“When He Comes Home, Then He Can Decide”: Male Out-Migration, the Feminization of Agriculture, and Integrated Pest Management in the Nepali Mid-Hills

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ABSTRACT (Academic)

As part of a USAID-funded integrated pest management (IPM) project, this thesis presents research conducted across four communities in midwestern Nepal. We conducted semi-structured interviews, focus group discussions, and participant observation with local farmers and NGOs. Grounded in feminist political ecology (FPE) and drawing on the social relations approach (SRA), we sought to engage with the feminization of agriculture narrative and understand how it interacts with IPM practices and decision-making. This research responds to a growing interest within development in the feminization of agriculture as a potentially empowering or disempowering global process of change, conceptualized through the ways that male out-migration affects the labor and decision-making roles of women and other household members left behind on the farm. We find that contextual factors change the implications of the feminization of agriculture narrative. Co-residence with in-laws and varied migration patterns influence the dynamic nature of household structure and headship. Migration patterns have pushed women to take on new agricultural duties and manage increasing household labor responsibilities. Additionally, IPM vegetable cultivation is changing how farmers use and value their land through increasing crop diversification. Agricultural decision-making processes related to these different forces extend beyond the household, and participation in community spaces through the IPM project may contest traditional gender norms. We contend that the heterogeneity of household power dynamics muddies the potentially empowering or disempowering effects of the feminization of agriculture, and we emphasize the importance of community spaces as a locus of decision-making in the sustainability of new agricultural technologies.
This research aims to understand how gender affects and is affected by new agricultural practices in rural Nepal. Several changes are occurring across Nepal; these changes include men migrating for work at increasing rates, as well as farmers growing different crops in new ways. This study is specifically concerned with integrated pest management (IPM) practices, whereby farmers manage pests on their farm while minimizing the use of chemical pesticides. These IPM practices are developed through partnerships between university scientists and in-country organizations under the USAID-funded Feed the Future IPM Innovation Lab. As men look for work outside of their home communities and agricultural production diversifies, gender norms and expectations of migrant-sending communities influence how both men and women farmers participate in learning and practicing IPM across different seasons. Through interviews, focus group discussions, and participant observation, we contend that women in migrant-sending communities are taking on new labor roles on the farm, depending on if they reside with their mother-in-law and father-in-law. Furthermore, decisions about agricultural production and IPM are made within farmer cooperative meetings and social spaces between men and women members, contesting traditional gender norms that previously limited interactions between men and women in public gatherings. These findings help support the sustainability of projects within the IPM Innovation Lab, as well as highlight the importance of community, social spaces as places of decision-making and changing gender norms beyond the household. We emphasize the need to carefully assess social and cultural implications of development interventions within the geographic context and incorporate this specificity into project and research design.
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Chapter 1: Introduction and Conceptual Approach

1.1 Introduction

Nepal is in the midst of political, economic, infrastructural, demographic, and cultural changes; male out-migration is among these changing trends. Men are seeking foreign employment in gulf countries, such as Qatar, United Arab Emirates, Saudi Arabia, as well as other countries, such as India and Malaysia, as an alternative source of income to their rural livelihoods, despite the often precarious conditions migrants may face (Khatiwada et al., 2017). Most of these migrants are young men of working age (between 15 to 29 years old). According to the 2011 Census, 29.8% of males in Nepal are documented in the absentee population (defined as those who have left their household to live elsewhere), whereby merely 10.9% of females in Nepal are documented as absentees. Moreover, 67.9% of male absentees compared to 17.2% of female absentees have left to look for work within or outside Nepal (CBS, 2011). Labor permits issued to migrant workers by the Government of Nepal have nearly doubled from 2008/09 (219,965 permits) to 2013/14 (519,638 permits) (Khatiwada et al., 2017). This increasing migration phenomenon influences and overlaps with changing gender norms, labor expectations, decision-making processes, and community spaces of the rural sending communities. A growing body of literature seeks to examine these multidimensional implications of migratory patterns on gendered agricultural practices, referred to as the feminization of agriculture (e.g. Chapagain, 2015; Gartaula, Niehof, & Visser, 2010; Lahiri-Dutt & Adhikari, 2015).

Furthermore, agricultural production is diversifying across Nepal; high-value vegetable crop production is increasingly replacing cereal crop production amongst smallholder and commercial farmers. Such transitions are largely attributable to international agricultural development initiatives (USAID, 2013, 2014, 2016). This research project is part of the larger
Asia Vegetable and Mango program of the USAID-funded Feed the Future Integrated Pest Management Innovation Lab (IPM IL). It builds on a 12-year collaboration between Virginia Tech and International Development Enterprises (iDE) Nepal to support production of high-value vegetable crops in Nepal. Integrated pest management (hereafter referred to as IPM) is defined as an agricultural system that utilizes the economic and ecological context of a geographical area to manage pests while minimizing the use of harmful pesticides (Norton, Heinrichs, Luther, & Irwin, 2005). IPM technologies include pest-resistant crop varieties, beneficial predators of harmful pests, and other crop-specific pest traps and lures. Ultimately, the AVIPMIL aims to reduce production and post-harvest losses of crops to increase food security and farm income, improve the health and nutrition of households, promote stakeholder empowerment, and help improve livelihoods of smallholder farmers (USAID, 2016). To achieve these holistic goals, research and development of IPM practices requires the investment of willing farmers’ time and available materials to be actively involved in adapting IPM packages to local livelihoods. Therefore, “technical, institutional, social, cultural, economic, educational, informational, and policy constraints” (Norton et al., 2005, p. 4) as they intersect with gendered dimensions of farmer livelihoods are integral to IPM program design.

Several studies have indicated that gendered dynamics and differences within individuals, households, and communities have a significant impact on the success of agricultural development programs, specifically projects designed for IPM dissemination (Atreya, 2007; Hamilton et al., 2005; Pouratashi & Iravani, 2012; Zselecky, Christie, & Haleegoah, 2012). The foundational acknowledgement that environmental concerns actively involve both men and women is a necessity for agricultural interventions and development programs because knowledge and expertise is gendered (Christie, Parks, & Mulvaney, 2016; Fortmann, 1996); both
men and women have scientific knowledge and expertise from the “daily management of their living landscape” (Rocheleau, Thomas-Slayter, & Wangari, 1996, p. 6). Failing to incorporate these gendered differences into agricultural development objectives, such as IPM, can hinder the use of these agricultural practices, as well as potentially deepen preexisting gender inequalities. A better understanding of the forces that constrain and enable power in daily decision-making and labor can deepen our understanding of the feminization of agriculture as it is entangled within processes of such agricultural change.

1.2 Research Questions and Conceptual Approach

This qualitative study is centered around two main research questions focused on gendered processes of male out-migration and their relation to IPM practices. IPM use is one among several other aspects of agricultural production in this study, as well as a measure of changing agricultural diversity for smallholder farmers in the area. We asked the following research questions to more deeply engage with the gendered implications of migration and IPM: 1) In the Nepali mid-hills, how does male out-migration affect gendered household decision-making and agricultural labor, and 2) how does the experimentation with and adoption of IPM practices affect gendered workload and decision-making processes? Our research questions are based upon the following relationship between relevant concepts related to the feminization of agriculture and IPM practices, as shown in Figure 1.
Figure 1: Relationship between feminization of agriculture and IPM concepts in study
Different forms of male out-migration affect the composition of members within the household; this reorganization of household composition directly affects the experience of gender roles and relations amongst men and women, as described through the feminization of agriculture. Household composition was further understood through presence of migration and co-residence with in-laws, whereby four types of household composition help organize the differential implications of labor and managerial feminization. Labor workload changes, referred to as labor feminization, are measured through agricultural and household labor duties; decision-making changes over agricultural practices, referred to as managerial feminization, are measured through agricultural and financial realms. Both labor and decision-making activities directly relate to IPM use by farmers, dictating both the time and energy related to practicing IPM, as well as the decisions that continuously determine involvement with IPM practices and farmer group participation. IPM use associated with managerial feminization is gleaned through direct participation in IPM farmer groups, impacted by the social constructs of mobility associated with such participation. We utilized these conceptual relationships as a guiding framework to connect recent literature on the feminization of agriculture to our field methodology, as well as structure and inform the interpretation of our findings.

Grounded in the theoretical frameworks of feminist political ecology (FPE), the feminization of agriculture, and the Social Relations Approach to empowerment, this paper supports the integration of the knowledge and experience of individuals and complex uses of space within and beyond the household into the processes into agricultural development. We contribute empirical evidence from data collected in four communities of the Surkhet District in the Nepali mid-hills. First, we review the current literature regarding FPE, feminization of agriculture, and empowerment as they intersect with agricultural development. Second, we
describe the Nepali context and our research sites. Further, we review our findings and finally present a discussion and conclusions at both practical and theoretical levels as they relate to recent literature.
Chapter 2: Literature Review

2.1 Feminist Political Ecology: Intersections with Development

This study is anchored in feminist political ecology (FPE) as a theoretical approach. At odds with the objectives of many modern development projects, FPE argues that the local experiences and micro-interactions of gender are essential and overlapping factors when attempting to understand how individuals interact with their environment. If we consider gender as an economic, ecological, and social dynamic embedded in historical processes that goes beyond simply relations between men and women, our understanding of changing livelihoods within communities can deepen (Mollett, 2018; Nelson, 2012). Gendered subjectivities, as one of many identities we experience, illustrate how and why inequalities exist regarding the well-being of individuals, power relations within and across communities, and their access to, distribution of, and relationships with natural resources (Rocheleau et al., 1996). However, many development interventions aiming to improve the quality of life for its beneficiaries through better technologies, agricultural practices, or infrastructure often fail to consider how gendered livelihoods intersect with their objectives (Bhattarai, Beilin, & Ford, 2015; Fortmann, 1996; O’Reilly, 2006; Van Houweling, 2015). Daily practices and livelihoods construct the spaces and relationships people engage with, and these spaces are inextricably linked to ecological processes (A. J. Nightingale, 2011).

FPE encompasses three dimensions of gender and environment relations in the context of political ecology; these dimensions attempt to distinguish different levels of interaction that affect and are affected by gendered social structures. The first dimension, gendered knowledge, addresses how scientific and traditional knowledge is affected by the “axes of difference that may shape peoples’ experience and understanding with environment” (Rocheleau et al., 1996, p.
Second, gendered rights and responsibilities focus on power dynamics of control over and access to natural resources and constructed environments; this includes formal ownership of resources such as land, as well as responsibilities involved in managing resources within households and across communities. Finally, the third dimension—gendered environmental activism and grassroots organizing—addresses women’s participation in collective groups and the various ways that local people organize to manage natural resources and share risk amidst resource scarcity (A. Nightingale, 2006; Rocheleau et al., 1996). These distinct yet interrelated elements of nature-gender relations provide pathways to examine the complexities and differences of men and women’s access to and power over ecological knowledge, capital, decision-making, politics, and collectivism.

We cannot fully understand the sustainability and effectiveness of development interventions without considering the personal stories and experiences of people within their own communities and livelihoods. FPE emphasizes the expertise of the individual, whereby people’s perceptions and lived experiences are the foundation to understanding human-nature relations (Rocheleau et al., 1996). Using local, “situated knowledges” (Haraway, 1988) to inform policies, projects, and interventions questions the formal understanding of expertise in research and program design. For example, goals to increase women’s participation in development activities can operate upon and perpetuate preexisting gender inequities or create a divide between “traditional” and “modern” (O’Reilly, 2006). Furthermore, management of and struggles for natural resources are not merely physical or tangible, but they are also emotional and relational. Emotions are fluid, and the spaces and places of these emotions matter (Sultana, 2011). These spaces and places are dictated by institutional and social structures that influence how people see themselves, relate to each other, and relate to such structures of power (Miles,
2014). This paper aims to contribute to the deepening body of literature that uses FPE as an entryway into the complexities of individual livelihoods and their intersection with socioenvironmental relationships in the context of development, gender, and migratory impacts on agricultural production.

2.2 The Social Relations Approach to Empowerment

Recent literature has attempted to understand how changes in decision-making authority and workload in the context of male labor migration relate to empowerment with contradictory results. Some argue that increasing labor burdens on women and girls reinforce unequal gendered divisions of labor, overburdening women to perform more work in the absence of men without adequate time for education, leisure, and other personal investments (Lastarria-Cornhiel, 2006). Others assert that increased control over income, access to remittances, and decision-making authority over household tasks can lead to a greater sense of autonomy and empowerment (Deere, 2005; Yabiku, Agadjanian, & Sevoyan, 2010). Women’s empowerment within the feminization of agriculture narrative is often measured through participation in household decision-making, access to wage employment, control over finances, or assuming other managerial roles as their husbands migrate. However, the link between such outcomes and increased empowerment has been challenged and complicated. Managerial spheres of financial and agricultural duties at the household and community levels add complexity to dimensions of women’s empowerment as new gendered responsibilities contest and redefine preexisting power dynamics (Gartaula et al., 2010).

Empowerment is a “process of change” (Kabeer, 1999, p. 437) in relations of power and “extensions of agency” (van den Bold, Quisimbing, & Gillespie, 2013). Empowerment is often
measured by the presence or absence of inequalities in meeting demands of basic well-being, i.e. nutritional demands or reliable access to natural resources, or in observable actions such as market participation. However, these metrics fail to incorporate the capacity of choice in everyday lives. Kabeer (1999) emphasizes the need to understand empowerment through three main dimensions: agency (actions, motivations, and meanings exercised by both individuals and groups to make choices and act toward self-defined goals), resources (material, human, and social resources used to make such choices), and achievements (outcomes and inequalities associated with the ability to make choices and achieve desired goals). These dimensions are inevitably complicated to measure, predict, and attempt to understand.

Lacking a final state, empowerment is not an outcome in itself (Carr, 2003). Rather, empowerment indicators can “indicate the direction and meaning of change” (Kabeer, 1999, p. 461) as it relates to a conscious effort of transformation within an individual’s reality. Furthermore, it cannot be measured in a holistic manner without considering the values, perceptions, and biases of the individual measuring it. As Haraway (1988) suggests, the question “with whose blood were my eyes crafted” (p. 585) helps identify the ways that an outsider or researcher’s perspective is created through historically systemic inequalities and cultural differences. Gender inequalities that pervade everyday lives cannot be directly assumed as unjust without placing them in a large societal context (Kabeer, 1999). Thus, in considering individuals’ perceptions, empowerment is difficult to claim as an objective measurement or outcome; its quantifiable potential is limited. Individual indicators often used in agricultural development, such as input in decision-making, attendance at agricultural trainings, or access to markets, are insufficient. Relations of power must be considered within specific geographical contexts and through dynamic factors that affect roles within and beyond households.
The Social Relations Approach (SRA) to empowerment recognizes that gender relations are entrenched within systems and structures that shape social relations (Kabeer, 1994). As an institutional analysis of gender inequalities, it assumes that development ultimately aims to improve people’s livelihoods beyond economic growth. Furthermore, it focuses on the importance of social relations in determining how people view and act upon their roles and responsibilities with others. Four main institutions, the state, the market, the community, and the family, “defined by their rules, resources, people, activities, and power” (Miles, 2014, p. 4) reciprocally interact and produce social relations, as well as inequalities. As these institutions function, they enforce and reinforce gendered policies, actions, and relationships that they are built upon; the short-term and long-term implications of these institutional interactions are integral for sustainable planning and a thorough, yet unavoidably incomplete, understanding of how power operates in a given context (Kabeer, 1994; Kabeer & Subrahmanian, 1996; Miles, 2014).

Empowerment reflects both an individual’s ‘power within,’ or their agency and choice in their own life, as well as their ‘power with’ families, community members, and other actors in their social networks to collectively socialize, organize, and act toward a commonly defined goal. The importance of social relationships and collective action in empowerment has been emphasized in recent research (Cornwall, 2016; Eyben, 2011; Kabeer, 2011; Kabeer & Huq, 2010; Miles, 2014). Even if material resources may incentivize people to come together, continuously building trust and social reciprocity through face-to-face relationships establishes power and ownership over social spaces toward positive change (Cornwall, 2016; Kabeer, 2011). The relational dimensions of development are often undervalued in comparison to measurements of individual agency, yet both are inextricably linked along pathways of empowerment.
2.3 Deconstructing the Feminization of Agriculture Narrative

Women have had significant and varying responsibilities in agricultural production throughout history. However, as Boserup (1970) initially argued, as men migrate to look for wage labor, women may take on the abandoned agricultural roles of men. As other scholars have further examined, farm management roles have also been changing (A. Maharjan, Bauer, & Knerr, 2012; Radel, Schmook, Mcevoy, Mendez, & Petzelka, 2012; Su, Eriksson, Zhang, & Bai, 2016). Referred to as the feminization of agriculture, this trend addresses the increased labor participation and decision-making roles of women in agriculture (Gartaula et al., 2010). The concept of feminization originates from its application to poverty by Pearce (1978) and has been widely accepted, discussed, and applied in the development of agriculture literature (e.g. Bieri, 2014; Chant, 2006; Chilibeck, 2004; Gaddis & Klasen, 2014; Medeiros & Costa, 2008). Changes in labor and decision-making responsibilities of women in agriculture can be linked to and understood within several globalizing forces, including increasing trends in export-oriented agriculture and push and pull factors for labor migration (Lastarria-Cornhiel, 2006).

This feminization phenomenon, however, is a sweeping and oversimplified generalization when considering the gendered complexity of how agricultural households divide labor, make decisions, and enact gender roles (Bieri, 2014). Considering women as “reserve labor pools” (Radel et al., 2012, p. 116) in the context of male out-migration may overlook the contextual variation and complicated ways gendered beings navigate changes in their livelihoods. Recent literature has called to destabilize a priori assumptions of gendered labor roles and social expectations in the feminization of agriculture and become open to possibilities of how individuals negotiate spaces of capital accumulation in a globalizing world (Bieri, 2014;
Ramamurthy, 2010). We have visually conceptualized the feminization of agriculture narrative within the context of this research in Figure 1 in the following section.

2.3.1 Households as Rational, Economic Units?

Male labor out-migration is an overarching process that affects individuals, households, and communities simultaneously and in overlapping ways. Much of the literature that attempts to illustrate the effects of male out-migration show a direct causal relationship between a male migrant and the effects on his household within the sending community. Dynamic processes are often confined within a household-level analysis and the members therein. Yet, the direct effects of male out-migration on intra-household dynamics significantly vary.

Feminist literature has problematized the household as a cohesively rational unit in agricultural communities. Rather than a homogenous economic unit, households are “cooperative and conflictual” and do not always act as a “single unit actor” (Radel, Schmook, & Mendez, 2013, p. 109). Intricacies and individual interests of actors within a household do not always reflect the interests of the household as a whole; intra-household resource allocation, patriarchal norms, and labor duties affect how the household acts and operates (Macdonald, 1995). Gendered interests and responsibilities are continuously contested within marriage relations, as well as other institutions beyond the household (Jackson, 2007). This complicates the assumption of household-level rationality when using households as a unit of analysis.

The composition of the household is dynamic as migrants participate in different short and long-term migration patterns. Household organization and composition changes throughout the year as household members negotiate their livelihood opportunities, further deconstructing the household. These organizational changes and different household compositions influence the
impact migration has on social norms, labor expectations, power relations, and agricultural practices (Gartaula et al., 2010; Yabiku et al., 2010).

Problematizing the household as a bounded entity of decision-making further complicates the processes of the feminization of agriculture. Some caution (e.g. Ramamurthy, 2010) that the feminization of agriculture ignores the contextual variation of household negotiations and assumes a universal economic rationality, through both migration factors and household-level labor processes, exists across all households. Lama, Kharel, and Ghale (2017) call for a focus on community-level gender relations rather than just household relations as the household expands and adapts to migratory patterns. Therefore, the feminization of agriculture operates and interconnects across different scales, including the individual, household, and community.

2.3.2 Household Headship: A Problematic Indicator

The purpose and use of household headship as an indicator for “feminization” lacks conceptual cohesion. Pearce (1978) initially defined the feminization of poverty by identifying women as a proportion among all poor people in the United States, recognizing the trends and differentials of impoverished women as compared to impoverished men. Recent research has begun to measure feminization through an increasing number of female-headed households (FHHs). This leads to two possible conceptualizations of feminization: 1) an increase in the difference of poverty among women and men, or 2) an increase in the difference of poverty among female-headed households and male (and couple)-headed households (Medeiros & Costa, 2008).
The distinction between these two definitions is significant. Female-headed household poverty is not a proxy for poverty among women. Goldberg (2009) explains that female-headed households (FHHs) are utilized as an analytical basis for understanding social, economic, and psychological discrimination within a given society; the ability of a woman to form an “independent, solvent household, independent of men” (Brush, 2002, p. 161) may illustrate a society’s current social acceptance, availability of resources, and gendered roles and relations. However, the validity of this metric as a representative variable for increasing vulnerability of women across geographical locations has been and continues to be contested.

Some argue (Daly & Rake, 2003; Goldberg, 2009) that a focus on single women or FHHs does not illustrate the gender-related concerns and vulnerabilities of women who are married or in other economic arrangements. Although FHHs may experience certain challenges that MHHs may not, this measure neglects the importance and variation in vulnerability of other household members and assumes, based on economic rationality, that FHHs are inherently at a financial disadvantage (Chant, 1997). The indicator of household headship does not show how assets are distributed amongst family members, namely the proportion of the family’s income that the woman contributes, owns, or has access to. Female household headship limits the acknowledgement of the multiplicity of ways in which women, married or not, may be limited or liberated by decision-making authority, labor workload, expectations of mobility, or access to tangible and intangible resources. Married women may just be a “husband or partner away from poverty” (Daly & Rake, 2003, p. 115), and these vulnerabilities or concerns are lost within the metric of household headship.

Owusu-Afriyie and Nketiah-Amponsah (2014) argue that the process of feminization should be measured and understood at the level of the individual rather than the household. The
The household is not merely a place of reinforced patriarchal gender norms (as is often portrayed in neoclassical depictions of the household), but it is a site of negotiation between men and women as agents of negotiation (Jackson, 2007). Male out-migration presents an opportunity for household members to renegotiate their roles and responsibilities. These renegotiations challenge the usefulness of household headship as an indicator of vulnerability and highlight the complex processes of agricultural participation and decision-making.

2.3.3 Labor and Managerial Feminization

As Bieri (2014) argues, two positions frame the divergent yet overlapping spheres of the feminization of agriculture: women’s labor burden may increase, subjecting women to a greater workload and less available time, or women may experience greater decision-making power amidst new managerial roles in the absence of their husbands. Gartaula et al. (2010) describes these two realms of influence within the feminization of agriculture as 1) labor feminization and 2) managerial feminization, respectively. However, these discussions of feminization are often rich with theory but not with evidence (Oya, 2013), leading to an overuse of the term and a lack of an analytical framework to appropriately understand it. Changes in norms, expectations, uses of space, identity, and relations of power underpin the social complexities within this debate and must be further explored (Bieri, 2014).

Through labor feminization, women may increasingly “shoulder the responsibility for household survival and respond to economic opportunities in commercial agriculture” (Lastarria-Cornhiel, 2006, p. 1) as their husbands find work abroad; this may include performing tasks once completed by available men on the farm or in the household, such as ploughing, or becoming more involved with agricultural labor than before migration. Many studies have attempted,
through both quantitative and qualitative methods, to better understand the effects of labor
migration on sending communities; these studies have been mixed in their conclusions. Some
suggest that an increase in men’s off-farm employment opportunities has increased the role of
women to hire and manage on-farm male labor to take on the extra workload. Radel et al. (2012)
illustrate that, in Mexico, these migratory effects have become somewhat normalized and
increase the women’s managerial roles in the household. In China, Su et al. (2016) suggest that
this increase in hired male labor leads to a “de-feminization” of agriculture as women
increasingly seek household income through off-farm employment. Yet, Mu and van de Walle
(2011) argue that the opposite phenomenon in China exists, whereby women left behind on the
farm are doing more agricultural labor than before migration and more labor compared to their
non-migrant male counterparts.

On the other hand, women may experience managerial feminization, whereby their roles
in household decision-making increase as they manage new adjustment strategies in a changing
household context. Managerial feminization involves managing finances, including remittances
and investments, and making agricultural decisions over production, market engagement, and
land management. Research regarding managerial feminization has produced inconsistent
findings that illustrate the importance of contextual nuances in understanding power relations.

Household income and management of remittances play a significant role in household
power dynamics and agricultural labor responsibilities (Amina Maharjan, Bauer, & Knerr, 2013;
Radel et al., 2012). Gray (2009) argues that remittances from domestic migrants (as compared to
international) lead to an increase in women performing on-farm labor; the in-person delivery or
smaller amount of remittances from internal migrants may put more pressure on women to
perform farm labor themselves. Amina Maharjan et al. (2013) find that international migration
leads to a decline of cereal crop production by women left behind but an increase in hired farm labor using remittances. Remittances play a conditional part in the impact of migration on the agricultural labor of men and women.

Several studies have indicated that, as men migrate, women must increase their labor activities but do not experience an increase in decision-making authority due to unchanging patriarchal societal structures and gender inequalities (Bhattarai et al., 2015; Lama et al., 2017; Slavchevska, Kaaria, & Taivalmaa, 2016; Tiwari & Joshi, 2015). However, other studies highlight that, through residence separate from their in-laws, more access to off-farm employment, and participation in community groups, women experience greater autonomy and authority in their households and within the community (Abdelali-Martini & Dey de Pryck, 2015; Gartaula et al., 2010; Yabiku et al., 2010). Different domestic arrangements and the access and ability to participate in community initiatives may offset increases in labor workload and influence the extent to which male out-migration may be liberating or further constraining for those left behind (Lama et al., 2017). These divergent narratives of labor and managerial feminization illustrate a need to “examine the feminization of agriculture, with greater attention to contradictions and heterogeneity of processes” (Radel et al., 2012, p. 105), as well as a focus on what level these dynamics are measured.
Chapter 3: Study area

3.1 Overview of Nepal

Nepal is a small yet ecologically diverse nation with an increasingly diversified economy. In 2015, the population was about 28,037,904 people with a 94.2 male to female sex ratio; it has an annual population growth rate of 1.35% (Nepal in figures, 2015). Additionally, 78.4% of people live in rural areas, and 25.2% live below the poverty line (Nepal in figures, 2015). The Nepali economy is currently growing at about a rate of 5.4% annually, with GDP per capita in 2014 at 692 USD. Its country-level GINI coefficient of 0.328 indicates a relatively unequal distribution of wealth (Nepal in figures, 2015) (See Table 1 in Appendix A for a more complete list of indicators for Nepal).

Specifically, the agriculture sector of Nepal is classified as “low development,” whereby agricultural production is low, access to assets is insufficient to increase factors of production, adoption of new agricultural technologies is slow and unsustainable, and health factors of agricultural households impede work capacity (Goletti, 2013). Agriculture comprised only 32.5% of Nepal’s economy in 2014, but 66.5% of the population was employed in agriculture (UNData, 2017). Furthermore, women comprise the majority of agricultural laborers; 83% of women employed in Nepal work in the agricultural sector, compared to a decreasing rate of 62% of men employed in agriculture as male out-migration increases (ILO, 2017).

The Mid-Western Region (MWR) of Nepal is its largest development region, covering all three ecological zones of the terai (flatlands), mid-hills, and mountains (see Figure 1) (UNFCO, 2011). The geographic diversity and isolation of this region contribute to its uneven development. The rugged terrain of the hill and mountain districts of the MWR contributes to the impairment of agricultural production through environmental factors such as flooding,
landslides, drought, and crop diseases (UNFCO, 2011). Since merely 20% of Nepal’s landscape is arable, and 40% of this arable land is irrigated, adequate agricultural production requires consistent and favorable weather patterns and seasonality. Therefore, several districts in the MWR are chronically food deficient; households cannot produce enough yield to sustain themselves and earn enough income to purchase food. This forces agricultural laborers to migrate to industrial areas for alternative employment, resulting in gender imbalances in the agricultural labor force (UNFCO, 2011).

MWR districts at the bottom of the midlands or Hill Region of Nepal and in the flatlands or Terai Region are largely responsible for agricultural production. The Surkhet District lies at the bottom of the Hill region; the food poverty incidence rate is at 30%, and 43% experience low kilocalorie intake ("District Profile of Surkhet," 2014). The most disadvantaged regions lie in the western part of the district, like the Lagam VDC, where residents experience high frequency of flooding and the highest poverty rate. Furthermore, the agricultural production in Surkhet is mostly made up of rice, wheat, and maize with a growing presence of vegetable crops, citrus fruits, mustard, potatoes, and lentils (MOAD & ABPSD, 2013). These distinctions of agricultural production and ecological factors across the Surkhet District alone illustrate multiple layers of variation in quality of life, access to resources, and social contexts.
Figure 2: Map of Nepal, the Surkhet District, and four research sites

Map prepared by authors
Gender, caste and religion-based inequities, specifically of historically marginalized groups like the Dhalits (or the lowest caste) and the Muslim population, pervade societal norms and structures in Nepal (UNFCO, 2011; USAID, 2013). Historical caste hierarchies have made it difficult for marginalized Nepali people to have a voice in political processes and has kept high castes (mainly Brahmin, Hill-Hindu, and educated Newars) in positions of power (Bennett, Ram Dahal, & Govindasamy, 2008). Furthermore, geographical variation across mountainous regions have perpetuated issues regarding social inclusion (ibid). Women have long been engaged in agricultural activities in Nepal, as well as involved in forest management and biodiversity conservation, yet their formal decision-making authority and political participation has been historically undervalued (Agarwal, 2001; Bhattarai et al., 2015; Khadka, Karki, Karky, Kotru, & Darjee, 2014). This is perpetuated by unequal access to natural resources, education, formal land rights, and agricultural technologies (Khadka et al., 2014). Thus, the need for inclusive, gender-sensitive development has long been called for in development efforts across Nepal.

3.2 Overview of Research Sites

AVIPMIL activities in Nepal have been operating in the MWR since 2013, both in the Surkhet and Banke Districts. Within each district, the project has established current research sites and scale-up sites. The current research sites indicate communities within various VDCs in which IPM practices were first established in 2013; scale-up sites indicate communities that stakeholders involved with the project intend to involve in IPM activities by the end of the current phase of the project from 2015 to 2019. In Surkhet, there are four current research sites and ten scale-up sites, and in Banke, there are four current research sites and seven scale-up sites.
This study was conducted across the four current research sites of the project within the mid-hills of the Surkhet District in Mid-Western Nepal. Across 2,451 square kilometers, the Surkhet District has a population of 350,804 people, of which 181,383 are female and 169,421 are male ("District Profile of Surkhet," 2014). The Surkhet District is one of ten districts in the Mid-Western Region identified by the Feed the Future Zone of Influence (ZOI) baseline report as an area of need, based on higher prevalence of out-migration, hunger, and economic security (USAID, 2013). This district is subdivided into 26 Village Development Committees (VDCs). The four VDCs involved in this study are Chhinchu, Dasharathpur, Mehelkuna, and Sahare (see Figure 2 above); within each VDC, the communities involved are Sanoharre, Goramare, Satmule, and Baghkor, respectively (See Tables 2 and 3 in Appendix A for sex and caste data).

Across these communities, the average population size is 10,069 people, and the average household size is 4.5 persons. The primary livelihood of residents is small-scale agricultural production. Rice, maize, and wheat are commonly cultivated for household consumption. Vegetables, including cabbage, chili, tomatoes, cucumber, bitter gourd, eggplant, cauliflower and cowpeas, are cultivated at varying levels for both household and commercial purposes depending on available resources and climactic factors. Most households utilize firewood as fuel for cooking and rely mostly on either tap/piped water or spout water. Overall literacy rates (defined as those who can read and write) for each VDC fall between 71% and 80.9%. However, the average male literacy rate averages 81.8%, and the female average is 69.3%, illustrating a 12.5% difference. Of the population between the ages of five and 25 years, an average of 77% of males and 66.7% of females are currently going to school.

Male out-migration is a prevalent trend in the Surkhet District, including the four targeted VDCs. According to the 2010 National Census in Nepal, the definition of “absent households”
include, "persons away or absent from birth place or usual place for employment or study or business purpose is considered absent population and thus not counted as present population” (CBS, 2014). In Chhinchu, 91.1% of the absent population are males, and in Dasharathpur, 94.7% are males. The absent population of males in Mehelkuna and Sahare are 87.7% and 85.7% respectively. Therefore, on average across all four VDCs, 89.8% of the absent population (approximately 737 individuals) is male. The prevalence of male out-migration contributes to a skewed average sex ratio of 84.3 males for every 100 females across the four VDCs.

The caste system in Nepal is complex, and expressions of caste hierarchy vary widely by locality (Bennett et al., 2008). In the mid-hill region, social exclusion and discrimination against Dhalits, Janajatis, and Muslims is historically common, and Brahman, Chhetri, and Newar are regarded as members of the “high caste.” Thus, caste-differentiated disparities of economic well-being, health, education, and social practices are prevalent. For example, 41.2% of Hill Brahmans belong to the highest wealth quintile across Nepal, whereby 45.9% of Hill Dhalits belong to the lowest wealth quintile (Bennett et al., 2008). The majority of people from these communities comprise five main castes: Chhetri, Brahman – Hill, Magar (Janajati), Kami (Dhalit), and Damai/Dholi (Dhalit) (See Table 2 in Appendix A). Several other castes are present in these areas, such as Thakuri (Chhetri), Sarki (Dhalit), and Gurung (Adivasi Janajati) (CBS, 2014). Among other social factors, caste is an important and intersecting dynamic that shapes the roles, expectations, and opportunities of men and women in Nepal.
Chapter 4: Methodology

We employed mixed methodologies during an eight-week study in Mid-Western Nepal using semi-structured household interviews, focus group discussions (FGDs), key informant interviews, and participant observation. The bulk of data collection occurred between May and July of 2017 across four communities in the Surkhet District of Mid-Western Nepal (see Study area section for more information below). Since household surveys may fail to capture or explain intra-household diversity, as well as subtle changes in power dynamics regarding migratory patterns (Yabiku et al., 2010), we focused our data collection through an in-depth, participatory approach. The research team consisted of a graduate student researcher, translator and field assistant, one faculty gender researcher, and an agricultural field technician. Our local partner, iDE Nepal, assisted with and continuously supported field logistics.

4.1 Sampling Scheme

In total, 109 individuals (64 female and 45 male) participated in the research activities (see Table 1). Interviews and FGDs were conducted primarily with farmers participating in the IPM project; participants also included iDE personnel, community-based facilitators (CBFs), agricultural field technicians, and government officials.

<table>
<thead>
<tr>
<th>Data collection method</th>
<th>Female participants</th>
<th>Male participants</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household interviews</td>
<td>37</td>
<td>20</td>
<td>57</td>
</tr>
<tr>
<td>Key informant interviews</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Focus group discussions</td>
<td>25</td>
<td>16</td>
<td>41</td>
</tr>
<tr>
<td>Totals</td>
<td>64</td>
<td>45</td>
<td>109</td>
</tr>
</tbody>
</table>
Participants were selected using both purposive and random sampling. To select key informants, we utilized purposive sampling based on their involvement with and knowledge of the IPM project to gather an array of perspectives. They included agro-vets (dealers of agricultural and veterinary products to farmers in their areas) and community-based facilitators (CBFs) of the AVIPM-IL project at each field site, as well as NGO partners and personnel, and a National Agricultural Research Council (NARC) researcher. We aimed to talk with as many key informants as were available to triangulate sources of information about the project’s presence in the surrounding areas, as well as consider various expertise and experiences in conjunction with the farmers.

Farmers were selected from existing iDE records of IPM farmer groups established at the community level; these farmer groups are self-organized and serve as the connection between the project and farmers. Four field sites in the Surkhet District have been established since 2013 as IPM working sites, in which IPM project activities have been focused and disseminated in the Surkhet District: Chhinchu Sanoharre, Dasharathpur Goramare, Sahare Baghkor, and Mehelkuna Satmule (see Figure 1). We aimed to talk to farmers that have been involved in IPM project activities through farmer group participation since 2013; therefore, these four IPM working site groups met our inclusion criteria.

Field technicians have recorded basic demographic information of farmers at these field sites throughout the project, including name, age, household head, and number of household members, as well as the IPM practices used by each farmer in each group. To set up our sample frame, we began by comparing the hand-written, in-field copies of these demographic records with the electronic copies into which these data were entered to ensure consistency. We then met with the community-based facilitator (CBF) of each of the four communities and cross-checked
these farmer records with their current knowledge of the IPM farmer groups to ensure that each farmer listed still lived in the community and was still a member of the group. Additionally, we cross-checked the IPM technologies marked for each farmer with the knowledge of the CBF. This initial triangulation helped ensure we had a clean sample that accurately met our criteria.

We intended to assess the patterns and impacts of male out-migration within each household and at the community level. Thus, we asked each CBF to note farmers in each group that have either migrated for work outside the community or households in which other members migrate for work (particularly husbands or eldest sons), as well as single-woman households. Due to their community-elected leadership roles and prominent community presence, the CBFs were the most reliable source of this migration information. With these data, we stratified each farmer group record into three types of households: 1) households in which male out-migration is present, either by the husband, father-in-law, or eldest son (dependent upon household composition); 2) households in which male out-migration is not occurring; and 3) single women-headed households (such as unmarried women or widows). We aimed to incorporate a proportional diversity of households from each strata, depending on the prevalence in each community. These strata did not indicate whether the household included mothers- and fathers-in-law. We randomly sampled 13 to 15 individual farmers – between seven to eleven households – from each of the four communities, reaching a total of 38 households and 57 individual farmers (see Table 2). A man and a woman from one household counted as two separate interviews.
Table 2: Types of households interviewed at each field site

<table>
<thead>
<tr>
<th>Field Site</th>
<th>Non-migrant households</th>
<th>Migrant households (1+ migrants)</th>
<th>Total households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chhinchu Sanoharre</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Dasharathpur Goramare</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Sahare Baghkor</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Satmule Mehelkuna</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total households</strong></td>
<td><strong>19</strong></td>
<td><strong>19</strong></td>
<td><strong>38</strong></td>
</tr>
</tbody>
</table>

FGDs were conducted toward the end of the fieldwork at each field site. We asked each CBF to recruit five to ten men and five to ten women farmers that had not been interviewed already; FGD attendance fell within this expected range. The CBFs recruited farmers mainly by calling them directly and utilizing word of mouth. If a farmer arrived at the FGD that had already been interviewed, we made note of this and did not count them in our overall count of participants. FGDs were separated by sex with a male-only and female-only discussion in each community; however, for one community, there were not enough men available at home and involved with the IPM farmer group to hold a group discussion. Each FGD lasted between two to three hours.

4.2 Data Collection

Household interviews were semi-structured after collecting basic demographic information, including age, estimated income, caste, household composition, and IPM implementation (see Appendix C for the household interview guide). Questions were informed by overlapping the Women’s Empowerment in Agriculture Index (WEAI) (USAID, IFPRI, & OPHI, 2012) and the Gender Dimensions Framework (GDF) (Rubin, Manfre, & Barrett, 2009) to inform and support a meaningful, comprehensive breadth of questions regarding agricultural labor and decision-
making (see Appendix B for the chart of interview questions informed by the WEAI and GDF). The order and phrasing of questions varied based on flow of conversation.

Each interview addressed four main themes: 1) changes in community gender roles, agricultural practices, and other social, political, or economic influences; 2) labor distribution throughout the household, including productive, reproductive, and community work, as well as leisure activities; 3) places that are important for farmers’ overall livelihoods and practicing IPM, as well as who has access and control over these places and who performs the labor; and 4) household decision-making. We discussed IPM and agricultural practices that were contextually relevant and catalysts for deeper conversation. The order of activities in each interview depended on time available with each farmer. Despite efforts to talk to individual farmers alone, other farmers or household members were often present during interviews due to the close density of households and communal nature of these communities. Key informant interviews were also semi-structured, whereby we asked questions addressing their role in the community or IPM project, challenges and benefits of this role, and their perspective on different aspects of the project and its impact (see Appendix D for the key informant interview guide).

During the FGDs, we conducted four main activities to better understand overall gender roles and expectations amongst community members, as well as impacts of IPM activities and practices. These four activities included: 1) opening questions to describe the challenges and benefits of IPM and how these are different for men and women; 2) a timeline of changes in IPM and migration and how these have affected gender roles; 3) participatory mapping of where IPM information is exchanged and how these are gendered; and 4) a socioeconomic activity and gender division of labor chart (see Appendix E for the FGD guide and activity instructions). We
encouraged participation from all individuals throughout these sessions to avoid domination by one participant.

Participant observation took place toward the end of fieldwork over four days. This involved spending about one day with farmers in family or community settings to help them complete daily tasks, such as collecting fodder for cattle, weeding their vegetable plots, transplanting rice, cooking meals, preparing johlmol, or participating in leisure activities. Questions were asked in a free-flowing manner, and notes were recorded after leaving the field as to not disrupt organic connections and interactions.

Notes from each interview and FGD were taken in the field with the help of the Nepali translator, and each interview was voice recorded. Interview and FGD notes were typed each evening, and reflections on findings and methods were typed each week. Direct quotes were collected from voice recordings, and notes taken during interviews were validated by listening to recordings again. Additionally, interactions such as body language, banter, reactions to certain questions or activities, and unspoken connections between the researchers and community members were noted to capture more nuanced, qualitative data.

Although most communication was achieved through direct translation, the student researcher attempted to learn basic Nepali vocabulary and utilize nonverbal communication to build relationships with community members and bridge cultural gaps whenever possible. Nonetheless, communication through translation presented various challenges that were ever-present during this research; such challenges incur limitations in data collections, analysis, and conclusions that we have attempted to address, as well as biases we may be unable to recognize.
### 4.3 Data Analysis

Demographic data from household surveys were quantitatively analyzed in Excel. Utilizing ATLAS.ti, notes from each interview, FGD, and other field experiences were qualitatively coded using 68 codes based on preliminary data analysis of weekly reflections in the field. These codes included concepts such as mobility, household decision-making, male out-migration patterns, and challenges and benefits of IPM. Our coding process utilized a constant comparison of codes using a combination of closed and open coding (Saldana, 2016), beginning with expected codes and code groups and adding unexpected codes as themes emerged. We split and lumped codes as we related them to relevant literature. Codes were then grouped together in conceptual networks for analytical purposes.
Chapter 5: Findings

5.1 Complexities of Household Composition and Migratory Patterns

Household composition, i.e. who is defined as a household member and who is present in the household, is a dynamic concept. We classified the households involved in our study into various types based on the multiplicity of factors influenced by migration. In rural areas, young women are most commonly married into an arranged marriage, whereby they move from their birth village into their husband’s home; this initial move is often into the home of their parents-in-law before the husband and wife move into an independent residence on their own terms. Emphasized as a significant variable by Gartaula et al. (2010) and Yabiku et al. (2010), we separated households into four categories based on co-residence with in-laws: 1) Non-migrant residing with in-laws (one household), 2) Migrant residing with in-laws (five households), 3) Non-migrant separate from in-laws (14 households), 4) Migrant separate from in-laws (18 households).

Furthermore, we classified migrants into short and long-term migration patterns. These categories were delineated based on two factors gleaned from our demographic data: 1) number of months the migrant spends working away from home without a break, and 2) if the migrant labor is contractual. Long-term migration is categorized by contractual labor that entails more months spent working away from home and less months spent in their home community on break. Specifically, long-term migrants spend eight or more months away from their home communities working, and spend no more than three months on break per year (often less); these migrants typically migrate to gulf countries and Malaysia. Short-term migrants engage in non-contractual labor, often to India, around the planting and harvesting of rice, as well as the Dashain Festival (the largest Hindu festival in Nepal occurring in October). Therefore, they are
reportedly absent for no more than seven months without a break (either between November and June or August and October), performing physical labor jobs such as construction of roads or buildings. We classified seven households with non-contractual, short-term migrants, twenty-one households with contractual, long-term migrants, and ten non-migrant households in our sample. These distinctions illustrate the various organizational structures of households, as well as the varying degrees of migration that exist; such distinctions are significant in further understanding how labor and decision-making processes are managed.

5.2 The Black Box of Household Headship

Household composition dictates both the formal and informal head of the household. For non-migrant households, the household head is often the oldest man of the household, as in the husband or father-in-law. This formal expression of the household head is the traditional cultural norm in Nepal, and it was reported this way in the demographic records of this IPM project (based on USAID Feed the Future indicators). A woman was formally recorded as a household head if she was a widow, was not married and lives alone, or if she is the eldest mother-in-law who lives with her extended family.

These formal definitions of household headship explain little of the intra-household power dynamics amidst migrant households. As men leave temporarily or for long-term work contracts, experiences and understandings of household headship change. Several women still reported their husbands as the household heads, even in their short or long-term absence while migrating. However, several women residing separately from their in-laws also indicated that, in their husbands’ absence, they are the household heads; this contradicted the formal project record of household headship. A woman farmer from Chhinchu Sanoharre stated, "If my husband is
home, he is the head. If he’s not, I am the head." These women self-identify as the household head based on their new agricultural and household responsibilities amidst an absent man in their household.

However, even in households where the migrated husband is identified as the household head, these women are still assuming new roles and responsibilities. The decision to self-identify as an interim or de facto household head is not based on explicit experiences or a common and understood set of criteria. Rather, it reflects a woman’s perception of household headship and the relational duties she performs and authority she maintains compared to other household members.

Residence with parents and in-laws convolutes the concept of household head and decision-making power. While still co-residing with their parents or parents-in-law, the father-in-law remains the formal household head, even amidst his son’s migration. A woman farmer from Dasharathpur Goramare, whose husband has been a labor migrant for thirteen years, resides with her mother-in-law and father-in-law; she stated that her mother-in-law makes decisions about the agricultural plot, but her father-in-law controls the household as the head. Farmers expressed that the father-in-law “controls” the household by providing formal permission for all household activities, including agricultural decisions. The same woman described her father-in-law’s roles by stating, “He comes to have food, says to do this and that, and just goes away outside.” This formal permissive role does not imply decision-making involvement or knowledge about agricultural practices or financial management, such as IPM or membership in savings and credits groups. Rather, it implies the need for that father-in-law’s permission to perform new practices, plant new crops, or take out loans from the cooperative. This permission process varies between households in both action and relevance.
5.3 Labor Feminization: “Men Plough, Women Plant”?

Through changing household dynamics of migration, women and other family members left behind must take on new household and agricultural labor roles. While referred to as labor feminization, women are not the only ones engaging in new roles on and off the farm. Short-term and long-term migration of men changes the composition of available decision-makers, as well as available people to perform labor. When asked to articulate who performs certain activities within a household many farmers responded with, "Whoever is free." This indicates an increasingly flexible division of labor amidst changing availability of household members. Men and women of migrant and non-migrant households, as well as children, are performing different agricultural and household roles.

Different household compositions define the extent to which these labor roles are changing. In households that co-reside with their in-laws, the father-in-law remains the formal head of household, and his labor duties remain mostly the same. These labor duties primarily involve ploughing the land. If the father-in-law is present, he ploughs the land, and the women do not. Fathers-in-law may cut grasses for cattle feed, as well as work in the field for irrigation, weeding and other activities; these activities are often shared with other household members. However, the roles of the mother-in-law and their daughter-in-law, whose husband has migrated, more directly increase. Women noted that when their husband migrates, they have more work in the household, and it is difficult to adjust. One woman said that she, along with her mother-in-law, started performing more agricultural work alongside their preexisting household duties when her husband left. When her husband is home, he helps work both on the farm and within the household, including weeding, cutting grasses, fetching water, and sometimes even cooking meals. The father-in-law does not assume such household responsibilities in his son’s absence.
In migrant households separate from their mother-in-law and father-in-law, labor adjustment strategies differ. The majority of women in these households openly stated that their workload increases in the absence of their husband, and it is easier to manage daily household and agricultural labor activities when he is home. Household labor duties mostly do not change. However, women confront new agricultural labor responsibilities in a variety of ways, namely through four main strategies; these include reducing agricultural production by cultivating less land, hiring paid labor, involving their children in new responsibilities on the farm, or taking on these new roles themselves. We observed all of these strategies enacted in varying and overlapping ways.

Some women directly stated that they reduced their vegetable production due to their husband’s recent migration because they could not maintain the workload. A woman farmer from Dasharathpur Goramare said,

Previously, we used to grow only cereal crops. If we grew vegetables, it was only for home consumption. After we learned about IPM, we started doing vegetable cultivation. Since I am the only one at home, my husband is out for work. I cannot grow vegetables in a commercial way. We grow for consumption, and if it remains, we sell. If he would be here, only then could vegetable production in a commercial way be done.

Other women stated that they still cultivate the same amount of land in their husband’s absence. In some cases, IPM practices have helped women perform less labor and achieve a greater vegetable yield than previous vegetable cultivation practices; women stated that IPM requires less time to spray pesticides, so they can spend more time weeding, and proper spacing between crops helped suppress weed growth.
Furthermore, to manage ploughing – a culturally male task that symbolizes a traditional gendered division of agricultural labor and rural masculinities – hired paid labor is the most common adjustment strategy among women in migrant households separate from their in-laws. Ploughing is culturally a male task in Nepal. In fact, most women stated that they are able to do everything in the agricultural field except for ploughing. Primarily, older sons in the family learn to plough and assume this role in their father’s absence. When children are too young or in the absence of children, women hire young male laborers (typically between one and five) for one to two days to plough their field in preparation for planting rice, wheat, maize, or vegetables at the appropriate time of year. Women who chose to hire laborers said it was an affordable option and expressed resistance to learning to plough; one woman from Chhinchu Sanoharre stated, “That is the one thing men must do!”

However, some women are directly assuming male-dominated tasks themselves, including ploughing. Although not the most common adjustment strategy, at least one woman at each research site ploughs her land. This act is a direct contradiction to traditional gender norms, and it is viewed as a recent and contentious change. Women who plough do not live with their in-laws, and most of them live in migrant households. These women are young and have young children who cannot yet learn to plough. In certain situations, the choice to plough was out of necessity, whereby young men were not readily available to hire in time before the rainy season began. A woman farmer from Satmule Mehelkuna described her experience learning to plough:

While ploughing, it is difficult to control ox, to move them in the right direction, and to move the ploughing tool it is difficult. My back hurts doing this. My son is only 8 years old, so he doesn’t help me in ploughing. Especially during the rainy season, it is difficult to find someone from the village to plough.” Another woman interrupted, “Sometimes,
the situation is such that we feel like crying – even when I have money, I cannot do anything.

While women describe ploughing as difficult to learn, some choose to plough even if other options are available. One woman from Chhinchu Sanoharre ploughs her own plot and her neighbor’s plot, even though her husband is not a migrant. Her husband is involved in construction work in the community, but she and other community members described him as a drunkard. She chose to learn to plough her own plot to decrease reliance on his unpredictable behavior and chooses to share that labor with her neighbor. Another woman from Dasharathpur Goramare chose to plough after her husband migrated because she had always wanted to try, but her husband did not approve. She said,

At first, they said, women cannot plough, but they saw me and now they are used to it… even I used to practice ploughing before when he [my husband] used to be here, but he didn’t allow me and scolded me. Now, he is not here, and I have to plough myself. At the start, it was quite difficult. I had body aches. But now I am used to it.

While many consider these women as acting outside gendered norms of agricultural duties, some women plough because of a lack of alternatives, and others plough in spite of such alternatives.

IPM cultivation is not solely performed by women, but women are increasingly involved in learning and practicing IPM as their husbands migrate. In non-migrant households, both co-residing and separate from their in-laws, both men and women are involved in IPM practices. This includes preparing johlmol, a bio-pesticide prepared with local herbs and cow dung/urine, weeding, and monitoring traps and lures. Typically, women plant the vegetables while their husbands plough, but these roles are more fluid than rice planting. Both men and women attend IPM trainings, even from the same household. However, in migrant households, both co-residing
and separate from their in-laws, the eldest woman and/or daughter-in-law are often members of
the IPM farmer groups to represent their household. They learn about IPM at group meetings and
teach the rest of their households or perform it themselves. If residing with their in-laws, in some
cases, the father-in-law is not involved in IPM cultivation and continues to perform his
traditional labor duties. If separate from in-laws, the migrant husband often does not know
anything about IPM since he is not home, and this work is entirely up to the woman of the
household to manage. One male migrant from Dasharathpur Goramare (25MHH14), while home
on break, clearly stated he knew nothing about growing vegetables with IPM and would not be
involved even while home on break. While some men learn and practice IPM before or after they
migrate, it is primarily enacted by the women of the household who remain in the community.

Finally, it is imperative to recognize that migration is just one of many driving factors
that influences gendered labor responsibilities over time. When asked about how gender
dynamics have changed in their communities over time, both men and women acknowledged
that several decades ago, women were less mobile beyond the household and not heavily
involved in agricultural production. Two sisters from Dasharathpur Goramare expressed that
when they were younger and first married about twenty years ago, they would waste their day
sleeping and doing household activities. Now, they are engaged in meetings, savings groups, and
selling at the market; responsibilities on the farm and outside of the house have increased. One of
the women said, through laughter, “The older I get, the more responsibilities I have!” Increased
access to television, radio, and other modern media over time have influenced gender norms and
labor duties in rural areas. Thus, labor feminization is occurring due to several changing
processes.
5.4 Managerial Feminization: Expanding Spaces of Decision-Making

As households turn to migration as a livelihood strategy, renegotiations of who manages household and community activities occurs. In our study, we specifically focused on agricultural and financial decision-making, supported by the WEAI as important indicators of power relations between household and community members. We find that important financial and agricultural decisions occur both within and beyond the household; communication with migrants and participation in community spaces expand the boundaries of decision-making that influence agricultural production and financial management. Increasing trends of male out-migration create ongoing and simultaneous opportunities to reconsider the societal norms that dictate how men and women engage in spaces across the community.

5.4.1 Financial Decision-Making: “It Depends on the Household”

Households make decisions about managing daily expenses in various ways that do not follow a clear, generalizable pattern; male out-migration complicates these patterns. Remittances provide an injection of income into the household, often monthly, that supplement agricultural income and require new management tactics than before migration. The average remittance amount amongst migrant households is 18,108 Nepalese rupees (NPR) (about 174 U.S. dollars) per month. In short-term migration patterns, remittances are less (about 8-10,000 NPR, or 77-96 U.S. Dollars) and more sporadic; men and women said the man will send money home “as needed.” In long-term migration, men send money home more systematically, every one to three months, and in larger amounts (between 15-50,000 NPR or 145-480 U.S. Dollars).

Remittances are often used for larger financial endeavors, such as loans, savings, school fees, and medicine; income from selling agricultural products (such as vegetables) or livestock
rearing are used for smaller household expenses, such as supplemental food, oil, salt, sugar, tea, and other household goods. Migrants supply remittances directly to their household through wire transfers as a portion of their earned income; in most cases, these remittances comprise the largest share of household income. Production and sale of vegetables provide farmers who do not migrate the opportunity to earn extra income, given adequate access to land, water, and IPM inputs to do so. This supplemental income from selling vegetables supports daily household expenses that are managed in various ways. Both men and women, if available, reported that they will go to the market to sell their excess vegetables, and this physical act of going to the market does not change who has control over the earned income.

Women in migrant households separate from their in-laws mostly manage daily expenses themselves, but with varying levels of authority. When asked about if women have more control over finances in their husbands' absence, most women responded with, "It depends on the household." Two women farmers in migrant households from Chhinchu Sanoharre and Dasharathpur Goramare stated that in their household, they control all finances, even if their husbands are home. However, one iterated that some women might not know how much things cost or have the knowledge of selling vegetables or managing the money, so their husbands will do it. Other women stated that they only manage the money when their husbands are gone, maintaining communication with their husbands daily or several times a week regarding purchases larger than daily household expenses (i.e. loans from the cooperative). In particular, another woman from Chhinchu Sanoharre consults with her husband before making any purchase, "even if I need a new pair of slippers!" Although, she clearly stated that she does this because she wants to and chooses to. Her husband tells her to spend the money on her own since it is their shared property, but she feels she should ask him before spending the money he
ultimately earned. Women did not express management of daily household expenses as a direct increase in household control or authority; rather, it was simply easier for them to manage these daily purchases, i.e. oil, salt, tea, and other kitchen supplies, since their husbands were not present to do so.

In other non-migrant households, financial management processes differ. In co-residence with in-laws, the father-in-law retains formal permission over financial decisions. However, this does not mean that he keeps the money himself; in several cases the mother-in-law keeps the money in the household, and he asks her for it when he needs it. In other non-migrant households, men or women may manage the money. Households reach different arrangements depending on power dynamics amongst family members. One woman from Chhinchu Sanoharre, who also ploughs her own land, said that she controls all the money in the household for daily expenses because her husband is often drunk; she manages his income, manages IPM expenses, and purchases household goods herself. On the other hand, another woman from the same community said that her husband is also a drunkard and is involved with local politics, as well as the farmer group; she has no control over their household income and has limited access to it from day-to-day. Finally, a woman in Sahare Baghkor whose husband engages in short-term, temporary migration around the planting and harvesting of rice, said that when she started growing vegetables, she gained access to money that she can spend herself. Before growing vegetables, she had no money to spend. Her husband is also often drunk and does not send large remittances or at reliable intervals while migrating. While these women are in similar situations, their involvement in household finances is quite different.

Both non-migrant and migrant (short and long-term) households make collective decisions regarding larger financial decisions, such as taking loans or selling their land. Almost
every household has indicated that they would need to consult with their spouse or other family members before selling their land, despite who formally owns the land and if the man is physically present or not. A woman whose husband does not migrate (and was present during the interview) said, “My husband and I will have a conversation if we can sell our land; even he cannot sell by himself!” In this context, her husband formally owned the land, but they both agreed that he would not sell it without consulting his family first. This cooperative process was most common across households. If the husband has migrated, communication would occur over the phone, whereby most women talk to their husbands at least once per week, if not every day. In the nine households where women owned their land, or both the man and woman owned parts of their land, they would not sell it without discussing with other household members first. However, when the father-in-law formally owns the land, women and their husbands both stated that they would have no formal role in selling this land.

Participation in savings and credit groups involves both individual savings and the ability to take out loans when needed. Only the individual registered in the group can save and take out a loan formally, and farmers often belong to multiple groups. Several savings and credit groups specifically target women, especially as men are engaging in labor migration. One key informant involved with a local cooperative network said that they aim for over 40% of women’s participation in each group they help manage. Cooperatives – initially established in these communities 15 to 20 years ago – provide a place for women and men to manage their finances outside of the home that had not existed 20 years prior. These cooperatives aim to increase access for women (and men in joint cooperatives) to formally save their money and access loans, particularly in cases where women would not be able to do so within their households or in a formal bank without ownership of land and other assets. This institution and participation in
these groups has mixed implications for different men and women within their household contexts, as well as within the community.

Members, both men and women, save on their own at a fixed rate per month; this savings process is mostly individual. Yet, men and women in migrant and non-migrant households would not take out a loan without discussing with their spouse and other household members first. To take a large loan from a bank, an individual must have formal ownership over their land to use as collateral; this is most often the eldest man of the household. They do not need collateral to take loans from the cooperative. Nonetheless, even if women do not discuss daily expenses with their husbands, or if their husbands have not been home in ten years, they will always discuss taking a loan with their spouse, as well as all other household members (including in-laws for formal approval), before doing so.

These financial cooperative spaces increase interactions between men and women in the community. In a focus group discussion in Dasharathpur Goramare, one woman described the perceived differences between men and women managing money within the household. She said, “It would be better if the men would ask the women for money for things like tobacco and tea rather than the women asking the men for money for household goods.” This illustrates different management strategies and priorities between men and women within the household that are highly variable and entrenched in gendered expectations within and beyond the household. However, through the cooperative, women and men can both save in their own names, and women can save without their husbands present. Membership in these cooperatives provide a place for men and women to go for meetings at least once a month and publicly establishes women as capable to manage money within and beyond their households.
5.4.2 Agricultural Decision-Making: “When He Comes Home, Then He Can Decide”

Amidst these new cultivation practices, such as vegetable cultivation using IPM, as well as changing societal gender norms, dynamics of agricultural decision-making at the household level are highly variable. If a father-in-law is present in the household, he retains ultimate decision-making authority over what crops are grown on their land; however, his wife and daughter-in-law, as well as other household members, play a role in suggesting varieties and practices other farmers are using, as well as sharing IPM knowledge with the household. This shared knowledge can facilitate experimentation with and adoption of new crop varieties, as well as IPM. For non-migrant and short-term migrant households, choosing what varieties of rice, maize, wheat, and vegetables to grow is described as a joint endeavor; when both the husband and wife are present, they talk to each other, as well as other farmer group members and community leaders, about what they will plant and at what time in the season.

In many long-term migrant households separate from their in-laws, when a man leaves for work, his wife is in charge of the agricultural work on their land and the decisions that go along with it. Men increasingly undertake decisions regarding migration and other off-farm endeavors, and decisions regarding the agricultural plot are then undertaken by women at home. Both men and women explain that the woman will make these decisions about what to grow and how to grow it, as well as manage the labor, in his absence; while migrated, he cannot manage both his own work and work back home on the farm. A woman farmer from Chhinchu Sanoharre, whose husband has worked abroad for 15 years, explained how she became involved in agricultural work and her authority over the process:

Before my husband left, our situation was not very good. He used to do construction labor for other households, like constructing buildings, etc. I was not doing agricultural
work at this time. Then, he left for Sudan shortly after getting married, and that’s when I started do agricultural work. So, I have been handling the agricultural work the whole time since he’s been gone . . . He has no idea what is going on in the farm, so I am responsible. When he comes home, then he can decide.

Another woman from Chhinchu Sanoharre explains that when her husband is gone, she is in charge of the agricultural activities, and she can do everything except for plough the field (for which she hires paid labor to perform). When we spoke with migrant men whom were home on break, they openly described a separation from agricultural decision-making while they are gone. One man from Satmule Mehelkuna said, “What can I say from there [Qatar]? She will manage herself”

Decision-making occurs beyond the household and interacts with household level power dynamics. Farmer group meetings serve as community spaces for both men and women from different household types to make agricultural decisions collectively. The farmer groups are community-organized and community-led; each group has an executive board that is elected by other community members. The community-based facilitator (CBF) is the liaison between the farmer group and IPM project personnel; other members in the group elect them as well. Farmer group presidents and CBFs are both men and women (half of the CBFs and farmer group presidents are women across our 4 research sites). The groups meet monthly somewhere in the community to discuss IPM practices, place orders for IPM products through the CBF, conduct savings and credit activities, and decide what crop varieties to grow in each season. These farmers discuss with each other, as well as the leaders and CBF of the group, on a monthly basis (or whenever they can attend) to make decisions about their farm and what crop varieties they
will grow in each season. A man farmer from Sahare Baghkor illustrates his complex social networks of decision-making:

To make decisions about agriculture, I decide after discussing with my wife. I will take advice from the CBF and other technicians in the community about what to plant. I will also discuss with others about which varieties are better, what technologies have been working, when to sow rice, etc. My wife will also discuss with her friends.

Farmers express trust with and reliance on the CBF amidst learning new IPM practices that are knowledge intensive and require ongoing support and advice. Several women said that they talk to the CBF whenever they have issues with pests on their farm or need help with IPM from season to season, as they attempt to grow new crop varieties. Figure 3 shows a participatory map from a female FGD in Dasharathpur Goramare, indicating spaces that participants gather and share information about IPM. Below the cooperative house structure, they drew four spaces of IPM learning and sharing, starting at the IPM seedling nursery, the IPM trainings (indicated by the circle labeled “IPM”), the demonstration plot in their community, and their monthly IPM cooperative meetings. The seedling nursery and IPM trainings indicate both men and women interacting, whereby the demonstration plot and cooperative meetings are drawn as just women’s spaces of interaction. The physical distinction of these spaces illustrates that the social interactions and knowledge sharing processes can differ and are independently important.
Figure 3: Participatory map from female focus group discussion, Dasharathpur Goramare

Using these community spaces for collective agricultural decision-making helps share the risk of using new agricultural technologies, and it expands factors that influence agricultural production to realms beyond the household. Farmers rely on the CBF to bring IPM products to them from the market and help them choose what products they need, want to try, or collectively decide to use. The CBFs will ask the farmer group at each meeting which IPM products, i.e. traps, lures, biopesticides, nylon netting, plastic trays for seedlings, etc., the farmers would like to purchase. This collective decision-making process facilitates farmers arriving at a common agreement of which crop varieties and, subsequently, which IPM products they will "order" through the CBF. The CBF purchases these products at the market from the local agro-vets, with whom they have an established and iterative relationship, and delivers them to the farmers either at the farmer group meetings or at the farmers' homes. A woman farmer explained,
"If everyone wants one [IPM] resource, it is easier to access and cheaper to buy from the CBFs, such as nylon nets or plastic trays, and it decreases the costs in bulk." Therefore, decisions to purchase new products or try different seeds may occur entirely within the farmer group cooperative, in which only one household member is present at a time.

Spaces where people gather and how people gather are changing. Places such as farmer group cooperatives, savings and credit cooperatives, the market place, and even IPM research plots serve as public places for men and women to interact, and these interactions inform their agricultural decisions. Farmers across all four communities explained that ten to fifteen years ago, women were not often directly involved in agricultural production and could not leave the house often without permission. Over the past decade, women have assumed leadership roles and increased participation (not just attendance) in these spaces; one man from Sahare Baghkor said that he thinks women speak more than men do at their IPM meetings. Women who are leaders in the IPM farmer groups reported that they are now able to speak in front of large groups and are no longer afraid of groups of men, as they were before participating; men leaders did not report this as a benefit of their leadership position. Women members more commonly described that the farmer groups allow people to “gather together” in which they “built confidence” to talk and interact in those spaces, as well as learn new information about vegetable production. Men did not describe any initial difficulty or discomfort in interacting with others in group settings, describing the benefit of the groups mainly as a place of learning new agricultural information. While these patterns of participation do not describe every woman’s or man’s group experiences, the acceptance of both men and women in important public places – that were once solely controlled my men – is increasing.
Chapter 6: Discussion, Conclusions, Limitations, and Recommendations

6.1 Discussion

This paper contributes empirical evidence to a discussion of the complex processes of the feminization of agriculture in the Mid-western mid-hills of Nepal. We aimed to answer the following research questions: 1) In the Nepali mid-hills, how does male out-migration affect gendered household decision-making and agricultural labor, and 2) how does the experimentation with and adoption of IPM practices affect gendered workload and decision-making processes? We find mixed changes in labor and managerial roles of women in the context of male out-migration, complicated by the complexities of household composition and migration patterns. Women are experiencing an increase in household labor duties and changing agricultural labor duties amidst migration and IPM practices. Furthermore, agricultural and financial decision-making are linked to the changing dynamics of community spaces as they relate to gender relations within and beyond the household.

Male out-migration disrupts the physical cohesion of the household and intersects with the household composition in heterogeneous ways. Formal household headship does not explain who holds new agricultural knowledge or who performs the labor in various spaces of livelihood management; other household members maintain power throughout daily interactions and complicate the formal title of household head. Across these four communities in the Nepali mid-hills, de jure household headship often defaults to the eldest man in the household, but de facto household headship varies between households as migration increases. Some women define themselves as the household head in their husband’s absence, indicating changes in their managerial power and their household’s composition. Other women may not identify as the household head in their husband’s absence, but their labor and managerial roles are nonetheless
changing. These differences reflect how these women perceive the role of the household head as well as their own roles in the household. This inconsistency in how household headship is defined and perceived adds caution to its use as an indicator in development records, as well as to the feminization of agriculture narrative (Zhang et al., 2006). Targeting “vulnerable” women-headed households for development efforts or as a way to better understand the implications of male out-migration omits women in different situations of vulnerability. It omits women residing with their in-laws, as well as women who do not identify as the household head but enact new positions of power in their households. Such differences in household composition cannot be overlooked as we aim to more deeply measure and understand the gendered impacts of labor migration.

 Labor feminization is a complex phenomenon that is affected, in part, by male out-migration but is related to other important household factors and changes in gendered expectations. As men seek employment outside of their communities, the success of these household duties depends on a reassessment of how labor is performed with less available household members. As households adjust to changing compositions, the limits and possibilities of what men and women are allowed and able to do is inherently affected. In the absence of their husbands and other men in the community, women assume new roles and responsibilities on the farm; this adheres to the dominant feminization of agriculture narrative. These changing labor burdens, particularly of women performing more work in their husband’s absence, dictate farmers’ ‘time poverty’ and may affect the extent to which farmers can participate in group organizations and community activities (Lyon, Mutersbaugh, & Worthen, 2016). Yet, while some women are learning to plough their own fields, others hire paid labor and manage this paid labor themselves. Children (both boys and girls) of sufficient age are also taking on these roles
once performed by their father, or a father-in-law continues to perform these tasks regardless of the migration of his son. Other factors, such as the reliability of their husbands, are also pushing women to take on new labor duties, such as ploughing, or consider the possibility of hiring labor when available. The increasing visibility of “exceptions” to the traditional division of labor presents men and women with different possibilities of managing and performing their work.

Regarding managerial feminization, the household is continuously impacted by decisions and relationships established in the community. Using the household as a separate and confined unit of analysis neglects the daily contestations and renegotiations of gender norms that occur at the community level, such as at the farmer cooperative, market, or at other farmers' households. We must consider the use of and the changing nature of community spaces within the feminization of agriculture and other rural transformations. As Gartaula et al. (2010, p. 574) emphasize, “The village is an arena of practicing development;” this arena iteratively connects to the ways individuals participate in other livelihood spaces, such as their households. The renegotiation of gender norms in the context of male out-migration and the development of the IPM farmer group creates a “window of opportunity” (Giri & Darnhofer, 2010) for men and women to participate in new community spaces in different ways. As emphasized by Abdelali-Martini and Dey de Pryck (2015), the ability for farmers to gather together and bring women in contact with other women and men allows a sense of solidarity to foster.

Associations between male out-migration and empowerment often make assumptions about how control over household activities is realized. It is often argued that increased control over household finances or agricultural decision-making can be linked to an increase in empowerment. Control is typically operationalized as input in agricultural decisions or direct management over household expenses. However, we find that among both migrant and non-
migrant households, power dynamics and distribution of household labor and decision-making are changing with variable outcomes. Increased control over agricultural production may occur in more subtle ways, underneath the formal authority of the father-in-law. As women engage directly with the IPM project within the community or gain new agricultural knowledge about diverse crop production, they are influencing, both directly and indirectly, how their household manages their land. Although, their formal authority does not change. In households separate from their in-laws, women may have more control over household and agricultural activities in their husband’s absence, but they also may have more labor responsibilities. How households manage a balance between new agricultural knowledge, labor duties, and household decision-making is highly variable. This balance between labor and decision-making authority may be empowering or disempowering depending on how these forces interact.

6.2 Conclusions

The changing collectivism of community spaces, such as farmer cooperatives – how people gather, why they gather, and who has control – is integral to the pathways in which men and women may achieve a greater sense of empowerment (Cornwall, 2016; Kabeer, 2011; Kabeer & Huq, 2010). If we assess the implications of male out-migration at a systemic community level, the changes in overarching gender relations becomes more evident. Changes in who has access to public spaces, as well as how these spaces can be used, signify important shifts in power that operate beyond the household level. These changes must be considered both within and beyond the context of development interventions.

Development projects, such as the IPMIL in Nepal, play a prescriptive role in how farmers utilize their farmer cooperatives and can help support the sustainability of such efforts. Projects aimed at disseminating new agricultural technologies can help farmers come together in
new ways, i.e. train farmers on new IPM technologies and encourage farmers to discuss and assess the successes and setbacks of their continued IPM use. However, learning new agricultural practices is not the sole benefit of bringing farmers together through self-organized groups. The changing power dynamics of community spaces may not continue to or consistently align with development projects’ goals or activities. Empowerment built and strengthened through collective spaces is not limited or strictly defined by outside agencies. The ability to organize in social spaces and foster relationships among women, as well as men, is a key element of understanding empowerment at an individual level; the outside agencies that mediate these spaces play a powerful role in shaping the potential and sustainable use of such spaces. These social changes interact with how individuals navigate their daily livelihoods, as well as participate in their household.

We found that through FPE and SRA, we can more deeply engage with how development interventions overlap with social norms that operate across individual, household, and community levels. Differential management of household finances, as well as distinctive knowledge of IPM practices and vegetable cultivation exhibits the first dimension of FPE, gendered knowledge. The changing labor practices of women on the farm as they relate to land rights, namely through the feminization of ploughing, as well as through agricultural management of vegetable production and hired farm labor, emphasize the dynamic gendered differences of the second FPE dimension, gendered rights and responsibilities. Finally, the social value and shifting subtleties of gendered community spaces relate directly to the third dimension of FPE, gendered collective action. As men and women gather together to participate in new agricultural production practices, community structures of power and gender norms are changing; these changes relate in various ways to household and individual experiences. The
community, as one of four institutions in the SRA, holds significant implications for how individuals and households perceive, experience, and contest gender as it dictates labor and decision-making roles. Therefore, impacts of male out-migration on IPM practices and decision-making cannot be fully understood without understanding both household and community processes that jointly influence social norms and expectations. By paying attention to the heterogeneous ways individuals fit within or contradict dominant narratives, such as the feminization of agriculture, we can more holistically understand how new agricultural technologies interact with gendered relations.

6.3 Limitations and Recommendations for Future Research

Several limitations have influenced this research, such as language, time, and resources, despite our best efforts to mitigate them. All fieldwork activities were conducted through a translator, which may have inhibited interactions with participants, as well as the translation of interview responses. Furthermore, full transcripts of each interview and focus group discussion were neither financially nor logistically feasible to obtain, so responses were thoroughly recorded through field notes, and direct quotes were obtained from interview recordings when especially relevant. Our data would be richer with full transcripts that directly reflect farmers’ words. Finally, fieldwork was conducted over a seven-week period, whereby a longer time spent collecting data and interacting with community members would provide a more holistic understanding of the nuanced dynamics in each community.

These limitations invite future research to help address some of these shortcomings and pursue future research directions, such as the dynamics of the feminization of agriculture, “expanding rural spaces” (Gartaula et al., 2010, p. 576), and IPM use. First, research that focuses on understanding cooperative spaces and how farmers interact within these spaces would directly
complement our finding that significant agricultural decision-making occurs in these spaces. This research could include a longitudinal analysis of how cooperative dynamics evolve over time. Understanding how cooperatives change in significance and use could help illustrate the short-run and long-run sustainability of development projects that rely on cooperatives and community spaces to disseminate information. Community ownership and power over these spaces as it intersects with gendered social norms would provide key insights into what supports or inhibits increased community adoption and involvement in new agricultural technologies and changing practices.

Finally, using the theoretical approaches of FPE and SRA to understand the heterogeneity of the feminization of agriculture narrative could benefit from different geographic applications. Engaging in a wider range of geographic contexts would provide a deeper understanding of how context changes processes of labor and managerial feminization. This could strengthen our understanding of this global process of change as it relates to different agricultural systems and changing agricultural practices.
References


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Appendix A: Extra Tables

Table 1: Summary of the most recent (2012-2015) country-level indicators for Nepal

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>28,513,700</td>
</tr>
<tr>
<td>Life expectancy</td>
<td>69.61 years</td>
</tr>
<tr>
<td>Population growth rate</td>
<td>1.4%</td>
</tr>
<tr>
<td>Median Age</td>
<td>23.1 years</td>
</tr>
<tr>
<td>Dependency ratio, young age</td>
<td>53.4%</td>
</tr>
<tr>
<td>Dependency ratio, old age</td>
<td>8.6%</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
</tr>
<tr>
<td>Gross Domestic Product (GDP)</td>
<td>$20.881 billion</td>
</tr>
<tr>
<td>GNI per capita</td>
<td>$730</td>
</tr>
<tr>
<td>GDP per capita, PPP</td>
<td>$2,265</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td></td>
</tr>
<tr>
<td>Infant mortality rate per 1,000 live births</td>
<td>29.4 infant deaths</td>
</tr>
<tr>
<td>Obesity prevalence rate</td>
<td>2.9%</td>
</tr>
<tr>
<td>Average dietary supply adequacy</td>
<td>121%</td>
</tr>
<tr>
<td>Number of people undernourished</td>
<td>2.2 million</td>
</tr>
<tr>
<td>% of population undernourished</td>
<td>7.8%</td>
</tr>
<tr>
<td>Access to improved water sources</td>
<td>90.7%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Net enrollment rate of both sexes, primary</td>
<td>96.9%</td>
</tr>
<tr>
<td>Girls not in primary school (absent)</td>
<td>56,883</td>
</tr>
<tr>
<td>Boys not in primary school (absent)</td>
<td>35,099</td>
</tr>
<tr>
<td><strong>Economy</strong></td>
<td></td>
</tr>
<tr>
<td>Population below poverty line</td>
<td>25.2%</td>
</tr>
<tr>
<td>Economic complexity index</td>
<td>-0.512</td>
</tr>
<tr>
<td>External debt</td>
<td>$4.609 Billion</td>
</tr>
<tr>
<td>Avg. value of food production per person</td>
<td>$203</td>
</tr>
<tr>
<td><strong>GDP composition</strong></td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>13.8%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>29.4%</td>
</tr>
<tr>
<td>Services</td>
<td>49.4%</td>
</tr>
<tr>
<td><strong>Labor Force composition</strong></td>
<td></td>
</tr>
<tr>
<td>Industry</td>
<td>12%</td>
</tr>
<tr>
<td>Sector</td>
<td>Percentage</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
</tr>
<tr>
<td>Agriculture</td>
<td>69%</td>
</tr>
<tr>
<td>Services</td>
<td>19%</td>
</tr>
</tbody>
</table>

**Agriculture GDP**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>49.4%</td>
</tr>
<tr>
<td>Livestock</td>
<td>25.7%</td>
</tr>
<tr>
<td>Vegetables</td>
<td>9.7%</td>
</tr>
<tr>
<td>Forestry</td>
<td>8.1%</td>
</tr>
<tr>
<td>Fruits and Spices</td>
<td>7.04%</td>
</tr>
</tbody>
</table>

**Environment**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural CO2 equiv. emissions</td>
<td>22,058</td>
</tr>
<tr>
<td>Forest area</td>
<td>25.4% of total land area</td>
</tr>
</tbody>
</table>

---

**Table 2: Sex-disaggregated data of four research sites**

<table>
<thead>
<tr>
<th>Research Site</th>
<th>Chhinchu</th>
<th>Dasharathpur</th>
<th>Mehelkuna</th>
<th>Sahare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of households</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,956</td>
<td>1,221</td>
<td>2,308</td>
<td>2,343</td>
<td></td>
</tr>
<tr>
<td>Total Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6,609</td>
<td>2,422</td>
<td>4,280</td>
<td>5,182</td>
<td></td>
</tr>
<tr>
<td>Total Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7,427</td>
<td>2,925</td>
<td>2,925</td>
<td>5,894</td>
<td></td>
</tr>
<tr>
<td>Percentage of Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47.1%</td>
<td>45.3%</td>
<td>43.6%</td>
<td>46.8%</td>
<td></td>
</tr>
<tr>
<td>Percentage of Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52.9%</td>
<td>54.7%</td>
<td>56.4%</td>
<td>53.2%</td>
<td></td>
</tr>
<tr>
<td>Total Population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14,036</td>
<td>5,437</td>
<td>9,815</td>
<td>11,076</td>
<td></td>
</tr>
</tbody>
</table>

---

**Table 3: Caste disaggregation of four research sites**

<table>
<thead>
<tr>
<th>Research Site</th>
<th>Brahman – Hill</th>
<th>Magar (Janajati)</th>
<th>Kami (Dhalit)</th>
<th>Damai/Dholi (Dhalit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chhinchu</td>
<td>43.60%</td>
<td>19.50%</td>
<td>15.10%</td>
<td>4.80%</td>
</tr>
<tr>
<td>Dasharathpur</td>
<td>38.80%</td>
<td>25.30%</td>
<td>19.10%</td>
<td>3.60%</td>
</tr>
<tr>
<td>Mehelkuna</td>
<td>27.30%</td>
<td>12.10%</td>
<td>45.70%</td>
<td>4.30%</td>
</tr>
<tr>
<td>Sahare</td>
<td>36.60%</td>
<td>27.80%</td>
<td>20.30%</td>
<td>4.80%</td>
</tr>
</tbody>
</table>
## Appendix B: WEAI and GDF Chart

<table>
<thead>
<tr>
<th>Women's Empowerment in Agriculture Index (WEAI) Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control over income</strong></td>
</tr>
<tr>
<td>1) Sole or joint control over use of income</td>
</tr>
<tr>
<td><strong>Do you have access to your household income for daily needs?</strong></td>
</tr>
<tr>
<td><strong>How does male out-migration affect control over income?</strong></td>
</tr>
<tr>
<td><strong>Who purchases resources/inputs to practice IPM?</strong></td>
</tr>
<tr>
<td><strong>How do you decide to take out a loan?</strong></td>
</tr>
<tr>
<td>Who saves in the cooperative?</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
</tbody>
</table>

**Gender Dimensions Framework**

1) Access to assets
2) Beliefs and perceptions
3) Practices and participation
4) Laws, legal rights, policies, and institutions
5) Power
**Appendix C: HH Interview Questionnaire**

Activity Code:  
TOTAL TIME: 1 – 2 hours (max.)

Date:

**Roles:**
1. Research/Facilitator (Asks questions, takes notes)
2. Translator (Directly translates questions and responses)
3. Interviewee (Man or woman of the household)

**Materials Needed:**
- Pen
- Paper/Notepad
- Mapping paper/Drawing pad
- Activity Chart
- Markers (in different, bright colors) for participants
- Copies of Consent Forms
- Code chart
- GPS
- Camera
- Voice recorder

**INTRODUCTIONS (5 minutes): Introduce yourself and any assistants working with you.**

*Introduction example:*

```
Namaste, my name is Kaitlyn, and I am a student at Virginia Tech University. Thank you for making time for me today; I greatly appreciate it. As part of my studies, I am working with iDE to conduct research here in the Surkhet District about their integrated pest management project (IPM CRSP). I understand that iDE has been working in this area for several years now (about 3 years) on this project in partnership with Virginia Tech, and I am interested in understanding how gender roles affect practicing IPM. This is my translator Lina, and we are here to learn from you about the key activities, actors, and decision-making processes about IPM.
```

**READ THE FOLLOWING PROMPT TO INTRODUCE THE ACTIVITIES:**

**This research will involve four activities:**

1) A timeline exercise where we will ask you to tell us about changes in farming and household practices and before and after IPM was introduced;
2) An activity profile where we will ask you to tell us about the activities involved with IPM, who is responsible for them, and where they take place;
3) A mapping exercise where we will ask you to draw the people, inputs, outputs, and relationships involved in IPM practices;
4) Additional questions about your involvement with IPM and your agricultural labor roles/practices.

PART ONE:

A) Informed Consent (5 minutes)

Read the consent prompt for the IRB approval

Complete consent form (separate document) according to verbal consent form. Check when completed ☐

B) Basic Information (15 minutes)

1. Name: __________________________________________________________
2. Age: ________
3. Sex: ________
4. Caste: _______________________
5. VDC: _______________________________________________________
6. IPM Farmer Group: ________________________________
   a. What position do you hold? __________________________
   b. How often do you meet? __________________________
7. Wealth/Status indicator (unknown yet): _________________________
8. Household composition (Circle one): MNF, FNM, MF
   a. Who is the head of this household (if not already stated)?
      _______________________
9. Number of Household members (people who typically live and eat together): _________
   a. Number of males: ____________
      i. Ages of male members: ____________
   b. Number of females: ____________
      i. Ages of female members: ____________
10. Is there any member of your household that has out-migrated, i.e. spends a portion of the year (x number of months to be determined) working and living outside of the community? ________________________________
a. How long have they been away? __________________
b. Where did they go? ___________________________
   i. Include GPS coordinates: __________________
c. Do they send money home? YES _____   NO____
   i. If so, how much? (may not be appropriate) __________
   ii. If so, how often? ______________
d. What other sources of livelihood/income do you have (i.e. small businesses, etc.)
   ____________________________________________________________________________
   ____________________________________________________________________________

11. How many years of formal education do you have? _____________
12. How long have you lived here? ______________________________
13. How much land does your household farm?
   ____________________________________________________________________________
14. Who owns this land [that your household farms]? ______________
15. Are you personally allowed to sell this land? ________________

16. Are you (yourself, not your spouse) a member of any other farmer groups or association?
   a. YES _____   NO____
   b. Which one? _____________________________________________
   c. What position do you hold? ______________________________
   d. How often do you meet? _________________________________
17. Are you a leader in this organization? YES__   NO ___
18. If so, what position do you hold? __________________________
19. (Only applicable to females in the household) Are you currently or have you in the past
   been a member of a women’s self-help group/empowerment initiative (i.e. other than a
   savings credit group such as for public speaking)?
   ____________________________________________________________________________
   a. YES _____   NO____
   b. Which one? _____________________________________________
   c. What position do you hold? ______________________________
   d. How often do you meet? _________________________________
20. Have you (yourself, not your spouse) been to any IPM trainings over the past 3 years?
   a. YES _____ NO______
   b. How many? ______________________________________
   c. Where were these trainings? _________________________
   d. Have you applied any IPM techniques from these trainings on your own land?
      i. YES _____ NO______
      ii. What techniques have you applied? ______________________
          ______________________________________________________

PART TWO: TIMELINE (10-15 minutes):

1. What significant changes in agricultural practices have occurred in your household in recent history?
   a. Allow the respondent to draw first with minimal guidance to see what they find important and influential.

Depending on what they draw, follow-up with appropriate questions:

2. How has IPM impacted your agricultural practices over time?
3. [In the case of an absent male in the household] How has this affected your work responsibilities and IPM practices?
4. Do you have control over the household income, and how has this changed over time?
5. When did you learn about IPM? How? From whom? Where?

PART THREE: ACTIVITY PROFILE (20 minutes):

Use the Activity Profile chart (See attached) to identify activities either directly linked to IPM or that might indirectly affect the respondent's relationship to IPM. Be sure to note where these activities take place (in the last column).

Instructions: This exercise intends to identify activities that men and women, including work on and off the farm, in the household, and in the community. We will go through this activity chart and would like to know who completes each task in your household

Go through activity chart with respondent.
   Examples of paid activities may include seedling production, planting, harvesting, weeding; Examples of non-paid activities include responsibilities in the house-lot garden, expectations in the home such as child-rearing or cooking, participation in community groups or activities.
When the respondent has finished answering, ask the following additional questions:

1. Are there aspects of working with IPM that men/women cannot do? Why?
2. Are there aspects of working with IPM that men/women are particularly good at? Why?
3. What do you do when you finish all of your farm and household duties?
4. What would you do if you had more free time?
5. What are the benefits to working in a women’s AND/OR farmer’s group?

MAPPING SPACES OF IPM PRACTICES AND DECISION-MAKING (35 minutes):

Read the following prompt to introduce the mapping activity:

First, map the spaces on your land and in your community that are important to practicing IPM. Please begin by drawing your house and your land.

A) Use the following questions to guide the mapping process as needed:

1. Where are the IPM trainings held?
2. Who is involved at each of these spaces? Please indicate if they are women or men.
   a. [In the case of an absent male in the household] Where does your husband influence household decision-making/make decisions from afar?
   b. Where do other family members or hired labor work? What do they do?
3. Where do you get inputs for your farm/IPM practices?
4. Where do your crops go once they are harvested?
5. Where do you manage your money?
6. Where do you go for leisure?

B) Allow time for the respondent to draw the map in response to this prompt. Do not interrupt the mapping process, but when the respondent has finished drawing, ask him/her to label features on the map. If he/she cannot do this, have the assistant help label the map. Ask the respondent to present the map to you.

Ask the following questions if they are not answered during the respondent’s presentation of the map:

1. Who has access and control at each place and who provides the labor? Again, please indicate if they are women or men. (MARK A, C, and L, AT EACH SPACE ON THE MAP and utilize appropriate symbols of men and women).
   a. Focus on the following resources: ownership of land, on-farm activities, household activities, and migrated household members
2. Where does the money you earn from your crops go?
3. How do you get information about IPM? From whom (are they men or women)? Where?
4. With whom do you share information about IPM (are they men or women)? How? Where?

Use the map as a tool to build discussion about activities, household decision-making, and gendered spaces of work about IPM. Consider whether or not to take the map with you.
ADDITIONAL QUESTIONS (20 minutes):

The goal of this interview is to fill in the blanks from the other exercises and allow for unstructured conversation to get more information about any remaining questions. Note that if questions have already been asked in the other activities, you do not need to ask the questions again (unless it seems like the participant may provide different information). Ask the following questions as needed:

1. How well does the information or training you get fit your needs? For example, does the language, timing (time of day and length of training), and gender of trainers fit your needs?
2. What are the challenges to practicing IPM? What are the benefits?
3. What did you consider when adopting/not adopting IPM?
4. What challenges are you facing on your farm that IPM does not address?
5. Is there something that you feel you should tell me that I did not ask?

WRAP UP (10 minutes):

Ask if the respondent has any questions and answer them. Thank the respondent for taking the time to speak with you and answer these questions.

- If applicable:
  - Try to set up another time to come back and help them around their house/on their farm for participant observation and informal conversation
  - Take their photo as a gesture of reciprocity.
  - Provide another gift if picture is not possible or undesired.
Appendix D: Key Informant Questionnaire

ACTIVITY CODE:

TOTAL TIME: 1 hour

Roles:
1. Facilitator/Interviewer (Asks questions, takes notes)
2. Translator (Directly translates questions and responses)
3. Interviewee

Materials Needed:
- Pen
- Paper/Notepad
- Mapping paper/Drawing pad
- Copies of Consent Forms
- Camera
- Voice recorder

INTRODUCTIONS (10 minutes): Introduce yourself and any assistants working with you.

Introduction example:

Namaste, my name is Kaitlyn, and I am a student at Virginia Tech University. Thank you for making time for me today; I greatly appreciate it. As part of my studies, I am working with iDE to conduct research here in the Surkhet District about their integrated pest management project (IPM CRSP). I understand that iDE has been working in this area for several years now (about 3 years) on this project in partnership with Virginia Tech, and I am interested in understanding how IPM practices affect and are affected by gender roles and expectations in Surkhet. This is my translator [insert name], and we are here to learn from you about the key activities, actors, and history about IPM in the Surkhet District.

PART ONE:

C) Informed Consent (5 minutes)

Complete consent form (separate document) according to respondent. Check when completed

D) Basic Information (5 minutes)

21. Name: _____________________________________________________________
22. Age: ________
23. Sex: ________
READ THE FOLLOWING PROMPT TO INTRODUCE THE ACTIVITIES:

This research will involve two activities:

1) A timeline exercise where we will ask you to tell us about the introduction of IPM-IL and changes in the project/in Surkhet since it was introduced;
2) Additional questions about your involvement with IPM-IL and its agricultural implications.

TIMELINE (20 minutes):
Draw a full line across the sheet of paper or flip chart. Ask the following questions and allow the respondent to draw on the line, assisting and guiding as needed.

6. What is the timeline of the IPM-IL project in the Surkhet District?
7. What is your role along this timeline?
8. What changes have you noticed in the area?
9. What is IPM used for in this area?

ADDITIONAL QUESTIONS (20 minutes):

The goal of this interview is to fill in the blanks from the other exercises and allow for unstructured conversation to get more information about any remaining questions. Note that if questions have already been asked in the other activities, you do not need to ask the questions again (unless it seems like the participant may provide different information). Ask the following questions as needed:

6. What are the challenges and benefits of the IPM-IL project in Surkhet?
7. How effective do you feel the IPM trainings are? Why or why not?
8. What have been the greatest successes of this project in Surkhet? What have been the greatest failures?

9. How does male out-migration affect the adoption of IPM practices in this area?

10. How do men and women practice IPM differently?

11. How do men and women attend/participate in trainings differently?

WRAP UP (10 minutes):

Ask if the respondent has any questions and answer them. Thank the respondent for taking the time to speak with you and answer these questions.

- **If applicable:**
  - Take their photo as a gesture of reciprocity.
  - Provide another gift if picture is not possible or undesired.
Appendix E: FGD Guide

This document is meant to serve as a guide for qualitative gender research for the IPM-IL in Nepal.

Please note that we would like to have participants in the FGD that are not represented in Kaitlyn’s household surveys so that we cover a larger number of people in this study.

TOTAL TIME: 2-3 hours

It is better to do focus groups with women-only or men-only at different times so the same research team is working with each and results are more comparable.

Participants in Focus Groups should be equal numbers in the men’s and women’s groups (5 – 10 each); they should be held at different times and include young as well as old, and people of different status/wealth level. The participants should be purposely selected based on the potential quality of their contributions and ability to participate. The community or association should be informed that both the men and women’s groups need to include someone who can write. The research team should include men and women, with a minimum of 3 to cover the roles below. Time is fluid; the following can be done in approximately three hours. This time includes ten minutes to distribute drinks and snacks. Elements such as level of education, facilities, and community’s prior experience working with NGOs and similar activities allows things to move more quickly.

The most important thing is to use this chart as a guide and to be FLEXIBLE and respond to the situation— particularly depending on when activities actually get started and when participants begin to show weariness and lag in participation. It is better to take time to introduce key concepts and give clear instructions, and to have time for discussion after presentations, than to rush and obtain incomplete or contradictory information and leave processes unfinished. Do not ask leading questions that put words in respondents’ mouths; the exercises below are especially intended to allow farmers to describe their world from their point of view. Use prompt questions below, then be quiet, wait, and listen to the participants’ response. Note that women may need more time than men for some activities. The facilitator must play an active role encouraging everyone’s participation, often requiring s/he tactfully restrain a dominant speaker; for this it is helpful to state at the beginning that we want to hear from everybody in the group. Encourage less vocal group members to be active contributors.

BE SURE THE TRANSLATOR UNDERSTANDS THAT THEY SHOULD TRANSLATE THE DISCUSSION, NOT JUST SUMMARIZE. NOTETAKERS SHOULD TAKE DIRECT QUOTES OF KEY DESCRIPTIONS.

Three or four people need to assist with each FGD (preferably including at least one man for men’s FGDs).

Roles:
1. Researcher/Facilitator (MEC and Kaitlyn)
2. 1 Translator – Lina
3. Note-Taker (this is a VERY important role). The note-taker will need to type up notes afterwards – CBF at each site
4. Observer/photographer (also takes notes when possible when possible including observations of group dynamics) – Chokra Rai

Materials Needed:
2 Flip charts (Fill out questions for each activity in advance—see Questions and Activity chart for some activities filled out and lots of extra lines
Chairs or mats
Tape, string, or other material to hold flipchart
Markers (in different, bright colors) for participants (MEC will bring these)
Black permanent markers for scribes
Notebooks and pencils for research team
Copies of Consent Forms
Code chart
Food and drinks
The chart below depicts an approximately 3-hour session. Be prepared to adapt. Post an agenda of planned activities if possible.

<table>
<thead>
<tr>
<th>Time and format</th>
<th>Activity Description</th>
<th>Prompt Questions &amp; Guidance</th>
<th>Data Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 min</td>
<td><strong>Preliminaries</strong></td>
<td>This is a research project: Introduce IPM IL project, previous relationship with research institutions, community’s relationship with the team, and plans for future collaboration: “This is an opportunity for researchers and scientists to learn from you.” Also explain: “We are here to understand how IPM has affected your agricultural practices and household roles.”</td>
<td>Head count</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Explain the activities for today:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Describe the challenges and benefits of IPM and how these are different for men and women.</td>
<td>Initial sense of gender in community; gets day on track and helps all understand and carry out later exercises</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Make a timeline of changes in IPM and migration and how these have affected gender roles.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Map spaces of IPM information exchange and how these are gendered.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Socioeconomic activity and gender division of labor chart</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Read IRB and get group to vote with their hands if they agree</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>[If time permits]</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Who knows the meaning of the word gender?</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>How is it different from sex?</strong></td>
<td></td>
</tr>
</tbody>
</table>

Read IRB Verbal Consent Form and make sure everyone agrees to participate and have their picture taken.

Count participants. Explain numbers matter but gender is more than counting bodies; gender considers differences in men’s and women’s roles, assets, priorities, constraints and more.

It is important to have selected for a diverse group representative of the community, including old, young, women, men, and different ethnic groups and social status. Aim for quality.

[If time permits: brief discussion on gender and how gender roles have changed.]

Stress that IPM-IL seeks equity in participation and benefits between gender relations.

Also stress that we want to hear from everybody present and not just a few.
<table>
<thead>
<tr>
<th>Time and format</th>
<th>Activity Description</th>
<th>Prompt Questions &amp; Guidance</th>
<th>Data Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Gender: Social construction of what is expected of, allowed and valued in a woman or man in a given culture, context, time and/or location.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>As opposed to sex: Biological differences between men and women.</td>
<td></td>
</tr>
<tr>
<td>15 min</td>
<td><strong>Exercise #1: Opening Question(s)</strong></td>
<td>Encourage everyone's participation. Write questions on flip chart paper (See Exercise 1 in Appendix B). Have a participant or facilitator write answers on the flip chart.</td>
<td>Perceptions about and experiences with IPM practices.</td>
</tr>
<tr>
<td></td>
<td>“What are the challenges and benefits of IPM?”</td>
<td>“What are the roles of men and women in practicing IPM?”</td>
<td></td>
</tr>
<tr>
<td>45 min</td>
<td><strong>Exercise #2: Timeline</strong></td>
<td>Use only the questions on the right. Do not guide conversations. Listen. (Post questions on flip chart paper. Have another sheet or two of flip chart paper for drawing the timeline). Write questions on flip chart paper (See Exercise 2 in Appendix B). Good note-takers from research teams in each group are essential. <strong>Draw a line across the page with 2074 (Nepali calendar) at the end.</strong> <strong>Note-Taker:</strong> Record exact words used in quotes and do the same as HH activities. Keep in mind that this is to show <strong>when</strong> these changes have occurred</td>
<td>Documentation of how farmers perceive changes affecting men and women differently, including gender impacts of IPM</td>
</tr>
</tbody>
</table>
|            | “How have things changed for men and women over your lifetime?” | **Follow-up questions:**  
- What are men/women involved in now? Has this changed in your lifetime?  
- What has caused these changes? When did you start noticing these changes?  
- “How has agriculture changed over your lifetime and have these impacted men and women differently?” **Follow-up questions:**  
  - When did men start migrating for work?  
  - When did people first start joining savings and credit groups?  
  - When did your farmer group begin?  
  - Did you start using any new |
<table>
<thead>
<tr>
<th>Time and format</th>
<th>Activity Description</th>
<th>Prompt Questions &amp; Guidance</th>
<th>Data Collected</th>
</tr>
</thead>
</table>
| 45 min | **Exercise #3: Map spaces of IPM information exchange and how these are gendered.**  
(See Exercise 3 in Appendix B).  
**Part 1: (15 min)** Explain the exercise and draw example on flip chart. Say you do not need to be an artist to do this and give an example of a badly drawn tree. Draw basic components of the value chain and draw symbols for women and men. (Agree in advance with team what symbols they are used to using.)  
**Part 2: Mapping (30 min)**  
"You do not need to be an artist to do this exercise. We want everyone to contribute to drawing a map so that we can understand where all of you learn about and share information about IPM."
"Draw the spaces in your community that you learn about IPM, practice IPM, and where/with whom (men or women?) you share IPM knowledge."
**Follow-up questions:**  
"Where do you attend trainings?"
"Where do you get your IPM inputs?"
"Where do you discuss IPM with people in your community?"
"With whom do you discuss IPM with outside your community? Where are they located?"
| Places where IPM practices are learned and shared?  
Understand if women’s sharing/social networks are different than men?  
Gauge mapping ability |

Distribute snacks (can take 10 min)
<table>
<thead>
<tr>
<th>Time and format</th>
<th>Activity Description</th>
<th>Prompt Questions &amp; Guidance</th>
<th>Data Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 min</td>
<td><strong>Exercise #4: Socioeconomic activity and gender division of labor</strong>&lt;br&gt;Chart the activities and roles of men and women in both productive and reproductive spheres. Raise awareness on importance of factoring in reproductive activities as supporting productive ones and noting the gender division of labor.&lt;br&gt;&lt;br&gt;<strong>Use the Socioeconomic activity and gender division of labor chart attached</strong>&lt;br&gt;&lt;br&gt;<strong>Productive work:</strong> This includes paid and unpaid labor, i.e. work done for remuneration, in cash or kind (ex: wage labor, farming, selling at market, crafts)&lt;br&gt;&lt;br&gt;<strong>Reproductive work:</strong> This includes household work, such as childbearing and rearing, domestic tasks that guarantee the maintenance and reproduction of the future and current workforce (ex: cooking, cleaning, etc.);&lt;br&gt;&lt;br&gt;This also includes community work that are non-paid activities carried out for common good.&lt;br&gt;&lt;br&gt;<strong>Leisure and Education:</strong> activities that occupy non-working time.&lt;br&gt;&lt;br&gt;Have a list of activities they might suggest and begin filling out chart during discussion.&lt;br&gt;&lt;br&gt;Decide with the team in advance whether or not to pre-fill some activities.&lt;br&gt;&lt;br&gt;“List activities that you spend time on and who does what?”&lt;br&gt;&lt;br&gt;Only men&lt;br&gt;&lt;br&gt;Men with the help of women&lt;br&gt;&lt;br&gt;Both men and women equally&lt;br&gt;&lt;br&gt;Women with the help of men&lt;br&gt;&lt;br&gt;Only women&lt;br&gt;&lt;br&gt;Children</td>
<td>An understanding of who does what, the division of labor in productive, reproductive, and leisure/education activities&lt;br&gt;&lt;br&gt;Recognition of contribution of women’s reproductive activities and how reproductive activities support productive ones&lt;br&gt;&lt;br&gt;List of activities and qualitative data on gender roles that may be relevant to IPM&lt;br&gt;&lt;br&gt;Note which activities are listed under reproductive because they are in the household or garden but are in fact productive&lt;br&lt;br&gt;Data to help identify gender-based constraints</td>
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<tr>
<td>Time and format</td>
<td>Activity Description</td>
<td>Prompt Questions &amp; Guidance</td>
<td>Data Collected</td>
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<td>10 min</td>
<td>Closing and Thanks:</td>
<td>1. Questions for research team?</td>
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<td></td>
<td>Researchers explain future IPM IL activities.</td>
<td>2. Questions we left out that are important?/Anything more you want to tell us?</td>
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<td></td>
<td>Answer questions (need technical people in team to be able to answer IPM questions)</td>
<td>3. Next steps and thanks.</td>
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<td>Take photos?</td>
<td>Participants have opportunity to ask questions</td>
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</tbody>
</table>

Questions for FGD Activities  
(Use different page for each exercise)

Informed Consent (5 minutes)

Complete consent form (separate document). Check when completed

Introduction:
What is the difference between sex and gender?

Exercise 1: Opening Question
“What are the challenges and benefits of IPM?”
“How is this different for men and women?”

Exercise 2: Timeline
“How have things changed for men and women over your lifetime?
• What are men/women involved in now? Has this changed in your lifetime?
• What has caused these changes? When did you start noticing these changes?
• What are some things that have changed?

“How has agriculture changed over your lifetime and have these impacted men and women differently?”
• When did men start migrating for work?
• When did people first start joining savings and credit groups?
• When did your farmer group begin?
• Did you start using any new technologies before IPM? When?

Exercise 3: Mapping spaces of IPM practices and decision-making

“Draw the spaces in your community that you learn about IPM, practice IPM, and where/with
whom you share IPM knowledge.”

- “Where do you attend trainings?”
- “Where do you get your IPM inputs?”
- “Where do you discuss IPM with people in your community?”
- “With whom do you discuss IPM with outside your community? Where are they located?”

Exercise 4: Socioeconomic activity chart (make ahead on flip chart paper and add extra rows)

FGD Activity Chart
Code:

O: Woman response       X: Man response

Socioeconomic activity chart and gendered division of labor

<table>
<thead>
<tr>
<th>Socio-economic Activities</th>
<th>Only men</th>
<th>Men with the help of women</th>
<th>Both men and women equally</th>
<th>Women with the help of men</th>
<th>Only women</th>
<th>Children</th>
<th>Observations (Time, place, season, etc.)</th>
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<tbody>
<tr>
<td><strong>Productive work</strong></td>
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<td><strong>Unpaid</strong></td>
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<td>Getting/purchasing seeds</td>
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<td>Getting/purchasing IPM inputs</td>
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<td>Spraying chemical pesticides</td>
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<td>Spraying bio-pesticides</td>
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<td>Mixing local johlmul</td>
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<td>Mixing Trichoderma with soil</td>
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<td>Applying fertilizer</td>
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<td>Cutting vegetables from field</td>
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<td>Socio-economic Activities</td>
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<td>Both men and women equally</td>
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<td>Only women</td>
<td>Children</td>
<td>Observations (Time, place, season, etc.)</td>
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<td>Harvesting crop (wheat or paddy)</td>
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<td>Taking veg to collection center</td>
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<td>Collecting fodder for livestock</td>
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<td>Taking care of livestock</td>
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<td>Ploughing the field</td>
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<td><strong>Paid</strong></td>
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<td>Plough the field (hired labor)</td>
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<td>Transplanting crops</td>
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<td>Harvesting crops</td>
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<td>Performing “Dharmi Jharki”</td>
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<td><strong>Household (reproductive) work</strong></td>
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<td>Caring for children</td>
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<td>Cooking at home</td>
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<td>Laundry</td>
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<td>Dish washing</td>
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<td>Cleaning the house</td>
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<td>Go to market for household goods</td>
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<td>Managing household expenses</td>
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<td>Deciding to take out a loan</td>
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<tr>
<td>Socio-economic Activities</td>
<td>Only men</td>
<td>Men with the help of women</td>
<td>Both men and women equally</td>
<td>Women with the help of men</td>
<td>Only women</td>
<td>Children</td>
<td>Observations (Time, place, season, etc.)</td>
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<td>Managing household savings</td>
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<td>Collecting water from tap</td>
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<td>Collecting water during dry season</td>
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<td>Voting in local elections</td>
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<td>Attending farmer cooperative meetings</td>
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<td>Attending savings and credit groups</td>
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<td>Attending IPM trainings</td>
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<td><strong>Leisure and Education</strong></td>
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<td>Watching TV</td>
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<td>Sewing mats</td>
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<td>Visiting relatives</td>
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<td>Sewing “doko” baskets</td>
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<td>Taking a nap</td>
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<td>Going to town</td>
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<td>Drinking beer/alcohol</td>
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<td>Attending weddings</td>
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<td>Going fishing/swimming in</td>
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</tbody>
</table>
### Socio-economic Activities

<table>
<thead>
<tr>
<th>Only men</th>
<th>Men with the help of women</th>
<th>Both men and women equally</th>
<th>Women with the help of men</th>
<th>Only women</th>
<th>Children</th>
<th>Observations (Time, place, season, etc.)</th>
</tr>
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<td>Playing cards</td>
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### Appendix F: IRB Verbal Consent Form

**VERBAL CONSENT FORM (IPM-IL Nepal Gender Research)**

*The researchers will read all non-italicized words to the research participant.*

The purpose of this meeting is to learn about your experience with pest management, crop production, processing, and sale. We will be discussing with you and observing activities of the social relations involved in this work. Therefore we would like to ask for your participation in a:

**FOCUS GROUP DISCUSSION**  INTERVIEW  *circle the activity that applies*

The goal of this study is to identify factors that might improve pest management technologies, crop production, processing, and sale, and thus quality of life, for people living in this area. To be clear, the project itself is only for research purposes and will not directly implement any programs or changes. Participating in this study cannot harm you in any way. There are no consequences for not participating in this study. We will keep your identity confidential if you prefer; we will not share it with anyone outside of the research team without your permission. There is no compensation for this research. If you choose to participate in this study, you are free to not answer questions and to withdraw from the study at any time without penalty.

Do you have any questions about the purpose of or the activities involved in this study?

*Make note of and answer questions asked.*

Are you willing to participate in this study?

*If respondent declines, thank him/her for their time, mark the box below and move on to the next household or individual. If they accept, record the participant's code name along with the date of the interview.*

- Respondent declined to participate in the study.
- Respondent agreed to participate in the study.
If participant agrees to participate and is interviewed

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respondent agreed to have interview recorded</td>
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</tr>
<tr>
<td>Respondent does not agree to have interview recorded</td>
<td></td>
</tr>
</tbody>
</table>

Subject Code Name________________________________________________________

Date __________