demographic, socioeconomic and environmental changes. There is a growing pattern of outmigration of male population from villages to urban areas and overseas in search of better opportunities. This is mainly due to the poor economic development processes that could not generate adequate income and employment opportunities at home, political and economic changes, and globalization, concomitant with attractive employment opportunities offered outside the country. Simultaneously, rural communities are facing the disincentives of worsening security in villages, employment opportunities, and subsistence farming becoming less and less rewarding and unable in meeting their basic needs. This has led to a situation where women, in addition to looking after children and the elderly, have to take additional responsibilities in farming within the traditionally male-dominant farming practices. This is not only inappropriate and unfriendly to women, but also has lowered the use and productivity of land; hence perpetuating, if not exacerbating, food insecurity. Women are increasingly adopting less intensive farming practices as well as abandoning agricultural lands. As a result, there is reduction in food production. Therefore, there is need for revisiting the agro-ecological practices to explore the possibility of reintroducing low input and less labour-intensive agro-forestry practices which can substantively reduce the workload of women, as well as ensure food security at local level.

Keywords: Agriculture, forestry, feminization, outmigration, food security

INTRODUCTION

Feminization is the phenomenon where the roles of men and women are unbalanced whether at household or community level. This is happening due to globalization and advances in communication and transportation, which is leading to people migrating temporarily and permanently outside of their home country in search of a better life (Bhadra 2007). Important fallout of labour migration is that agricultural labour is being increasingly feminized (Cornhiel 2006; Kelker 2009; Gartaula *et al.* 2010; Kollmair 2011). It is happening with growing awareness of, and an interest in, formal education in all families, where children are going to school and young people in particular, lured by foreign employment, are no longer seen in agricultural fields. Burden of both farming and looking after the household, have now become a part of women's responsibility.

Women, along with their men, have a significant role to play in agricultural activities in Nepal. In the absence of male, female members of the households are bearing more responsibilities in agricultural activities than they used to do before. It is happening within the male-dominant agriculture system, which is not only adding to women's workload but is also inappropriate and unfriendly for them. In this situation, women are increasingly adopting the strategy of continuing farming as best as they can and also increasingly adopting less intensive farming practices, as well as abandoning their agricultural lands. As a result, there is reduction in food production, causing food insecurity primarily at local level.

Many scholars have explored various dimensions of feminization of agriculture and have described it as a serious cause of social exclusion and injustice. Kelker (2009) argues that women face a distinct

disadvantage since they are the ones who sacrifice education and skill development opportunities to manage land and agriculture. As a result of massive male migration, women have broadened and deepened their involvement in agricultural work as they are increasingly shouldering the responsibilities for household survival (Gartaula *et al.* 2010). While women have increased their period of work in agriculture, they have to complete their other household and off-farm work as well (Cornhiel 2006). They have the compounded burden of productive and reproductive work. An important lesson is that increasing feminization of agriculture has a deep and wide-ranging impact on agricultural productivity (Cornhiel 2006; Kelker 2009). Furthermore, the decade-long insurgency, the involvement of the rural youth in the Maoist movement and/or escaping from villages and attraction to urban areas have played a significant role in feminizing agricultural work (Karki and Seddon 2003).

Numerous studies have shown that feminization of agriculture is already happening (Cornhiel 2006; Kelker 2009; Gartaula *et al.* 2010; Maharjan 2010; Tamang 2011; Paudel *et al.* 2012), although its causes and consequences have not been well explored. This paper aims to investigate the causes and consequences of feminization of agricultural work, particularly focusing on its socioeconomic dimensions at community level. This has implications for household food security, particularly in the mid hills of Nepal.

This study employs both qualitative and quantitative approaches to data collection in two mid-hill districts of Nepal, Kavrepalanchowk (Kavre) and Lamjung, using both household survey and key informant interview. This paper seeks to answer the following questions in relation to feminization of agriculture and its impact on food security:

1. What are the key changes in agriculture-based livelihoods in rural Nepal and what are

the economic and political drivers of these changes?

2. How and to what extent does male outmigration affect the role of women in households and local community, focusing on the effects on agricultural practices and food security?
3. What are the key insights from the feminization of agriculture for improving agricultural practices in Nepal?

This paper is structured in different section. The first section reviews relevant literature on feminization of agriculture and food security in Nepal. The second section describes the research methods employed to carry out research. This is followed by a presentation of empirical and policy findings which highlight the causes and consequences of feminization of agriculture. In the fourth section, analysis of results and its implications for food security has been presented. Finally, the paper concludes by presenting some ways for improving food security through policy intervention.

RESEARCH METHOD

This study mainly employs the actor-oriented approach to qualitative research (Lindlof and Taylor 2010), complemented with the quantitative information derived from the household survey. The actor-oriented approach deals with bringing insights focusing on specific problems. In this paper the research strategy was employed to review current context of outmigration, feminization and food security and then generate a case study on each district to understand changes in agriculture based livelihood and bring insights on feminization of agriculture.

Literature review of changing agro-based livelihood and engendered agriculture work was followed by case studies on changing population dynamics, feminization of agriculture and impact on food security at field sites, using participatory exercises such as focus group discussion (FGD)

and key informant interview (KII). The questions were focused broadly on issues of agriculture roles, drivers of social, economic and political changes at local level, and the effects of migration on women's role, focusing on gendered role in agriculture. The fieldwork, including household survey, was conducted during April-August, 2012 by the authors. The extensive review of literature and two case studies was done based on the

district profiles, eight case stories, FGDs and KIIs conducted in two mid hill districts, Kavre and Lamjung, during 2011-2012. These case study sites are fairly representative of the mid hill districts as these have relatively high migration and high percentage of abandonment of agricultural land, which were having high potential for agricultural production.

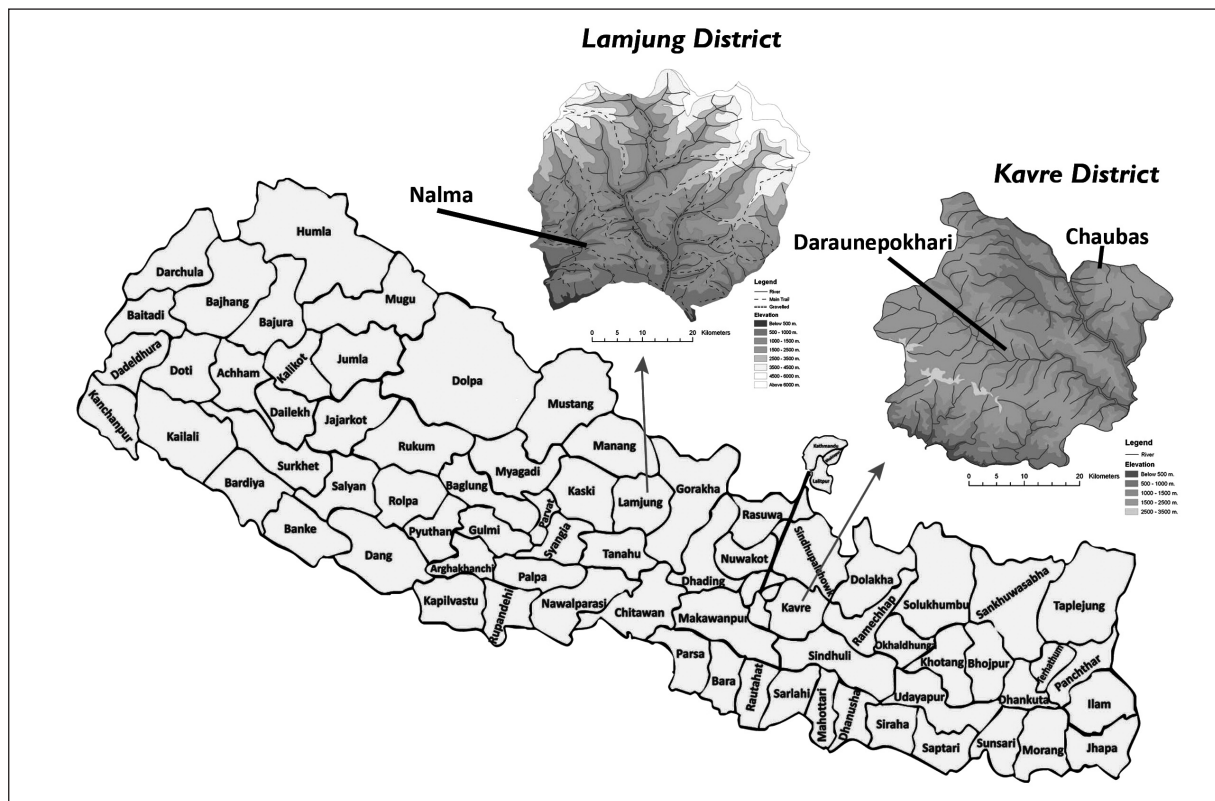


Fig 1: Map showing research districts and sites. (Paudel *et al.* 2012)

This paper is drawn from twelve FGDs with women, men, elderly and the youth to draw insights on youth mobility, farmer's attraction to agriculture, feminization of agriculture and its impact on women's lives and food security. Eight case stories and survey of 150 households were carried out to bring insights on socioeconomic changes, migration, gendered roles, cropping

intensity and agricultural productivity. The participants of FGDs were mostly women with migrant husbands and families leaving the land abandoned. A household survey questionnaire was prepared based on a research question checklist and sample households were selected from the identified *toles* (localities) using cluster sampling in consultation with local representatives.

Households were selected based on the criteria of gender, wealth and caste categories.

The study sites are Daraunepokhari and Chaubas in Kavre District and Nalma village in Lamjung District. Daraunepokhari has a population of 3,286 and 620 households. The majority of the caste/ethnic groups in Daraunepokhari are Chhetri, Brahmin and Newar. Similarly, in Chaubas total population is 2,447 and the number of households is 491. Chhetri, Brahmin and Tamang are the major caste/ethnic groups in Chaubas. In Nalma, the total population is 2,746 with 434 households. Gurungs are the major caste/ethnic group, followed by Tamang and Dalit. The major crops grown in all three sites are rice, millet, maize and wheat.

CHANGING AGRICULTURE-BASED LIVELIHOODS IN NEPAL

Nepal's agriculture is characterized largely by subsistence with semi-feudal production relations linked with the present pattern of landholding, production technology and agricultural system (Neupane 2004; Adhikari 2009). Nepal has unequal land distribution with an average landholding size of 0.7 hectare (CBS 2013). Subsistence agriculture exists along with a very diverse agro-ecology and poorly developed agricultural technology, whereas more than 65 per cent of the population is dependent on agriculture for their livelihood and almost 80 per cent of the households are involved in agriculture, which generates one-third of the total Gross Domestic Product (GDP) (CBS 2013). However, the food security situation in the country is alarming. Out of the 75 districts in the country, 42 are food insecure. Mostly, poor and marginalized communities in inaccessible areas are facing hunger and malnutrition (FAO 2010a; Paudel *et al.* 2010).

With the impact of economic globalization and free market of agricultural product, farming is no more an economically viable option to the

majority of smallholders in Nepal. As a result, men are moving away from agricultural fields, leaving female family members to manage their farms. This trend is ever increasing (Gartaula *et al.* 2010; Paudel *et al.* 2010). This is indeed forced by changing economic and political processes at different levels and layers.

There is an increasing trend of people migrating temporarily and permanently outside of their home country in search of better life (Bhadra 2007). This is distinctly visible in case of Nepal. A report suggests that more than 50 per cent of the Nepalese households have at least a member outside of household living in other district or abroad for various purpose (CBS 2011). A decade ago, one member of a family moved away from home and often abroad for employment and education (Seddon *et al.* 1998), and now 56 per cent of the households receive remittances from foreign employment (ADS 2012). There is huge inflow of remittance in Nepal, and remittance has become one of the major sources of national income. Currently remittances share about 25 per cent of the GDP (World Bank 2013).

Various scholars have identified the underlying causes of feminization of agriculture; outmigration of male labour being one of them (Cornhiel 2006; Kelker 2009; Gartaula *et al.* 2010; Maharjan 2010; Tamang 2011; Paudel *et al.* 2012). It is indicated by the growing number of female-headed households (Kelker 2009). As more and more men migrate, women's responsibilities in the household, agriculture, marketing and social networking have increased (Gartaula *et al.* 2010). As a result, agriculture is confined in peri-urban and urban areas, focusing on a few commercial products such as vegetable and animal products, leaving to abandoning of agricultural land across the regions, thereby declining agricultural production (CBS 2013).

Women were the pioneer of the modern agriculture which began with domesticating

plants in their territories (Lal 2009). Since then, women have been playing significant role in agriculture. Their role further increased with industrialization and development of the service sector, where men leave the farm to seek industrial urban jobs (Gartaula *et al.* 2010). Mechanization of agricultural tools and technologies alleviated the burden of tasks that are traditionally handled by men, leaving women's burden unrelieved (Shiva 1991).

The number of female-headed households is constantly increasing. Households reporting ownership of land or house, or both, in the name of their female members comprised 19.71 per cent, whereas it was 11.7 per cent in 2001. Similarly, in 2012 female-headed households in the country comprise 25.73 per cent, which was only 14.9 per cent in 2001 (CBS 2011). Similarly, a shifting pattern of labour force in agriculture is noticed. According to the Ministry of Agriculture Development (MoAD), 72.8 per cent of women and 60.2 per cent of men were engaged in agricultural activities in 2010 (MoAD 2010).

However, the existing agricultural policies fail to recognize the changing socioeconomic paradigm where women are taking the entire burden. For example, the Agriculture Perspective Plan (APP) (1996-2015) is the first long-term agricultural development policy that attempts to modernize agricultural development in Nepal. The Plan period passed without substantive improvements in the agricultural sector in the country. This policy failure is one of the reasons for the increasing trend of outmigration. Though APP is the first comprehensive agricultural growth plan with a high input commercial agriculture framework in the country, it could not address issues related to improving food security, improving access to resources for those with poor living standards, providing food and nutrition security to children, and addressing issues of women and excluded

communities (Cameroon 1998). Similarly, the ongoing Agriculture Development Strategy is drafted within same framework and may face the same fate as the earlier plan (Paudel *et al.* 2013).

Though the empirical evidence for the extent of 'feminization of agriculture' has not been properly analysed and articulated, there are several indications that it is happening across the globe and impacting women's life (Deere 2009; Song and Vernooy 2011; Lu 2010; Chang *et al.* 2011). In general, feminization of agriculture has two aspects: women's participation in agricultural work and decision making (Gartaula *et al.* 2010). Many organizations claim increasing participation of women in agriculture (World Bank 2006; ADB 2010). But it is not clear whether it is geared towards economic empowerment of women or it is only about increased number of women involved in agricultural activities

All these suggest that Nepal is going through rapid changes in agricultural practices, particularly increasing trend of feminization of agriculture factored by socioeconomic and ecological changes (Tamang 2011; Paudel *et al.* 2012, Adhikari and Hobley 2011). Among these, one of the influential drivers is the remittance economy associated with outmigration of economically active male labour force from rural areas to urban centres and overseas to seek employment. This has led to injustice in sharing of agricultural activities in which rural women are now forced to take up disproportionate responsibilities of agricultural work. Another aspect is that some of the female members of families of migrants have moved to cities either for education of their children or to buy property in cities (Gartaula *et al.* 2010). This has direct impact on agricultural workforce and its performance have serious consequences for agricultural production; hence, increased food insecurity at both national and local level.

All these suggest that feminization is happening at local level with significant changes in the

role of women in agriculture and other social responsibilities. However, in the context of the transitional political process as well as fragile socioeconomic situation, policies and institutions that should recognize these changes are not responsive. It suggests that there is still gap in understanding the causes and consequences.

RESULTS AND DISCUSSIONS

Male migration and changing role of women in agriculture

In the field study sites, outmigration of the youth, particularly male, was significantly high. In Kavre, 42 per cent of the youth population (16-45 years of age) has migrated either to urban centres or abroad. Similarly, in Lamjung, 56 per cent had migrated. This variation in youth mobility is culturally linked as majority of the Gurung communities in Lamjung have been employed in the British and Indian Armies for a long time. In total 67 per cent households are affected by outmigration in both districts. It shows that majority of the households in the village get direct remittance. The FGD revealed those households receive Nepalese Rupees (NRs) 20,000-75,000 per month in average in Nalma alone. Similarly 20 per cent households have more than a member out migrated. According to villagers out of the remittance they receive, more than 80 per cent goes on investing for food, health and education.

The FGDs and KIIs showed that there is a decreasing trend of local food production and productivity. However, this is not supported by official figures presented in annual reports of the Agriculture Development Offices. But there is a significant level of land abandonment. In the studied villages, 25-30 per cent of agricultural lands have been abandoned in the last 20 years or so. In other words, they were under cultivation before. The current status of land abandonment is 17.9 per cent in Kavre and 28 per cent in Lamjung (Paudel *et al.* 2012).

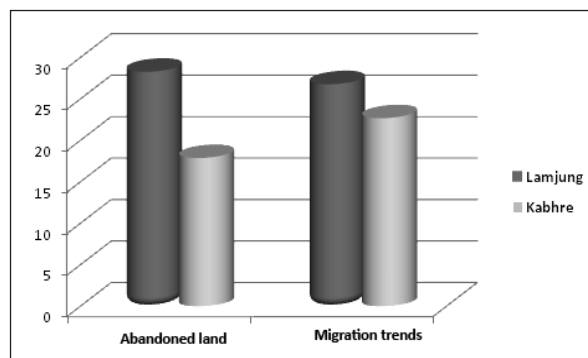


Figure 3: Percentage of migration and land abandonment in Kavre and Lamjung

Source: Field Survey 2012

As shown in the above figure, Lamjung has more migration and land abandonment than Kavre. Moreover, trends in migration and land abandonment show similar relations in both the districts. At the same time, outmigration of the youth from villages is causing labour shortage and thereby reduced cropping intensity as the remaining women and elderly people are not able to provide enough care. Decrease in local food production has direct impact on food security and nutrition. In Nepal, traditionally female members are involved in reproductive work such as looking after children and elderly and working as agricultural labour to secure their livelihoods.

In an FGD, when migrants who had returned from Gulf countries were asked how they found their absence at home, they shared that:

it is a difficult situation; there are no jobs in Nepal and we have no choice but to go abroad, both families at home and ourselves are suffering. We do not know how we will cope in the future (*feri nafarke ke garne khai*); there is no work that we can do.'

It showed that, in fact, the male population did not wish to stay outside home and do injustice to their female counterparts, but because they have limited opportunities and capability to generate livelihoods back home in and outside agriculture.

To a question on what were the benefits from this, they said:

Some of our friends returned permanently and started their own enterprises with the skills they had learnt while working abroad. They have started piggery, vegetable farming, poultry, etc. Having overseas employment made it possible for us to have cash in hand, cash for household and children's education.

The social structure and prevailing traditional cultural practices has limited agriculture-dependent women to access mobility and other opportunities, as a result they are compelled to remain confined within the household and limit to agriculture activities. In many cases, although it is forced, outmigration has some positive benefits such as skill enhancement of migrants, remittance to the families back home, capital formation (asset building) and livelihood diversification. However, negative impacts outweigh where social changes are visible such as family stress, family breakdown, children growing up without their father. Among others with the emergence of remittance economy, there are two parallel processes going on: first, family members receiving good remittances are less and less active in agriculture because they spend remittance to purchase food from the market and invest in other household activities, including child education (Adhikari and Hobley 2011).

With this income security now, some of them have moved away from agriculture and are taking advantage of remittance to diversify their livelihoods. Second, those whose male family members are away but do not receive enough remittances are taking the burden of both reproductive and agricultural work. This remaining female population is unable to fully utilize their agricultural lands; therefore, reducing cropping calendar and keeping agricultural land underutilized (Maharjan 2010; Paudel *et al.* 2012).

Consequently, there is decreased food production at local level and massive import of food (Adhikari

and Hobley 2011; Paudel *et al.* 2013). In the study sites, import of food items had increased. The food items mostly come from India and China. These trends are directly affecting the poor and marginalized families who lack income and employment for food security in rural villages.

From the FGDs, it was revealed that food insecurity among the poor can be attributed to limited access to productive land, lack of rural non-farm employment, low wages for paid employment and little access to the remittance economy. A participant of an FGD said:

We have no agricultural land; it is hard to get loans for foreign employment; even if some people manage to go and send remittance, we spend all money on food and paying back loans.

Feminization of agriculture in field sites

The FGDs showed that the remittance economy, associated with outmigration of economically active labour, mainly male, to seek urban and overseas employment, has become the most powerful force to bring more women to agriculture. This phenomenon is prominent in Lamjung where male migration for foreign employment has a long history.

The FGDs showed that remittance was now the most powerful driver in the changing rural landscape, followed by infrastructure and technology development, improved access to market and services, which had encouraged monetization, consumerism and urbanization, as also observed by Seddon *et al.* (1998). Among others, the remittance economy had a direct impact on local food production and consumption. Since there was increased flow of cash in the village, the expenses on food items had also increased. In comparison to the situation a decade ago, many folds of imported foods were available and consumed in the villages. One women respondent shared that, though they

had some opportunities of making decisions on minor matters, they could not place their decisions on bigger issues in the household, eg property management (land), children's wedding arrangements, investment among others.

These changes had impact on social as well as production relations at household level, particularly it has demanded greater roles of women in agriculture, such as carrying out multiple tasks of production, harvesting and post-harvest processing. They worked as producers, family workers or as agricultural wage labourers. Although women are the major supplier of temporary, seasonal and casual workers, during the FGDs and interviews, they shared that their tasks were often labour-intensive and time-consuming; however, there wages were lower than those of male labour for different activities. Although male and female invested equal time and effort, there were huge differences in the wages of male and female members. For example, in Kavre, for ploughing, male labourers received NRs 500-600, whereas female labour got NRs 200-250 for planting rice, preparing fields, etc. In Lamjung, male labour got NRs 450 for ploughing and digging, whereas female labourer got NRs 250. It is not clear whether there is difference in wages for the same job between the male and female labour. A woman in Daraunpokhari shared that, in the absence of male family members, once she called her neighbour for labour exchange, but he refused as he expected a male labour in return rather than a female. However, there is no wage difference for similar work.

Since there is lack of labour force in rural areas, a combination of factors, particularly women's engagement in multiple tasks, has led to managing farms without much attention and/or adoption of less-intensive farming with fewer crops in the cropping cycle. In many cases, women were not able to cultivate their own land, not being able to

plough, as well as arranging other vital inputs as they are alone to arrange all inputs including labor, seed, and fertilizer. Moreover they do not have control over economic resources and experiences dealing with these services which were previously managed by their male counterparts. With this effect, there were visible changes in shifting land use, for example, increasingly, female farmers were moving towards less labour-intensive agricultural practices in their farmlands. In Lamjung, there is increasing trend of leaving distant agricultural land fallow, whereas, in Kavre, many households had started planting grass and fodder trees in their fields. They had also reduced the cropping cycle from three to two or even one. Some of them had abandoned marginal distant pieces of land and started planting fodder trees, grasses, fruits and other non-timber forest products (NTFPs). There was also change in the cropping pattern because of labour shortage and increased labour costs particularly the cultivation of indigenous crops such as Millet, Buckwheat and Barley is decreasing. In accessible lands farmers are cultivating common crops but reducing cropping cycles.

Data shows that, of the sample households, 74 per cent had reduced their cropping cycle, whereas earlier they used to grow two or three seasonal crops. A direct effect has been decreased production and productivity of agricultural land.

Table 1: Reduced cropping cycle

Cropping cycle	Sample HHs	No. of HHs reducing cropping pattern comparing 5 years ago
Kavre	100	72
Lamjung	50	39
Total	150	111

Source: Field Survey 2012

Farmers have to spend an increasingly large share of their farm income to purchase inputs, leading to negative impacts on agricultural production and food security. In an FGD, a female participant said:

There are no male members in our village to plough, and one who we can hire along with his bullocks is busy serving other farmers; therefore, I am digging the field instead of ploughing.

Obviously, men have played a vital role in modernizing agriculture. Therefore, most of the developed technologies in the past are men-friendly. Agricultural tools and technologies are different based on who operates them to suit their convenience, eg heavy tools for men but not for women and children (Lal 2009).

Although, in the hills and mountains of Nepal, the modern agricultural technology and mechanization hardly exist and there is little use of these technologies, traditional agricultural tools and technologies were also developed from masculine perspective, where male takes the responsibility of hard tasks in the field and women that of relatively soft tasks. A woman from Nalma said:

Now we have to take the roles of both male and female in agriculture; we are managing all agricultural activities, but it is really hard to work at night (for irrigation). Similarly it is hard to plough, our traditional plough is heavier for us to use.

Another woman from Daraunepokhari shared that while in exchange of labour within neighbors, they expect male in exchange of male labour instead of female. This gives a fair idea of how women have to assume more responsibilities in managing agriculture and their changing perception of it.

Land use changes and resource degradation are severely affecting the resource conditions on which poor and marginal people are directly dependent for their basic livelihoods (FAO 2010b; IFAD

2012). However, given the perception on tenure rights as if one is allowed for cultivating land for long time may get the tenant rights, landowners hesitate to provide land for tillers. Also the high input-based farming practices isolated from forest farm interface, the fast degrading environmental resources, decreasing water and biodiversity resources are common and serious biophysical issues raised during discussions. In addition, villagers have realized the effects of climate change in their farm and believe strong factor for low production. These changes in engendered relations are occurring at a time when climate change is also placing agricultural sustainability at risk and in vulnerable conditions.

It is also observed that the recent trends of climate change, particularly unpredicted rainfall patterns, failure of some usual crops, and emergence of new pests and diseases are forcing farmers to revisit the whole farming systems towards devising an economically viable and ecologically sustainable farming system. It suggests that our agro-ecological practices need to be changed immediately to address this vital problem. The climate smart and resilient agro-ecological approaches are must to make agriculture farmer-friendly (FAO 2010b; IFAD 2012). It is particularly visible in the mid hills of Nepal, which is characterized by environmental fragility and low productive subsistence agriculture with limited opportunities for non-farm economic activities (Paudel *et al.* 2010).

Analysis of out-migration and Feminization of agriculture

There is an increased male migration in search of alternative income sources for food security and livelihood. Male members' migration has led female members to take added responsibilities for agricultural roles. The findings suggest that feminization is not necessarily caused by the changing ambitions of households alone, but is mainly conditioned by changing political and economic processes at different layers and levels.

Along with the structural problem of differentiated access and control over resources, degradation of productive resources, low returns on labour and other investments and increasing demand for cash to pay for health, education and other social services has triggered changes in population dynamics, including mobility, both internal and external, and brought changes in rural livelihoods. This is the overall phenomenon across the country (Paudel and Adhikari 2010).

Evidence shows that male outmigration has multidimensional impacts on women's role in agriculture. Outmigration of male population has forced women to take over the burden of agricultural work due to shortage of labour (Cornhiel 2006; Kelker 2009; Gartaula *et al.* 2010; Maharjan 2010; Tamang 2011; Paudel *et al.* 2012). This is causing increased land abandonment.

Increasing takeover of role by women at both household and community level in the absence of male should have created better opportunities for them. It should have created opportunities for them to be empowered, develop their capacity and, more importantly, become entrepreneur farmers rather than family farm labour. However, social and cultural factors, along with a non-supportive policy and institutional environment, have not responded to the need to empower agriculture-dependent women to increase their ownership and control over productive resources.

Discussions with migrants revealed that the male population did not wish to stay at home and do injustice to their female counterparts, but they had limited opportunities at home and limited capability to generate livelihoods staying at home and in agriculture.

Though it is forced in many cases, outmigration has some positive benefits in the form of skill enhancement of migrants, remittance to the families back home, capital formation (asset creation) and livelihood diversification. But there are also many negative social impacts such

as family stress, family breakdown, children growing up without their father among others.

Another important issue linked with feminization is food insecurity. With increasing feminization of agricultural work there is less food production at local level. Reduction in food production at local level is a great concern because availability of food is an important dimension of food security for the poor and marginalized communities as they have limited access to alternative income for the same. However, one of the many causes of food insecurity at local level is not just declining food production, but also people's inability or unwillingness to engage in agricultural activities.

The traditional system of agro-forestry-integrated agriculture system of livestock, agronomy/horticulture and fodder/trees of agriculture was developed in the hills and mountains, not only for integration of ecological systems but also for managing family labour to increase agricultural productivity. However, such a system is disappearing as the family labour-based agro-forestry approach is not possible within the context of population dynamics, particularly massive outmigration. It is crucial to devise an appropriate agro-forestry model based on the emerging issues of feminization and food security.

All these call for paying immediate attention to reframing policy institutions and agricultural systems that consider addressing the feminization of agricultural work. If not addressed in time, the increased role of women in agriculture without rights and an adequate support system in place will decrease agricultural production to ensure food security at local level; rather, it will create more gender inequality with workload and burden that women are forced to carry. Therefore, this needs to be addressed immediately, which requires not only concrete policy actions from government, but also collective actions by government, non-government and international agencies.

However, these changing population dynamics in rural areas provide opportunities for innovations on the agro-ecological approach to agriculture. The opportunity is that the less labour-intensive agro-forestry approach can be successfully reintroduced where there is shortage of labour and other vital inputs. This will not only reduce women's workload, but will also address the prevailing injustice in the agriculture sector. The field study suggests that the approach is also equally vital to addressing the agriculture productivity issues and increase local food production for food security of the poor and marginalized, restoring abandoned agricultural lands in full productive cycle. This will lead to increased entrepreneurship of women farmers with their increased control and ownership in agriculture. Moreover, it will result in more efficient use of local resources.

CONCLUSION

There is concrete evidence that feminization of agriculture has impacts on both social and economic spheres. In the social sphere, it is creating conditions for social injustice to women through added burden of agricultural work within male-dominant policies, institutions and technologies, which further exacerbate the subordination of women in society. Economically, underutilization of the agriculture sector is leading to a situation of food insecurity and chronic malnutrition of agriculture-dependent poor and marginalized communities. This is also creating more dependency for economic opportunities other than agriculture where women have little access to, for example, foreign employment.

Owing to various factors, Nepalese agriculture is being feminized, and a strategy with a clear vision is needed to bring it into function, addressing the recurrent problems, particularly gender inequality in agriculture workload. A transformative agro-ecological approach to agricultural development

could be a turning point where policies, institutions and agricultural framework need to be considering the emerging population dynamics, including migration, food security, climate change and ongoing struggle of political transformation in account.

Women's empowerment is the fundamental basis for addressing feminization of agriculture to reduce the prevailing gap of gender inequality in agriculture workload. For this, it is important to understand the ongoing struggle, particularly women's issues, which is affecting differently across many specific local contexts. Particularly, there is a need to draw into the policy debate the question of the impact of outmigration on women's increased roles in agriculture and its consequences. This needs revisiting and replacing policies, institutions and agriculture systems with the ones that appropriately address women farmers' issues at most. The progressive forces need to organize themselves as a 'collective unit' to enhance capacity of women to enhance entrepreneurial activities at village level with genuine collaboration between the market, local government and civil society groups.

In conclusion, the existing understanding is inadequate and misleading, unfairly penalizing women groups; therefore, deeper analysis of socio-cultural and structural issues of gender role in agriculture is needed to better inform the policy processes. Similarly, the policy and institutions must attend the issue of food security through improved local production system where the role of gender-sensitive and less labour-intensive technology must be highlighted within the changing political economy.

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