NEXUS BETWEEN AGRICULTURAL TRANSITION, FEMINIZATION OF AGRICULTURE, AND WOMEN'S EMPOWERMENT IN NEPAL

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ABSTRACT

Examining the nature of the feminization of agriculture, and factors influencing the phenomenon in citrus producing pocket areas of Sindhuli district in Central Nepal, the study unravels gender based social norms and practices prevalent in the contemporary agrarian society. Given the debates and arguments presented by feminization and women's empowerment scholars, the study has been embedded within a broader agricultural background by contextualizing agriculture in a multi-functional transition model. The multi-functional agrarian transition has however been limited in its scope within four dominant agricultural production domain, namely cereal, citrus, livestock and vegetables.

The overall research design used to understand social change, mainly changes brought about in gender relations as a result of citrus plantation, uses a transformatory research design with mixed-method approach. The micro-level case analysis includes of

an in-depth study of the three phenomenon, namely agricultural transition, feminization of agriculture, and women's empowerment in agriculture. Using ethnography as a research approach, this study has applied different tools including of participant observation, key informant interviews, narrative interviews, and questionnaire survey to collect data from the field. With multiple periods of ethnographic fieldwork, different data collection tools have been used concurrently. Questionnaire survey has been used to collect data on the labour force participation by sex to gather numerical and measurable accounts of women's involvement in agriculture. Decision-making as a proxy for women's empowerment also includes of survey data. A total of 140 households were purposively selected using cluster-sampling technique. In order to gather more detailed qualitative information on feminization of agriculture and women's empowerment that supports meaning making of the survey data, twenty biographic narrative interviews were conducted with women farmers using heterogeneous sampling technique. Secondary source of information on membership detail of women and men in citrus cooperative has also been used.

Feminization of agriculture has been explored by analyzing labour force participation rate of male and female, task-based division of labour, and how different tasks under each production domain have become gendered. Presenting the intra-household division of work in agriculture three categories of households based on labour arrangement in rural farms were identified. Unlike few strictly defined work for man and woman in cereal crop production, other agricultural work are culturally gender neutral. It is within this flexibility of work, that this study has portrayed how varied degrees of market orientation in a mixed-farming system changes household labour, exchange labour and wage labour relationship. Labour as a resource presents a gendered pattern of the value of labour, with men's contribution of labour being valued differently than that of women's in each production domain of agriculture. Gender based-inequalities in labour use can be interpreted as having the power to reinforce and intensify the existing gender roles, with women being encouraged to participate in traditional work, while mostly men being integrated into the new works in the labour market created by citrus. In order to understand feminization beyond the rationale of male outmigration and male non-agricultural employment, the study portrays different categories of feminization based on women's labour concentration in cash crop vis-à-vis other types of agricultural crop/livestock with varying degree of market-orientation. The study shows multitude

conditions of feminization in one hand, and on the other presents situation whereby feminization of one category may not necessarily result in feminization of another category of agricultural production. It also highlights task-based feminization of work; especially those considered as an extension of traditional agricultural work that did not need much supervision nor did it require substantial instruction.

Emerging themes from narratives of women farmers' lived-experiences has been used to examine women's empowerment in agriculture. First, the intra-household decision-making regarding each production domain has been comprehended by considering the value of each crop/livestock within a broader agricultural space in the study site. Thus, gender hierarchy in decision-making of four domains of agricultural production is further analyzed to understand women's subordination in the citrus domain although women mostly held decision-making positions in other domains of production. Female to male ratio of decision-making provides a glimpse on how women are positioned within the decision-making of cereal, vegetable, citrus and livestock production. Finally, the study analyses other resources such as land, labour, income, social networks and human mobility that are linked with production of these four domains in a mixed-farming system. Each resource has been assessed to understand how women have or have not been able to use or have control over these resources by challenging the existing gender norms that subordinate women over men. Household members' everyday lifestyles regarding the changing opportunities in agriculture and non-agriculture have been presented as influencing the current social arrangement that shape men and women's lives differently. Both feminization and empowerment is understood as a social process, which is constantly in flux.

APPROVAL OF THE DISSERTATION

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DEDICATION

This dissertation is dedicated to the memory of my beloved friend and brother Ayush Malla, without whom I would not have been here to complete this piece of work. You will always be remembered.

DECLARATION

I hereby declare that this dissertation has not been submitted for candidature for any other degree.

I understand that my dissertation will become part of the permanent collection of Kathmandu University Library. My signature below authorizes release of my dissertation to any reader upon request.

Hritika Rana Date: 5th March 2019

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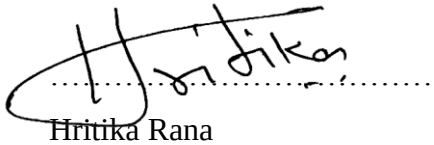

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GLOSSARY

Aali	Raised soil surface or bunds that holds water for irrigation
Adhabaisey	Middle-aged people
Adhiya	Share-cropping practice where the total harvest is shared between the landowner and the tiller, usually on a fifty-fifty basis
Baachcha	Male calf
Baathi	Smart
Baina	Advance fee for procurement
Baosey	Special type of male labourer who does leveling of the field to give a final touch before transplanting rice seedlings
Bari	Upland agricultural land
Bazaar	Market
Bazaarikaran	Market oriented
Bhaiharu	Brothers, usually younger brother
Bhogchalan	Use of land
Biju biruwa	Plants grown out of seeds
Bikas	Development
Bikase mal	Chemical fertilizer
Bishwakarma	Occupational dalit caste in Nepal who works on metals
Bua-Chora	Father-Son
Chhar-chhimek	Neighbourhood
Chetra	Area (geographical coverage)
Chuna	Agricultural lime
Daana	Piece of grain or fruit

Dai-Bhai	Elder brother-Younger brother
Dall	Seedbeds
Dalal	Commission agent; used as a derogatory term to refer to traders
Dashain	Hindu festival celebrated usually during late September and early October
Dhakrey	A derogatory term used to refer to porters
Dhoti	Loincloth worn mostly by Hindu men
Dhuwani	Transport
Doko	Traditional bamboo basket
Duluwa [hid-dul]	Person who moves from place to place or circular mobility
Dyang	Ridge made for cultivation of vegetables
Gaupalika	Rural municipality; the lowest administrative division in Nepal that was newly formed after dissolving the existing VDCs
Ghaiya	Direct seeded dryland rice variety suitable for upland
Ghar byawahar	Word used to denote household affairs including of household chores, and resource management as well as maintaining relationships with family, extended family, guests and neighbors
Gheu	Clarified butter
Gothalas/Gothalo	Livestock herders
Haat	Flea market
Hal	An oxen pair
Hali/haliya	Person who ploughs the agricultural field with an oxen pair
Halo-Juwa	Plough and Yoke, traditional agricultural tools used in Nepal
Hayu	People of Kirant origin, considered as marginalized communities of Nepal
Hid-dul	Human mobility and movement from one place to another

Hundi	Pre-harvest contract; a system of selling the entire harvest from the orchard
Jamani	Person who guarantees repayment of loan or any other payment
Jan	Literally means population or people, and is used to describe labour need and labour availability
Jan lagaune	Use labour
Jharpat ukhalney	Weed out unnecessary plants
Junar	Sweet orange (*Citrus sinensis Osbeck*)
Jyala	Wage
Kaka-Bhatij	Uncle-Nephew
Kami	Occupational dalit caste in Nepal who works on metals
Keta [also thitta]	Boys
Khet	Lowland irrigated fields, especially suitable for paddy
Koseli	Gift
Kudo	Cooked livestock feed
Kuto-Kodalo	Tools used for tillage
Lathey	Men labourers who assist in the preparation of land for plantation and construction or raising bunds or *aali* that holds water for irrigation, and beat large soil clods when needed
Mahilaharu	Females
Maita/Maiti	Women's birth home or paternal home
Masu bhat	Meat and rice
Mela-pat (mela)	Participation in agricultural work by taking turns to work on each other's field, usually without wage; however the term is also used widely in the study site to suggest wage labour;
Mit	Bonded friendship
Mohi	Buttermilk

Mukhiya	Chief of the village
Nani	Female child
Nirwahamukhi	Subsistence (farming)
Niryatmukhi'	Export-oriented (farming)
Pada	Male calf of buffalo
Paathi	Volume of measurement, approx. 3.2 kg of grain; 1 *paathi* is equivalent to 8 *manas*
Pakhuri satney	Exchange labour
Parma	System of labour exchange between neighbors and extended families
Purush	Men, mostly middle-aged people
Ropai	Paddy Transplantation
Ropar	Plantation labourers, especially women
Saamaan	Goods
Sanibaare Haat	Saturday flea market
Suntala	Orange (Citrus reticulate)
Thekka/Thekka-patta	Contract
Thela	Push-cart
Tihar	Hindu festival celebrated after *Dashain*, usually falls in September to October

ACRONYMS AND ABBREVIATIONS

ADS	Agriculture Development Strategy
APP	Agriculture Perspective Plan
BNIM	Biographic Narrative Interpretive Method
CBS	Central Bureau of Statistics
CPA	Citrus Producing Areas
DADO	District Agriculture Development Office
DCCI	District Chamber of Commerce and Industries
DJCA	District *Junar* Cooperative Association
EU	European Union
FAO	Food and Agriculture Organization
FNCCI	Federation of Nepalese Chambers of Commerce and Industries
GDP	Gross Domestic Product
HDP	Horticulture Development Project
ICIMOD	International Centre for Integrated Mountain Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
JADP	Janakpur Agriculture Development Project
JICA	Japan International Cooperation Agency
KII	Key Informant Interview
LFPR	Labour Force Participation Ratio (Rate)
MEDEP/UNDP	Micro Enterprise Development Program/United Nations Development Programme

MOAC	Ministry of Agriculture and Cooperative
MOAD	Ministry of Agricultural Development
MOLE	Ministry of Labour and Employment
MFA	Ministry of Food and Agriculture
MOF	Ministry of Finance
MOU	Memorandum of Understanding
MWP	Market Work Participation
NARC	Nepal Agricultural Research Council
NTAE	Non-Traditional Agriculture Export
OECD	Organization for Economic Co-operation and Development
OVOP	One Village One Product
PMAMP	Prime Minister Agriculture Modernization Project
SIGI	Social Institutions and Gender Index
SQUIN	Single Question Inducing Narratives
TKP	The Kathmandu Post
UNCTAD	United Nations Conference on Trade and Development
UK	United Kingdom
USA	United States of America
USD	United States Dollar
VDC	Village Development Committee
WEAI	Women's Empowerment in Agriculture Index
WTO	World Trade Organization

Nexus between Agricultural Transition, Feminization of Agriculture, and Women's Empowerment in Nepal

CHAPTER ONE

1. INTRODUCTION

The study is a socio-anthropological case analysis of a crop that has formed, deformed and transformed agrarian society in Sindhuli district along the mid-hill region of Nepal. It is a crop that has not only become a source of income, but is symbolic to local identity, pride and respect. *Junar*, which is widely known as sweet orange, is a particular species of citrus fruit (*Citrus sinensis Osbeck*) having an indigenous germplasm (Kaini, 1995), giving *Junar* a status of indigenous fruit of Nepal. How has *Junar* become and is still becoming a crop that has social implications beyond economic value is what the study explores vis-à-vis other types of agricultural crop/livestock that are also considered important with varying degree of market orientation in the study site. Amidst such agrarian context, the question of gender socialization as a result of an introduction of a single crop remains unexplored. The changes, if any, in terms of household labour use, wage labour relationship, and everyday life of those engaged in an agrarian lifestyle associated with citrus production in particular are what this study unravels. Despite focusing on change, the study also examines what has remained unchanged, thereby giving emphasis to both continuity as well as discontinuity, to critically examine gender relations that are strictly binding in one hand, and on the other somewhat flexible.

The aim of the study is to explore the nature of the feminization of agriculture amidst agrarian transition. Although the phenomenon of agrarian transition mostly deals with somewhat linear mode of transition from food to cash crop, or small-scale family farm to more capitalized forms of agriculture, this study has conceptualized agrarian transition as complex, non-linear and multi-functional in nature. Amidst such varied

dimensions of agrarian change, feminization of agriculture has been assessed in four production domains in a mixed-farming system that was prevalent in the study site. Borrowing the concept of multi-functional agriculture from Wilson (2007), these four domains of production — cereal, vegetable, livestock and citrus, are presented as each having a spectrum of multi-functional agricultural pathways. Varied spectrum of agricultural multi-functionality with productivism at one end and non-productivism on the other provides farmers with a wider set of decision-making opportunities, multiple occupation possibilities, and work-related agricultural identities. Given the diversity within agriculture, the phenomenon of feminization is, thus, explored by segregating four domains of production rather than viewing agriculture as a single entity. The way in which different farming and non-farming activities interrelate and influence each other within the agrarian rural space shows how feminization occurs in a multi-functional agricultural context. Feminization of agriculture has been explored by analyzing labour force participation rate of male and female, task-based division of labour, and how different tasks under each production domain have become gendered.

Another aspect of the study is to comprehend the phenomenon of women empowerment in agrarian transition. Women's empowerment concept is closely related to gender inequality that is prevalent in Nepalese society resulting in women's marginal status, invisibility in the economic sphere (see Galiè et al., 2013) and women's subordination. The impact of agricultural change, with national as well as local developmental priority emphasis on cash crop farming, with special focus on citrus farming is considered as a major factor in maintaining and sometimes exacerbating gender inequality, and often times influencing women's empowerment. Day to day lifestyle as well as seasonal farm practices that is gradually being molded as families and households shift towards citrus farming in a multi-functional agricultural context, thus, presents a case, in which women's empowerment in agriculture is explored. The study is theoretically anchored towards the three-dimensional model of empowerment as stipulated by Kabeer (1999, 2001, 2005). The three-dimensions — agency, resources and achievements, have provided an analytical space for examining the process of decision-making as part of an agency debate; availability of choices and opportunities in the use of land, labour, income, social network, and human mobility as resources; and changes, negotiation or transformation in gender status quo as achievements. The

interactions between these three dimensions in agricultural context have been crucial to examine the status of women empowerment in multi-functional agriculture.

1.1 Background

General understanding on which the study is based is that due to male out-migration and men's employment in non-agricultural sector in large numbers, women's involvement in agriculture is more vivid at both family farms as well as in the agricultural labor market. Agriculture sector employs almost two-third of the Nepal's economically active population aged above 10 years (Central Bureau of Statistics [CBS], 2013: 67). Out of 64 percent of the country's agricultural labor force, women constitute about fifty-one percent of the total labor. The number of men and women engaged in agriculture is only slightly different with forty-nine percent of men and fifty-one percent women. However, when the percentage of agricultural labour by gender is generated out of the total economically active male and female population engaged in different industry, then the male engagement in agriculture sector is only 54.48, whereas that of women is 76.60 percent. Similarly, in rural Nepal, 82.32 percent of economically active women and 62.82 percent of economically active men are engaged in agricultural activities (CBS, 2013: 67). Such variation in the participation of men and women in agriculture and other occupational sector shows gender inequality in terms of occupational engagement as well as opportunities available to them. The tendency of men getting engaged in other sectors besides agriculture is considered as a factor in increasing the number of women in household farm and labour market as well as increasing their workload in agriculture.

Empirical evidence on the other hand suggests increasing involvement of men in agriculture when they see the opportunity for higher cash income. Men's return into agriculture as a result of the introduction of a cash crop tends to marginalize women, increase their workload, and reduce their control over household resources (Acharya, 2000a: 535; Adhikari-Thapa, 2013). According to International Centre for Integrated Mountain Development [ICIMOD] data, women carry out 6.3 to 6.6 times the agricultural work than men (Nellemann and Hislop, 2011). Studies suggest that as women are generally involved in food preparation at home, they are more concerned

with production of food crops while cash crop production is taken over by men. Nevertheless, women still work in cash crop plots that are often managed by their male counterparts. Other researchers have also pointed towards limited involvement of women during the upsurge of growth-oriented development along with male biased strategies and intervention that hindered women's development (Gurung and Banskota, 1990; Gurung, 1995). Scholars suggest that large discrepancies in women's participation and gender unequal agrarian society in Nepal began with the advent of agricultural development and commercialization. Increasing number of women labourers especially in informal labour market, and lower tier of the work hierarchy has resulted in scholars questioning the structure in which the current social arrangement in agriculture has been established.

Even though there is a rise in unequal gendered society, current discourse on agriculture and development point towards the potentiality of commercializing agriculture in Nepal (Pyakuryal and Upreti, 2011: 14), and its contribution towards economic empowerment of women (Acharya, 2000a; Adhikari, 2008). Thus, agrarian transition can be considered as both an opportunity and a challenge for women. The structural arrangement in which agricultural change is taking place within the rural space, thus, influences the way women may be confined towards their stereotypical traditional role or break through the boundaries of social norms that govern the division of roles, responsibilities and resources between household members (Agarwal, 1997; cited in Gammage, Kabeer, and van der Meulan, 2016). Feminist inspired scholars have not only tried to look at how things are for women but have suggested to explore the conditions and social arrangements that has influenced the way in which gender inequality is created, maintained and/or transformed (Kabeer, 2001; Gammage et al., 2016).

1.2 Problem Statement

Although not strictly dichotomous in nature, the tendency of women's involvement in most occupations is more towards 'traditional, menial, non-skilled, informal, less lucrative, low wage' categories of work. Some scholars suggest that women tend to cluster in lower-paying jobs (Doss et al., 2011), and are often placed in

the less lucrative activities in the agricultural value chain (Elbehri and Lee, 2011). Kanji and Menon (2001) have further portrayed 'feminization of labor' in the rural agriculture sector, with examples of low-paid seasonal female employment in non-traditional horticultural products and cut flowers in Kenya and Zimbabwe, tobacco in Mozambique, and vanilla cultivation in Uganda. Similarly, Food and Agriculture Organization of the United Nations [FAO] (2010, 2011) has also highlighted women workers domination in value chains for high-value products, particularly in Africa and Latin America. The FAO report suggests that although women are increasingly active in the rural labor market, their share of household responsibilities is hardly shared or reduced. Some scholars assert that women's time constraint due to their family obligations by default allow them to work only part-time or on a seasonal basis that are typically low paid, limiting women's full labor capability. Some scholars argue that women often take up income generating activities when there is urgent household needs, such as debt payment or medical expenses (Whitehead, 2009). They suggest distress-driven character of the women's labor market, whereby women's participation in labour market is driven by survival needs, reflecting an increase rather than decrease in vulnerability (Elson, 2002). Raney et al. (2011), on the other hand, stated that while women continue to face occupational segregation and discrimination in rural labor markets, supply chains for export-oriented crops and agro- processing have created better-paying employment opportunities for women in many countries. In the same report, citing Deere (2005), and Maertens and Swinnen (2009), Raney affirms that although new jobs in export-oriented agro-industries may not employ men and women on equal terms, they often provide better opportunities and working conditions for women than existed within the confines of traditional agriculture. He further stated that such non-farm employment could be instruments of change with significant implications for women empowerment and rural development. Likewise, some researchers have highlighted women's improved social standing and widened choices as a result of increased paid work (Alam, 2012; Kabeer, 2012). In this view, Bieri (2011) pointed out that women's involvement in commercial agriculture is an important development factor, but it does not always translate into improvement in the social position of women.

The available literature hence presents two distinct types of labour use — one suggesting wage based labour market, and another as an intra-household division of

labour in agriculture. While these two are quite different in nature, each influences the other type of labour participation. Household workload, including of agricultural work affects women's economic (non) participation in the market, whereas income-earning opportunities could provide with the means to hire labour or replace purchased food in return for subsistence production. The intra-household agricultural work, which is arranged, based on gender based social norms is what (2010) has termed as the 'feminization of responsibility and obligations'. The term is used to stress on the gendered pattern of work within the household that confines women to stereotypical works that are non-paid. Within the agricultural context, some scholars also highlight on the relationship between a woman and a man as that of a labourer/worker and supervisor/manager respectively (Lastarria-Cornhiel, 2006). Some studies show that women take more managerial role when male migrate (Adhikari and Hobley, 2011), whereas some argue that managerial feminization may be occurring, but the key phases of agricultural marketing may still be under the control of men (Boochever, 2011).

In the context of Nepal, agricultural feminization is mostly associated with migration (Tamang, 2011; Gartaula, Niehof and Visser, 2012; Acharya, 2013a; Piotrowski, Ghimire and Rindfuss, 2013; Maharjan, Bauer, and Knerr, 2013; Tamang, Paudel, and Shrestha, 2014). Male out-migration and male off-farm employment are considered as the major reasons for the occurrence of the phenomenon. Armed conflict is another factor associated with increasing number of women in farm decision making and labour market (Advocacy Forum and International Center for Transitional Justice, 2010; Upreti, Ghale, and KC, 2016), pointing again towards men's mobility and migration. Backed by population census and labour census of the government (CBS, 2013), along with reports prepared by development agencies (World Bank, 2009; FAO, 2011), feminization of agriculture has been considered as an axiomatic statement. But this over-generalized packaging of feminization debate is problematic in the analysis of changing gendered patterns and farm dynamics in rural Nepal. Since the recent literature point towards the changing scenario of women's involvement in agriculture influenced by the agricultural transition (Adhikari and Hobley, 2011; Adhikari-Thapa, 2013; Tamang et al., 2014), there is a need for better understanding on women's participation due to the degree of market oriented crop production in a mixed-farming system. Gendered pattern of labour contribution observed in the mid hills of Nepal show labour

contribution of women in cash crop, but with no decision making power in such market-oriented crops (Adhikari-Thapa, 2013). These scholars suggest that men might return back to agriculture when they see the opportunity to earn more cash, resulting in de-feminization. Scholarly work that suggests engagement of men and women in agriculture based on crop marketability provides an opportunity to look at gendered opportunities and power dynamics in the changing agricultural context in Nepal.

1.3 Research Gap and Rationale of the Study

Women's role in agriculture is being duly noted in contemporary research and policies. Since Ester Boserup's 'Woman's role in economic development' was published in 1970, women's contribution to the agriculture sector is considered as critical in understanding the dichotomous role of development of and by farm women. From invisibility of women in agriculture to being aware of the gender gap in various aspects of the agricultural sector, women's role as independent food producers, wage earners, employers, managers, traders, entrepreneurs, and also extension service providers along with other associated functionalities within the domain of agriculture is being scrutinized. Discriminatory practices that have had a differential impact on the social and economic development of men and women have been the issue of present-day concern. Involvement of women in agriculture as well as their status within the changing agricultural context is however not fully captured.

Many studies have emphasized that the labour force statistics in the past have systematically excluded female labour by undervaluing, under-representing, under-counting woman's account of agricultural work (Acharya and Bennett, 1981; Dixon, 1982; Elson, 1999; Deere, 2005; FAO, 2011). Discrepancies in accounting women's work in agriculture labour force statistics survey has resulted in presenting decreasing involvement of women in agriculture, remarkably in Algeria, India, and substantial increase in Brazil (Dixon, 1982) and also in Nepal (Joshi, 2000). Studies on women's involvement in agriculture asserts that the misrepresentation of women's agricultural work has been accounted due to problems of definition, conceptualization of economic work as proposed in international guidelines and procedures that were used to understand labour force participation. FAO (2011) has also presented a debate on the critique of national labour force statistics that underestimate the contribution of work

done by women in agriculture, with some critic arguing that women are less likely to declare themselves as employed in agriculture, and are also less likely than men to define their activities as work. According to time-use surveys, female time use in agriculture varies widely depending on the crop and the phase of production cycle, type of activity, and other factors such as age and ethnic group of the women in question (FAO, 2011: 12). Unlike labour force statistics, time-use studies are more locally embedded and provide rich agricultural context in which men and women's role in agriculture can be understood. However, given the local variation and contextualized data, generalization of such data is not appropriate (FAO, 2011). One generalization drawn from such time-use survey was regarding women's time-allocation for food preparation, childcare and other household responsibilities, which provide women's time-constraint as compared to that of men.

Scholars suggest that while numerical statistical data on agricultural work and labour are crucial to understand women's work, complexities surrounded by women's market and home production roles, which was also portrayed by Boserup, has received less attention (Buvinic and Mehra, 1990). Dixon (1982) has also presented structural factors that influenced women's role, but have raised the need to turn towards cultural factors such as attitudes toward women's roles and norms that may explain differences between men and women in agriculture. She also stressed on the need to combine more detailed rural time-use surveys and intensive ethnographic studies to understand the sexual division of labour in agriculture in a variety of settings. Assessing agrarian transition and feminization of agriculture, de Schutter (2013) poignantly underlines that feminist theory has always been divided between recognition of a specific position of women either within the existing gender roles or to escape the constraints these roles currently impose. On one hand, removing all barriers and structural obstacles such as access to land, credit or labor market could enhance women's participation. But on the other, existing gender roles may increase women's workload and impede women's participation even if provided with equal market opportunities. Chant (2010) thereby argues that feminization of responsibility and obligations, which focus on shift of responsibility between genders should also be considered in analyzing the complex nature of gender experience in agriculture. Those seeking to switch to producing for the markets should have the possibility to do so through 'choice', and not by default or

through ‘distress-driven character of women’s labor market’ (Bieri, 2014). Likewise, Kabeer (2012) highlighted that the prospect for the empowerment increase with the degree of choice involved in women’s employment decisions. Issues raised by various scholars regarding women’s subordination, marginalization, increasing dependency, relatively decreasing status on one hand, and increasing income, economic independence, accumulation of assets, choices, empowerment on the other have become a scope of inquiry among scholars and policy makers to understand the situation of women in changing agrarian context.

In Nepal, number of research on the importance of cash crop farming and improved rural income has been loosely linked to women empowerment in Nepal (Gartaula et al., 2010; Adhikari-Thapa, 2013). Adhikari-Thapa (2013) has specifically focused on cash crop farming and gender in Kaski district, with the increasing shift from traditional farming to commercial cash crop farming. She observed that male participation increases with cash crop farming, while women are mainly involved in subsistence farming. Women tend to spend their labour time in men’s crop, while men hardly contribute their labour in women’s crop. In both cases, decision-making was with the male member of the household. In her study, citing Gautam (2011) she also highlighted how the shift in cash crop farming have affected food security in Illam, in both positive and negative ways, by uncovering women’s increased burden along with increased share of women on household income. Malapit et al. (2013) on the other hand has conducted a research using Women’s Empowerment in Agriculture Index (WEAI) to examine linkages between agriculture, nutrition and women empowerment in 16 districts of Nepal. Through WEAI, the study team has highlighted women empowerment in agriculture, and then examined the extent to which improvement in the underlying WEAI indicators can improve dietary diversity and nutritional outcomes for women and children.

A study on the feminization of agriculture as a result of male out-migration seeks to understand the links between feminization and empowerment (Gartaula et al., 2010). Their study shows how left behind women achieve greater autonomy in agriculture as they become the de facto head of household, but are constrained to make agricultural decisions if they are living with their in-laws. Highlighting on the patriarchal system in

which women are positioned, they suggests for clarity in studies related to the field of women and agriculture by assessing prevailing norms and social order. These scholars point towards the lack of substantial data on the subject matter, and assert that despite greater autonomy exercised by women in agriculture, their preferences may not be to remain in agriculture in the long run. On one hand, they suggests women as empowered as a result of autonomy and decision-making capability, and on the other hand, questions the very situation in which women are confined to farming, despite their aspiration to leave agricultural sector. Thus, in addition to numerical dimension of women's involvement in agriculture, there is also a need to gather in-depth analysis of gender-based practices and gender implication in a mixed-farming system. In-depth analysis of the three phenomenons — agricultural transition, feminization of agriculture and women empowerment is an area of study that needs further attention in Nepal.

1.4 Research Objective and Research Questions

Scholars suggest the need to probe deeper into whether women are managing the farms or their participation is limited to farm labour workers, whether women are involved only in staple crop production or also in cash crop production, whether they are involved only in the lower rung of value-chain or in every level of work segregation. These issues, along with the problematic issue of whether women work and men use the fruit of their labour has been a concern for many scholars dwelling into the phenomenon of agriculture feminization. Studying the nexus between agrarian transition, feminization and empowerment is thus necessary to identify social arrangement and norms that reinforce gender inequality, and often times push women in the less valued work that has been left behind by men. The general objective of the research is therefore to explore the agricultural transition from food crop to cash crop and its impact on the feminization of agriculture and empowerment of rural women in Nepal. It includes assessing the relationship between, feminization of agriculture, agriculture transition and empowerment of women in food crop and cash crop in Citrus Producing Areas of Sindhuli district.

Specific objectives of the research are as follows:

i. Identify the nature of feminization in food crop and cash crop;
ii. Examine conditions that promote or hinder women's entry and integration into food crop and cash crop;
iii. Investigate how women's involvement in food crop and cash crop affects their empowerment.

The research questions of the study are as follows:

i. What is the nature of feminization in food crop and cash crop production? From a gender perspective, who represents, participates and dominates in food crop and cash crop farming?
ii. What promotes or hinders women's entry and integration into these two types of agricultural crop production? How does socio-cultural factors affect women's participation in food crop and cash crop?
iii. What is the impact of agriculture transition on women empowerment in agriculture? Does woman involvement in food crop and cash crop reinforce/intensify existing gender roles or diminish it? Does it create new forms of dependence and subordination for women?

1.5 Overview of the Dissertation

This dissertation consists of seven chapters. Chapter One provides a general introduction of the research topic, problem statement of the research, along with research gaps and objective of the study. It also highlights the context of women in Nepalese agriculture and shows why there is a need to conduct in-depth analysis of gender-based practices and gender implication in a mixed-farming system.

Chapter Two presents a detailed review of the literatures conducted for the study. It highlights on the literatures related to the three phenomenons under study, agriculture transition, feminization of agriculture, and women's empowerment in agriculture. The concept of multi-functional agriculture as a transition framework is further presented as

a context to review feminization of agriculture and women's empowerment. This chapter also shows different criterions used to understand feminization of agriculture, and various ways in which empowerment has been operationalized. It also includes of review of scholarly works on feminization of agriculture and women's empowerment in agriculture in Nepal. Finally, the literature review section presents a conceptual framework on women's empowerment in multi-functional agriculture by borrowing Naila Kabeer's three inter-related dimensions of empowerment.

Chapter Three highlights on the methodologies used for the current study. It provides how the research has been designed under a transformatory research design using mixed-method approach. Using ethnography as a research approach, this chapter highlights on how different tools including of participant observation, key informant interviews, narrative interviews, and questionnaire survey has been used to collect data from the field. It also highlights on different sampling procedures, and research tools used for gathering different types of data necessary for understanding the research problem in question. It also provides limitations of the study and ethical considerations used throughout the study. The chapter also includes of the study profile and general characteristics of the survey households.

Chapter Four provides a contextual analysis of the agricultural space in the study site. It highlights study area as having a moderate multi-functionality with the practice of mixed farming system. It presents a context where crop prioritization with varied degree of market orientation has resulted in the existence of mixed-farming practice rather than one crop completely replacing the other crop. It then provides a synopsis of *Junar* development, a cash crop commodity that is transforming the agricultural context in the study site. It also highlights historical development of citrus along with major works, tasks and activities undertaken for citrus development. From historical preview to contemporary context of citrus orchard development, this chapter shows variations in agricultural practices associated with *Junar*. It presents a context in which the study on feminization and women empowerment in agriculture has been further explored.

Chapter Five presents the nature of feminization in the four-production domain of agriculture. It presents labour force participation rate of men and women in cereal,

citrus, livestock and vegetable farming. It also presents female to male ratio of labour in three categories of labour — household labour, exchange labour and wage labour. It also presents involvement of men and women in different activities under each production domain at intra-household level and in the wage market. Gender-based division of labour and task based breakdown of work by gender at intra-household and wage market is presented to show the nature of women's representation, participation and domination in a mixed-farming system.

Chapter Six shows the integration of men and women in the rural employment opportunity space that has been created especially by citrus market development. It presents how men and women have been able to grab the opportunity to engage in multiple occupations, mainly in agriculture. It also shows conditions that have promoted and hindered men's and women's entry and integration into four-production domain of agriculture. Using the three-interrelated dimensions of empowerment, the chapter highlights how women have been able to use the five resources — land, labour, income, social network, and human mobility, to either challenge or conform to the existing social structure that maintain women's subordination in a multi-functional agricultural context.

Chapter Seven contains conclusion and discussion of the major findings. It summarizes key findings and provides interpretation of the data by linking findings from different chapters. It also highlights some recommendation for future research.

CHAPTER TWO

2. REVIEW OF LITERATURE

This chapter presents the literatures that influenced and aided in building up theoretical and conceptual understanding that was deemed necessary for the study. It deals with the meaning of the phenomenon of agriculture transition from multi-disciplinary point of view. Instead of considering literature review only as a base, that is, review that precedes data collection and analysis, this chapter is a result of concurrent data analysis and review. Interpretation of field data, along with the effort to make sense of the data that emerged from the field has led to further search of literatures. Therefore, this chapter also elaborates on literatures reviewed to make sense of the data related to the phenomenon under question, especially regarding agrarian transition. The agrarian transition concept is hence theorized under the concept of 'multi-functionality', denoting multi-functional agricultural context in which the current study is based. It also highlights how gender fits into the transition of the agrarian landscape and how the transition affects gender relations. It is within this multi-functional agrarian space that the phenomenon of feminization of agriculture and empowerment has been placed. Review of literature mainly on the feminization of agriculture has been elaborated, with major focus on global literature on the phenomenon. It also presents how feminization has been understood and measured, along with various categories that have been used to comprehend the phenomenon. It also shows how feminization of agriculture and women's empowerment in agriculture issues has been explored in Nepal. Finally, the review section provides a comprehensive theoretical and conceptual understanding of the term empowerment and its usage, with special attention to literatures related to women empowerment in agriculture.

2.1 Agriculture Transition

Binary conceptualization of transition characterized subsistence and market-based production as two distinct categories within agriculture. Despite these two distinct

categories of agriculture, one farm family might have both the characteristics of subsistence and market-orientation. Subsistence crop is also occasionally sold in case of crop surplus or during a crisis, which results in household selling the crop initially produced for the purpose of consumption. Marketed surplus of subsistence crop is however different than that of market-oriented crop production as market crop is produced with the objective of selling rather than consumption, giving such crop a notion of cash crop as opposed to subsistence crop. As the aim of the study implies understanding feminization of agriculture and women empowerment in 'food crop and cash crop', 'crop' has been separated based on its initial function of providing food and another for cash. The simplistic notion of transition of traditional crop to high value cash crop was however not sufficient to comprehend the understanding of transition. The term 'transition' is understood as a process in which certain kind of change takes place. For the study, the change is therefore in terms of citrus crop production that has become a major cash crop in the study area. The assumption that citrus crop is taking over the farms with the objective of earning cash formed the context in which the study was embedded. However, citrus was not only planted for the purpose of cash, but for various other reasons. The reasons included of *Junar* as a gift, as a tree that changed the household landscape, and as a dietary supplement. Moreover, *Junar* orchard was also replaced by cereal crop at one point of time, which means that the transition was not linear but followed non-linear pathways. Given the complexities surrounding agriculture transition, the notion of agrarian transition, hereby, is anchored around concepts and theories, along with arguments built around multi-functionality of agriculture as stipulated by Wilson (2007).

Out of six basic models of transition portrayed by Wilson (2007) as shown in Table 2.1, the multi-functionality spectrum most closely resemble the Deleuzian transition model. All transition models focus on one-transitional pathways, except for the Deleuzian transition model that stresses on multiple vantage points, worldviews and interpretations. Criticizing uni-linear and binary conceptualization of transition, Wilson has advocated for the Deleuzian transition model, along with the application of combination of transition models to fully explain the phenomenon of agrarian transition, if necessary. Wilson has further stressed that transitions rarely follow linear pathways. The possibility of multiple and simultaneous decision-making pathways that provide

opportunities as well as constraints are deemed crucial to understand aspects of specific transition – i.e. agrarian transition in this study.

Table 2.1: Features of Idealized Transition Models

	Transition Models	Key Features of Each Transition Model		Pathway
1.	Linear Transition	Simple	Predictable, deterministic, linear, progressive with upward direction,	Point a to b (Uni-linear)
2.	Stepped Transition	Stable	Predictable, deterministic, linear, progressive with upward direction, one stable phase followed by another, revolutionary	Point a to b (Uni-linear)
3.	Random Transition	Chaotic	Unpredictable, non-deterministic, somewhat linear, non-directional, evolutionary	Point a to b (Uni-linear)
4.	Retrograde or Fail Transition	Stagnant	Unpredictable, non-deterministic, temporal linearity, non-directional, evolutionary, no real change occurs	Point a to b (Uni-linear)
5.	Deleuzian Transition	Complex	Unpredictable, non-deterministic, temporal non-linearity, non-directional, co-evolutionary,	Point a to b (Multiple/alternative)
6.	Non-transition	Steady	Timespan between point 'a' and point 'b' passes but nothing changes	Point a to b (Uni-linear)

Source: Wilson (2007)

Two terminologies productivist and non-productivist are central to understanding multi-functionality based on Wilson's transition theory. In his view, these concepts form a spectrum of different views that enable us to understand the multi-functional agriculture bounded by extreme pathways of productivism and non-productivism as a basis for conceptualizing multi-functionality (Wilson, 2007:79). Broadly, the term productivism is understood as output oriented to primarily increase food productivity under the drive of modernization, which was widely accepted and promoted through rural policy. This kind of productivity is characterized as environmentally destructive due to application of intensive farming techniques and biochemical inputs. Using farmland to its full potential to maximize production and farm modernization for mass production is the characteristics of productivism. Productivist institutional structures as identified by Wilson includes of structures such as agriculture ministries and farmers' unions that aid production maximization. Such mode of productivism is embedded within 20th century historical development pathways of agricultural change, as a

reaction towards food shortages after the Second World War (Wilson, 2007:80). As argued by Van der Ploeg and Roep (2003:39-40), 'until the 1990s, scale-enlargement, intensification, specialization, strong trend toward industrialization were the parameters that circumscribed developments in the agricultural sector' (Wilson, 2007:92). Agriculture transition was in that sense understood as a transition from subsistence to market based production with the aim of increasing productivity of crops for food security and also for cash.

Another term non-productivist, according to Wilson is a neutral term, rather than the opposite of productivist. The term is conceptualized as follows:

> "Non-productivist action and thought will be linked to high environmental sustainability, a tendency for local embeddedness, short food chains, low farming intensity and productivity, weak integration into the global capitalist market, a high degree of diversification, openminded farming and rural populations who see 'farming' and 'agriculture' as processes that go beyond productivism, and open-minded societies who accept that the nature of 'farming' and 'agriculture' is in the process of change" (Wilson, 2007: 175)

Wilson asserts that a non-productivism oriented transition might also take place without the sole intention of increasing productivity. He further suggests that both productivism and non-productivism could co-exist, without any necessary direction of change or distinctive boundaries. Any peasant household, locality or nation might encapsulate features associated with these terms. Thereby implying a more complex context, which can be understood by the Deleuzian transition model with co-existence of spatially heterogeneous and non-linear transition that supports a spectrum of decision-making possibilities. Multiple functions, multiple uses, multiple objectives as opposed to mono-functional agenda, i.e. cash or productivity, present a mixture of varied, competing and complementary uses of a single activity – hereby agriculture. While one of the basic agenda of agriculture is to provide food, agriculture serves a varied purpose rather than just the provision of food. Several scholars have asserted that developing countries have been slower to engage in debates on multi-functional agriculture, while the Food and Agriculture Organization (FAO) and the Organization for Economic Co-

operation and Development (OECD), the World Trade Organization (WTO) have played crucial role in recognizing and popularizing the term (Wilson, 2007). It is within these spectrums that Wilson borrows the concept of the Deleuzian transitional model to understand multiple development pathways within agrarian change. The concept of multi-functionality has been embedded within these two pathways of productivism and non-productivism.

According to OECD (2001), multi-functional agriculture was interpreted as a characteristic of an economic activity based on the agricultural production process and its outputs which produces multiple and interconnected results and effects (Wilson, 2007: 186). As interpreted by Wilson, OECD emphasized on production of food and fiber as the primary role of agriculture, along with other functions such as land conservation, maintenance of landscape structure, sustainable management of natural resources, biodiversity preservation, and contribution of socioeconomic viability and economic vibrancy of rural areas with focus on trade. According to Blandford and Boisvert (2002:107) multi-functionality refers to 'agriculture as a multi-output activity involving not only commodities, but also non-commodity outputs such as environmental benefits, landscape amenities and cultural heritage, which are not traded in organized markets' (Wilson, 2007:187). While Wilson acknowledges the positive/negative, intentional/unintentional, synergetic/conflictive, and market-value/non-market value aspects highlighted by previous definitions as essential for conceptualizing multi-functionality, he further elaborates the notion by criticizing earlier economists' definitions as being too narrow. He stresses that the earlier definitions have neglected intangible factors such as cultural, mental and attitudinal changes, as well as complex changes in society-agriculture interactions. Suggesting Byres (1995) work on agrarian transition, Wilson (2007) has also argued that historical narrative on agrarian transition has often provided multiple rather than single paths of transition. Borrowing from several scholars, Wilson stresses on multi-functionality as having implication for rural development linked with rural space, with the importance of social and cultural aspects of multi-functionality.

Irrespective of the origin of the theoretical concept of multi-functionality in the EU with predominance of policy-driven discourses, it is not a new concept in other part

of the world suggests Wilson. Moving beyond from the structuralist conceptualization of multi-functional agriculture in the 1990s, Wilson presents multi-faceted dimensions of the debate to capture a more holistic view of agrarian change. By linking multi-functionality, transition theory and the productivist/non-productivist boundaries of decision-making, Wilson re-defines 'agriculture' based on its multi-functionality. He suggests that agriculture has always been multi-functional in some way or the other, as it is an inherent aspect of agricultural activity that emerged since the emergence of the first agricultural societies. He further asserts that what has been lost is the conceptual clarity and empirical understanding regarding the issue of multi-functionality. Otherwise, all traditional farming systems are multi-functional in some ways. The spectrum of multi-functionality with productivism in one end and non-productivism on the other provides a normative basis on which multi-functionalities (weak, moderate and strong) could be understood using value judgments.

Weak, moderate and strong multi-functionality of agriculture within the rural space is depicted as the possibilities of agrarian transition (Wilson, 2009:229-232). He further stressed that while all farms may depict multi-functionality, those farms with weak multi-functionality may show mono-functional agricultural characteristics, but purely mono-functional system are unlikely to exist. Thereby, Wilson proposes for the use of research methodology that can investigate the transition in a case-by-case basis, rather than covering large scale for investigation that will result in less likelihood for positioning a given area along the multi-functional spectrum. His emphasis on individual household being in a high multi-functional spectrum while his/her neighbor under weak multi-functional spectrum provides a significant insight into the importance of decision-making made by the household irrespective of the political economy that influence agrarian transition. Deleuzian transition model therefore emphasizes on the structure-agency inconsistency in agrarian transition with emphasis on political economy at one hand, and individual decision-making as agency on the other.

Villamor et al. (2014) have also used the concept of multi-functionality in relation to rural landscapes decision-making. According to Villamor et al., landscape multi-functionality requires a better conceptual grasp of decision-making that incorporates the process of choosing between alternative options and processing

information concerning the expected outcomes of different options that are all gender specific. They point towards the importance of decision-making on the part of agents through a process, which also involves of a certain expected outcomes. Villamor et al. place such gender-based decision-making under the analytical framework of a 'dual economy' at the household level by emphasizing on both market participation and subsistence needs. Although the study does not provide enough empirical basis to validate the argument, the study provides ample literatures that suggest gender-specific behaviors within the multi-functional context. Revisiting Boserup's (1970) idea and empirical evidences on women in economic development, Kanji, Tan and Toulmin (2011) have also emphasized on the complexities and non-linear pathways of development, resulting in uneven growth and inequalities.

While the concept of multi-functionality associated with complexities and non-linear pathways are widely accepted in contemporary academic circle, these concepts are rather broad and difficult to encapsulate. These broadly defined transition concepts however provide a contextual space that could incorporate wider multiple factors influencing the transition as opposed to narrowly defined concept of transition. Transition from subsistence to market economy, or even the existence of dual economy is therefore considered as a part of multi-functional agricultural space, where transition from subsistence to market economy may form a part of agrarian change but which does not sum up the vast array of transition that may take place within the productive and non-productive spectrum of multi-functionality. Hence, the study considers the use of the term 'transition' as too narrow when associated with less productive, i.e. subsistence farming, to more productive, i.e. market oriented farming. Such a concept of transition focuses on one crop at a time, either through increase in productivity of the same crop, or through transition from crop A (subsistence crop) to Crop B (high-value crop). Such a transition model may not view transition of varying degree of crop/livestock production that is a part of mixed-farming system. Mixed-farming system is associated with complexity as it has a wide rage of multi-functional decision-making pathways open to farmers (Wilson, 2007: 245). Wilson asserts that within a mixed-farming system, one part of the food and fibre may have weak multi-functionality while the others might show tendencies of strong multi-functionality and high productivity. Given such variation, Wilson has further stated that moderately functioning farming system within

the multi-functional spectrum needs a case-by-case investigation due to its complexities. Pointing both towards the agricultural context as well as the methodological implication of studying a mixed-farming system, Wilson argues for a Deleuzian transition model as the most suitable transition model that could capture wide array of decision-making pathways bounded by productivist and non-productivist action and thought (Wilson, 2007: 300). The study will incorporate the debate on food crop and cash crop, in line with Wilson's debate on multi-functional agricultural spectrum.

2.2 Women's Role in Multi-functional Agrarian Transition

Although the argument of multi-functional agrarian space gives emphasis to both productivist and non-productivist spectrum of transition, agrarian transition has often been linked with capitalist mode of production (Hartmann, 1976; McMurry, 1992; Oya, 2007). Capitalism is associated with mass production, industrialization, and specialization that focuses on factory based production of goods through market labour as opposed to domestic industry that is supported mostly by family labour. Capitalization of agriculture, which is seen as a process of transition, is argued to have displaced women in agriculture (Hartmann, 1976). While women were freed from agriculture in England, Hartmann suggests that such transition was a result of higher importance given to men labourers in agriculture. Similarly McMurry (1992) asserts that women's role in dairy making in England was more prominent only within the broader agricultural context where male-dominated corn industry was valued over the dairy sector. McMurry (1992) argues that it may be the reason why women's position within dairy was protected, along with the traditional family system of cheesemaking that supported women's continued participation.

Analyzing the trend of women's work in agriculture from 1800 to 1930 in England and America, citing Ivy Pinchbeck (1930), Sally McMurry (1992) highlighted the creation of a new social category "Dairymen" as a result of the agricultural revolution that focused on specialization and enlargement of scale that curtailed women's participation in cheese production business. While the original work by Pinchbeck stressed on the shift from female occupation of dairymaid to that of a dairyman, McMurry argues that the role of women was still significant in cheesemaking

as farm wives who inherit cheese-making knowledge and who had a supervisory role in cheesemaking. Division of labour between men (outdoor) and women (indoor) with the task of milking shared by both was the norm, but the status of women within cheesemaking in England was substantial. Cultural norms and social practices retained women's near-monopoly of cheesemaking knowledge in England, whereas in America the market for cheesemaking was gradually shifted to factory operated system. Emergence of factories and scientific cheese manufacturing made men visible in cheesemaking. Access to formal education, which was enjoyed by men more than women, gradually became important and replaced traditional knowledge of women. However, the importance given to the cultural significance of dairying in Britain, retained women's continued interest in formal dairy education as opposed to that of the American dairy education which promoted men to get enrolled into agricultural colleges while women into home economics department.

Different patterns of female labour in the dairy as reflected by McMurry (1992) presents change in agrarian labour within the political economy of cheesemaking in England and America. She further asserts that English farms were more resistant to social transformation than American farms by the forces of capitalism within the dairy sector as English farm families had social history more than the American farms. While American women in dairy sector complained about the drudgery in cheese making, English farmwomen advocated for home cheesemaking although it required hard work. The sexual division of labour, which was more evident in English farm, and which was preserved through the process of cheese making gave English women a special status and respect. Such intangible factors, McMurry argues gave English women an incentive to practice home cheesemaking. 'Thus English dairy farmers *opposed* cheese factories for the same reasons their American counterparts *advocated* them' asserts McMurry. Gender based tradition and norms were thus the factors that could influence transition in varied ways. Enhancing productivity alone was not considered important by English cheese-makers. Women's dominance in cheesemaking in English farm resulted in reluctance, dissatisfaction and skepticism with mixing milk, and that of factory method, which undermined taste, and flavor of the cheese. Flavor was of less importance in American cheesemaking, as they valued immediate economic exchange over cultural and generational values.

Another aspect of transition as highlighted by Boserup (1970:52) presents a case in which Nigerian women resisted the introduction of new farming techniques that could change the land. In a region where land was considered as sacred, fear of losing one's land resulted in almost two thousand women to march in procession to occupy the market in protest. These events have been interpreted as caused by female to protect their right to cultivate their land. In addition, Boserup has also pointed that in many African regions, women refuse to help their husband in production of cash crops, unless they are paid wage for their work, or because they wish to cultivate food crop rather than cash crop. Women's preference to grow subsistence crop is considered important, and sometimes a hindrance in commercial production of crop. The cases presented by Boserup (1970) and McMurry (1992) shows two pathways in which change could happen, one is through shift away from traditional practices bounded by subsistence, and another through resistance to new change or capitalist mode of production. In one hand continuity of tradition may be questioned as limiting women's option, marginalizing women, women's subordination, and on the other such change may be considered as having an emancipatory output by providing women with new opportunities. However, when women themselves show resistance to such changes then the transition should be explored in ways that captures intangible factors that women value over productive measures. The concept of agency in choosing the path that one values either productive or non-productive thus becomes essential in understanding the role as well as status of women in multi-functional agricultural transition.

2.3 Feminization of Agriculture in Multi-functional Agriculture

The phenomenon of feminization, which have been considered as a global phenomenon, has gained prominent space within regional scholarly works which have further provided specific and distinct characteristics of feminization. Although, Boserup (1970) never used the term 'feminization' to denote [changing] gendered agricultural pattern, her emphasis on male and female farming systems with patterns of labour specialization has led scholars to acknowledge Boserup (Song et al., 2009; Jütting, Luci, and Morrisson, 2010). With reference to Boserup, Jütting et al. (2010) suggests that the increase in relative ratio of female to male employees in agriculture as a result of men leaving the agricultural sector for work in other sector is considered as the feminization

of agriculture. According to Boserup, both men and women produce food, but with either men or women domination alongside relatively little help from the opposite sex. Women engagement is denoted as female system of farming and more men engagement as male system of farming. This broad gendered category of farming system has been considered important to understand farming system based on tools used such as plough cultivation, to animal husbandry and draught power mainly in densely populated Asian villages rather than in lower population densities of African region (Boserup, 1970). Labour use in livestock rearing in Indian farms consisted of half the labour input by either male or female family members, while plough cultivation is considered as a factor for disappearing female system of farming (Boserup, 1970). However, such analysis has been considered as over-simplification (Kanji et al., 2011). As suggested by Boserup, the composition of agriculture labour force fluctuates with changing opportunities for agriculture transition from food to cash crop, or from traditional to modern farming. Based on her empirical evidence, the female system of farming in parts of Africa shifted to male system of farming, but less frequently from male to female system of farming, especially with introduction of ploughing and cash crop plantation by European colonizers (Boserup, 1970). The introduction of cash crop production therefore had a significant impact on work distribution in food and cash crop production, questioning the existence of the phenomenon of feminization of agriculture. However, clear definition of agriultural feminization is still missing (de Brauw et al., 2008). According to de Brauw et al., feminization can be understood in two ways, one as labour feminization and another as managerial feminization. Labour feminization occurs when women perform an increasing share of on-farm work within the household. Managerial feminization occurs when female become the primary decision-maker on the farm or when they gain greater access to agricultural income. De Brauw et al. suggest intra-household possibility of feminization, whereas many scholars also suggest feminization in terms of labour market (Deere 2005; Lastarria-Cornhiel, 2006; Radel et al., 2012) with focus on type of work within the labour market (Jütting et al., 2010).

In Latin America, Radel et al. (2012), Lastarria-Cornhiel (2006), and Deere (2005) have provided both conceptual understanding and empirical evidences suggesting feminization. Deere has suggested male migration, male employment in off-farm, and the need for rural households to diversify their livelihoods as the principal factor driving

feminization. In addition, she stresses on land shortages, economic crisis and policies that are unfavorable for domestic agriculture as factors that result in peasant households being unable to sustain their living through agricultural production alone. Deere thus argues for the need to diversify rural households' income generating opportunities. As a part of income diversification, Deere presents feminization in agricultural labour markets, especially regarding non-traditional agro-export production. Contextualizing feminization within the political economy, Deere has pointed towards exacerbating social and economic inequalities as a result of agricultural transition of peasant economy to that of non-traditional export crops such as oil seeds, livestock, vegetables and fruits. Within this backdrop, Deere suggests two distinct types of feminization (Deere, 2005:17; Lastarria-Cornhiel, 2006) — an increase in women's participation rates in the agricultural sector, either as self-employed or as agricultural wage workers; and an increase in the share of women in the agricultural labour force relative to men, either because more women are working and/or because fewer men are working in agriculture. Deere further highlights on the distinction made between household labour and/or permanent wage labour, especially in agricultural census in Brazil, but she stresses that the proportion of women temporary workers is still missing. In addition to her interest in understanding agrarian transition and its influence over gendered labour use, she critiques the current available data on non-traditional agriculture export as being integrated into industry and sometimes under agricultural services, which may result in overestimation of women's work in non-agricultural activities.

Deere has distinguished three types of labour market, the local peasant labour market, the labour market generated by capitalist firms producing labour need for internal market, and the labour market for agro-export production (Deere, 2005:25). According to Deere, Latin American countries can however be differentiated based on traditional versus non-traditional products in the agricultural sector. In the Latin American context, the boom of non-traditional export industry in agriculture is deemed as a process resulting in feminization of agriculture, but Deere also suggests that women constituted an important component of the temporary labour force even in the traditional export crops. Focus on enumeration to comprehend feminization increases doubts as comparison with the past and present becomes more difficult due to varied ways of measurement strategies used. However, the argument build around feminization is

regarding the cheap labour that can be drawn seasonally, where female labour is used as a reserve labour for agro-export production, whereas permanent jobs are reserved for men. Similarly, Deere asserts that the female labourers are used as secondary workers while men as holding primary responsibilities.

In-line with Deere, Lastarria-Cornhiel (2006) have also contextualized the phenomenon of feminization within the context of agrarian transition from traditional export crop to labour-intensive non-traditional horticultural crops. Presenting data on national statistics and compilation of literatures on women in agriculture in Latin America, Lastarria-Cornhiel pointed towards features associated with women labour — labour-intensive tasks, low wages and piece rate work, packaging and processing work that often involve long working hours, work that are temporary, seasonal and casual, and as a reserve labour. Focusing on the working conditions, Lastarria-Cornhiel also stress on the feminization of bad jobs. While scholars (Deere, 2005; Lastarria-Cornhiel, 2006) suggest the need for rural households to diversify their livelihoods as a principle factor driving feminization, some scholars have focused exclusively on male-outmigration (Radel et al., 2012) as a factor of livelihood diversification. In contrast to the male out-migration debate that has led to the feminization of agriculture, Deere (2005) has also presented evidence of feminization of internal migration as a result of the demand for domestic female servants among the expanding middle class prior to 1970s. After 1970s, the gender gap in internal migration was reduced as a result of the increasing trend of male outmigration. She suggests that growing employment opportunities in rural areas for women resulted in difficulty for men to find work within rural space, pushing men to migrate. Earlier only intra-rural migration characterized by seasonal agricultural workers was male dominated. Recently, the growing proportion of rural female-headed households, mostly de facto households, and also de jure as a result of abandonment after men who intended to temporarily migrate became a permanent migrant, along with women's choice to remain single, marry late or opt for separation and divorce has resulted in feminization. Thus, Deere suggests non-linearity in the direction of change towards feminization as a result of changing agrarian context and migration trend.

Presenting a case of Calakmul's chilli-growing region of Mexico, where there is a norm for women not to be farmers, women are found to be supervising male labourers

as the community maintain women as housewives but are not encouraged to cultivate (Radel et al., 2012). The managerial role of women is however not converted into increasing social status or higher reputation suggests Radel et al. (2012). They further stress that a male-dominated family farming system holds strong gender norms that is against women's field labour participation; thus, questioning the assumption of men-outmigration resulting in feminization of agriculture, or that feminization of agriculture is mostly limited to labour but not managerial position. Their research also challenges the presumption that women holding managerial position are good, as managerial position by itself does not change the existing gendered norms that still limit women's socio-economic functionings in agriculture. Use of the term 'managerial' is thus hyperbolic and can be considered as a misnomer. Thus, Radel et al. (2012) provides a space in which the current use of the term may still be questioned.

Using household survey data from rural China, de Brauw (2003) challenges the notion of feminization of agriculture. De Brauw argues that the amount or proportion of farm work done by men and women should also be used as a criterion to understand feminization. Using scholarly works in West Africa, de Brauw presents a scenario where men and women farm separate plots, therefore land transfer of men to women could suggest feminization. Otherwise men's employment in off-farm or migration out of rural areas could only result in women continuing the same farm work with few additional responsibilities which was earlier shared by men suggests de Brauw. Using gender composition of the agricultural labour force, de Brauw suggests that the proportion of women farm labor is rather decreasing. Using multi-variate analysis with demographic variables, he further highlights the decreasing tendency of young females as well as young males role in farm work. According to de Brauw, men typically don't abandon farm work entirely to women, but are engaged in multi-functional occupation than women in rural areas. De Brauw suggests that based on aggregate data women's participation in agriculture is not increasing, but women's agricultural work might be increasing in some villages while it might be decreasing in some. Such increase is usually in poorer villages where women take up more agricultural work when men leave, but women from better-off villages may use capital to substitute hired labour. Average work in a less affluent village which is most labour intensive uses 4280 hours of work, whereas better-off villages amounted to 492 hours of work into farming. He

further states that female-headed households in particular might lead to an overestimation of women's work. He concludes by stating that off-farm employment opportunities are increasing for both men and women, but more so for men than women. He suggests that either labour replacement by wageworker, or farm work by older men is taking over the farm rather than women.

Zhang et al. (2006) also questions studies that treat women as a single group. They scrutinize off-farm labour participation of men and women to explore how labour allocation has changed as a result of a changing economy. They use several factors to measure increasing participation, such as, an increasing number of women who at some time in the past did not participate in on-farm work, but now they do; the rising number of hours worked on the farm; and rising share of hours of farm work done by women within the household relative to men. These three measures have been used to compare relative trends of work among men. They also use feminization of farm management or managerial feminization, a concept that denotes women's role as primary decision maker on the farm or as someone who has gained greater access to agricultural income earning activities. Like de Brauw (2003), Zhang et al. (2006) also conclude that feminization of agriculture is not happening, but point towards feminization of livestock sector with 64 percent of the hours of farm work by women in livestock activities. Although these scholars suggest feminization of livestock work, they point towards limited feminization in terms of men controlling the marketing of livestock product while women's focus on managing and running the livestock operation. Song et al. (2009) explores feminization within the context of changing rural space in China, where there is a decreasing share of agricultural income out of total household income. Similar to Zhang et al. (2006), Song et al. (2009) also assert ageing agricultural labour force with young generation losing interest in farming. As opposed to Zhang et al. (2006) and de Brauw et al. (2003), these scholars do not challenge the notion of feminization but present a data on how household decision making is differentiated by gender with 'big' things being the men's domain and 'small' things being women's domain. They show that women's decision making is more in food crop and vegetables as compared to livestock, cash crop and fruit trees.

Abdelali-Martini et al. (2003) also presents a case of feminization of agriculture in Syria as a result of men leaving agriculture sector. They suggest that land fragmentation as a result of land reform, increasing population, and the limited prospect for inheritance of land that could fulfill subsistence has resulted in men out-migration, shaping the agrarian economy and female labour use. Like other scholars (Deere, 2005; Lastarria-Cornhiel, 2006; Radel et al., 2012) they also suggest rural households need to diversify their livelihood strategy has resulted in men to migrate. These scholars suggest that both men and women work at household level, but with varying degree of input. Men as the head of the household still hold managerial role despite men migration from the family as other male members who are left behind take over the farm responsibility. However, in terms of wage labourers, they show an increasing number of women labourers being hired. Therefore, these scholars stress on the condition of feminization of labour as against feminization of managerial role. They also suggest that in some areas there is higher women's family labour contribution to livestock management and production activities. But in some cases, irrespective of availability of women labour, ploughing which is a man's task cannot be replaced by women as women are not trained to plough or to drive a tractor (Abdelali-Martini, Goldey, Jones and Bailey, 2003).

Proportion of the active population engaged in agriculture, women in labour force and rate of female labour participation by occupation, hours of work in own farm, as wage labourers, and number of hired labourers were used as the basis of comparison to unravel women's work in agriculture (Boserup, 1970). The increased importance of women's role in agriculture, whether as measured by the ratio between women and men, or by the high proportion of women whose main employment is agriculture, present the existence of the phenomenon. Labour force statistics and time-use surveys are the two measures used by scholars to determine women's labour contribution in agriculture. While labour force statistics presents a national account of labour availability and labour-use, time-use survey on the other hand captures domestic work usually excluded from labour force statistics which provides insight into the substantial heterogeneity among countries and within countries regarding women's work in agriculture (Doss et al., 2011).

According to de Schutter (2013), the feminization of agriculture is more pronounced in Asia and Africa, with regional variation based on methodological inconsistencies, crop variation, activity type, technology used and age group among other factors. De Schutter suggests three modalities through which agriculture is feminized — i) Women take the bulk of agricultural work when male adult member leaves in search of outside employment, in such cases, mostly subsistence agriculture is in the hands of women. Such women might receive remittance and hire labour to replace work previously done by the male member; 2) another situation occurs when women use family plot to produce for the market rather than for home consumption alone. In such a case, women need more input, investment, market linkages which require access to capital, land and ability to be mobile; 3) The third type of feminization includes of women working as wage employers in large plantations. Each type of feminization result in a different set of gender relationships and each corresponds to a different type of agrarian transition (de Schutter, 2013). Scholars have also pointed out that men focus on newly introduced more market prominent cash crop, while women are responsible for traditional food crops (O'Laughlin, 2008: 27; Elbehri and Lee, 2011: 29), creating a dynamic of intra-household crop ownership. Women tend to spend their labour time in men's crop, while men hardly contribute their labour in women's crop (Boserup, 1970; Doss et al., 2011). Debates on the nature of feminization of agriculture (McMurry, 1992; Deere, 2005; Zhang et al., 2006; FAO, 2011; Doss et al., 2011; de Schutter, 2013); thus, provide a new turn in understanding the phenomenon.

Four issues can be drawn from the scholarly work on the feminization of agriculture, mainly from Latin America, China, and Syria. First, the phenomenon of feminization can be considered as a result of male-outmigration and men engagement in non-farm activities as part of income diversification as is the case in all countries. Second, the need for income diversification has resulted in increasing number of women in the labour market, especially in non-traditional agricultural market, mostly evident in the case of Latin America. Third, the agricultural feminization can be scrutinized at two levels, mainly at household level and another at labour market, where labour can still be segregated as managerial labour and physical labour. Fourth, the measurable increase in the number of women participation and their workload at labour and managerial level depends upon various factors. Such factors includes of availability of another male

member in the family, age of the family member, marital status, plot size, crop type, number of labourers employed, farm equipment and techniques used. Feminization of agriculture could thus have various connotations given its distinct context. The context in which feminization can be explored by using specific criterions and indicators to measure the changing pattern of women involvement thus requires in-depth exploration of the micro-social setting.

2.4 Criterion used to Determine 'Feminization of Agriculture'

There is no consensus among scholars regarding what indicates feminization. With reference to Boserup, 'feminization of labour' has been used to refer to the rapid and substantial increase in the proportion of women in low-wage paid work, and to describe the increased flexibility of labour that characterizes irregular, part-time or home-based work (Kanji et al., 2011). Although Boserup (1970) highlighted on the role of men and women in agricultrue, Boserup used the term feminization to denote substantial number of women working in clerical jobs rather than in agriculture. Almost 60 to 70 percent of women in the clerical labour force in industrialized countries were termed as the feminization of clerical jobs. Similarly, the agriculture feminization refers to the measurable increase of women's participation in the agricultural sector (Hanne, 2015: 29). Measures used to collect data to understand the phenomenon includes of gathering numerical data on economically active population in agriculture, composition of rural labour market, labour force by gender, share of wage labourers and managerial positions, activity share by gender, and sex-disaggregated time-use in agriculture (Boserup, 1970; Doss et al., 2011; de Brauw et al., 2013).

Although scholarly works on the feminization of agriculture (Song et al., 2009; Jütting et al., 2010) credit Boserup for highlighting women's role in agriculture, the term 'feminization' is credited to Diane Pearce (1978) who coined the term feminization of poverty (Chant, 2008; Bieri, 2014;). As part of the feminization debate, borrowing from Chant (2007), lately Bieri (2014) has extracted three different meanings associated with the phenomenon. The feminization of agriculture could thus be indicated as (1) without reference to the past, the incidence of women's involvement in agriculture is higher compared to men; (2) with reference to the past involvement, women's involvement in

agriculture is increasing; (3) with/without reference to the past, women emphasize or provide more meaning towards the experience and their involvement in agriculture as compared to men. The first two understandings provide more emphasis towards the numerical dimension of feminization, which is either compared to men or to a previous state, while the third aspect could be interpreted as providing broader conceptual space where women's experience and researchers' heuristic knowledge could be used together through ethnography based research to subjectively understand the phenomenon of feminization of agriculture. Whether we use time-use data, activity share, labour force participation, survey tool with specification on decision-making and daily activity in agriculture during peak and lean season based on agriculture calendar, case studies or narratives, scholars have suggested on using mixed research method to better capture the phenomenon by gathering both numerical and subjective qualitative data to understand women's role in agriculture. Since feminization is usually understood in comparison either to the previous state, or with the current state between men and women or among women, the term is mostly focused on the numerical dimension. Bieri (2014) however suggests that the term entails more than numbers, as it also refers to changes in structures, processes, and norms that have been associated with a female realm. Feminization is thus considered as encompassing of social structures and institutions that create and retain female in certain sectors. Such a notion of feminization questions the gendered hierarchy in which women are subordinated relative to men.

2.5 'Feminization' as a Problematic Phenomenon

The term feminization has been used in two ways – first, to highlight a stark difference in gendered participation in any sector at one hand; and secondly, to denote women's position relative to men in any sector. It is in the use of the combination of these two factors that the feminization can be considered as problematic since gender norms and existing social arrangements often place women behind men. Making sense of the numbers highlighting stark participation in different sector, activities or agricultural tasks and crop/livestock production becomes meaningful only when the comparison is done based on the value given to the specific sector. As shown by Jütting et al. (2010), the existing social institutions shape labour market, resulting in feminization of bad jobs with poor working conditions and low pay. Feminization of bad

jobs is measured in three different ways, women's labour market participation, gender segregation by sectors and the gender segregation by working status. They further analyzed the factors influencing the phenomenon by using five sub-indices under Social Institutions and Gender Index (SIGI) as a measure for social institutions to test the hypothesis that social discrimination against women leads to an overrepresentation of women in bad jobs and an underrepresentation of women in good jobs. Referring to Boserup's 'feminization U' hypothesis, these scholars assert that social institutions hinder women from leaving the agricultural sector as they limit women's access to education and freedom of movement among other things. They further suggest that the feminization of agriculture corresponds to a feminization of bad quality jobs. They assert that more women in agriculture is due to patriarchal social norms, conservative cultural norms and existing institutional systems that hinder women's mobility outside their home and limit their jobs as contributing family workers.

Jiggins (1998) presents an analysis of the feminization by presenting specific data and anecdotes on how farming has become a female occupation in Asia, Africa and also Latin America and the Caribbean. With the help of statistical data, she further highlights the intensity of feminization of agriculture to that of the feminization of poverty, especially of female-headed rural households. According to Jiggins (1998), the phenomenon can be conceptualized and measured under at least five themes: labour force participation, agricultural activity, allocational priorities, adjustment in the structure of economies in competition with world markets, and poverty profiles. She further states that each theme provides partial insights and none can provide a sufficient guide to policies without contestation. While labour force participation and agricultural activity are the most explored themes under this phenomenon, Jiggins have added three other themes. Citing a case of Nepal, Jiggins assert that women's time in fetching fuel wood from more distant sources resulted in low agricultural productivity noticeable among the poorer small farm households. Such kind of allocational priorities are seen as an unfair exploitation of women subordinated by patriarchal power, that also shapes structural adjustment programs. Jiggins have stressed that the structural emphasis on export and agro-industrial sectors have benefitted only some women who are positioned to take advantage of such policies. Otherwise majority of rural women have been negatively affected by the cutbacks in the public services and subsidies that supported

the efficient allocation of their time, labour and income. Finally, Jiggins have included feminization of agriculture as a sub-theme within the feminization of poverty. Like Jütting et al. (2010) who corresponded feminization of agriculture to the concept of feminization of bad quality jobs, Jiggins suggest that agricultural feminization is a result of inequality, deprivation and human poverty.

Standing (1989) has also contextualized his paper under the changing features of labour markets that have resulted in increase in female labour force participation, with feminization of many jobs traditionally held by men. He acknowledges that the term is ambiguous yet it has been used intentionally to capture the double meaning that the term suggests. According to Standing, 'a type of job could be feminized, or men could find themselves in feminized positions. More women could find themselves in jobs traditionally taken by men, or certain jobs could be changed to have characteristics associated with women's historical pattern of labour force participation. The characteristics include the type of contract, the form of remuneration, the extent and forms of security provided and the access to skill'. Trade, technological innovations, labour cost of production, structural adjustments, declining emphasis on welfare systems is considered as influencing the outcome of feminization of labour market. Like Jütting et al. (2010), Standing also stressed that women's participation in predominantly rural economies is linked with agriculture more than other sectors. As much as rural space is characterized by informal labour market, Standing assert that informalization of labour is apparent even in industrialized and industrializing countries. He interprets higher level of female labour in informal and flexible labour market as a result of wage differentials, where men usually tend to move out while women remain in low-wage jobs. Like Standing (1989) and Jütting et al. (2010), Deere (2005) too assert that feminization is a result of the feminization of flexibilization and feminization of bad jobs, which is further conditioned by social norms that subordinate women over men. Lachenmann (2014) has also pointed towards the informalization of women in the economy.

Scholarly works on feminization have not only provided descriptive analysis of the concept by highlighting on the numerical differences between men and women, either with reference to the past or without, but have also made an effort to understand the reasons behind the differences by highlighting on the unequal gendered structures.

By categorizing feminization as a phenomenon which can be understood in diverse ways, such as the feminization of — 'labour, managerial position, bad jobs, informal and flexible working conditions', scholars have opened up a space for exploring the phenomenon of feminization in varied ways that may be contextualized within a given setting. Normative evaluation of feminization is thus essential to understand whether feminization is a problematic phenomenon in the study site. If feminization in one or more aspect of agriculture is a result of women subordination then the concept of empowerment provides better understanding of both feminization as well as conditions in which women are situated within multi-functional agricultural structure.

2.6 Conceptualizing Women's Empowerment

The notion of empowerment has gained prominence in the field of gender and development as a result of the increasing understanding on gender hierarchies (Kabeer, 1994) that marginalizes and subordinates one sex over the other. The existing structure along with exercise of agency influenced by existing norms has thus been considered either as a hindrance in the process of women's development, and/or as a facilitator in empowering women (Rowland, 1997). The concept of empowerment is thus used mostly to reflect those people who have been previously disempowered, and are either empowered or are in the process of empowerment, or who needs empowerment. The process of change, which increases one's power that was earlier denied to them, is what Kabeer (1999, 2001) terms as empowerment. Kabeer distinguishes between power and empowerment in terms of the ability to exercise choices, but asserts that the term empowerment can be used only to those who have been disempowered in the first place and thus exercise strategic life choices to improve their conditions. The term powerlessness which may suggest the exact opposite of the term power according to Kabeer (1994:223-263) suggests a total absence of power. But in reality people have at least a small amount of power to resist, subvert and sometimes transform the conditions of their lives asserts Kabeer. Hence, the term empowerment and disempowerment is more applicable to understand the power relationships that create, maintain and sometimes transform gender hierarchies.

Clear definition of empowerment is however lacking, in part due to the use of the term in diverse fields, and partially due to the importance given by scholars to the specific context in which empowerment is being studied (Kabeer, 2001; Ibrahim and Alkire, 2007; Alkire et al., 2013). Scholars have nevertheless tried to operationalize the term by elaborating on the specific dimensions, attributes, or components that are relevant and essential to understand the term empowerment. Rowlands (1997) have identified four types of power: power to, power with, power within and power over, as factors that guides the empowerment process that consists of three dimensions — personal empowerment, relational empowerment and collective empowerment. Similarly, Kabeer (2001) has also used these four notions of power, and has further emphasized on the three inter-related dimensions — resources, agency and achievements to elaborate on the concept of empowerment. Comparing the conceptualization of empowerment as suggested by Rowlands (1997) and Kabeer (2008; 2001), Gammage et al. (2016) assert that the concepts used by Kabeer provides a more holistic understanding of the term as it incorporates the dimensions of resources and achievements which was missing in Rowlands concept of empowerment.

Conceptualization of empowerment based on Kabeer's work reflects the importance of choice within the three inter-related dimensions of agency, resources and achievements. She differentiates the understanding of choice as a difference in the choice one makes, as compared to the possible inequalities in people's capacity to make choices. Difference versus inequality debate according to Kabeer provides a framework in which empowerment could be assessed. She asserts that an observed lack of uniformity in functioning achievements cannot be automatically interpreted as evidence of inequality because it is highly unlikely that all members of a given society will give equal value to different possible ways of 'being and doing' (Kabeer, 2001:22). The concept of value then becomes central in operationalizing choice that results in certain kind of achievement. Kabeer has provided five different ways in which value can be understood — 1) Universally shared values with primary functionings that focuses on basic needs achievements. These values however undermine gender disadvantage and basic needs such as food and shelter might relate the gendered problem as a problem of poverty; 2) Social value such as education and political representation which have been used by Human Development Index and Gender Empowerment Measures; 3) Value

placed by women in question; 4) Values of the communities in which they live; 5) Achievement values defined by the researcher.

Value placed by women in question and values of the communities in which they live are the two components of value debate that becomes essential in understanding the choices made within the gender unequal society. The values placed and the choices made are therefore not value-neutral, and are often influenced by the gender norms and structures. Therefore, even when women themselves are making a choice using their own agency, the choices made under the influence of certain value may reinforce forms of gender inequality as women might have internalized their social status as person of lesser value suggests Kabeer (2001). Kabeer further asserts that women might shape their own values based on their individual histories, everyday realities and by the material and social context of their experiences. In Kabeer (1994: 223-263), she has also pointed that the power to define priorities remains where it has always been, in the hand of a minority at the top, suggesting that the values of the communities might also be a reflection of only a few individuals. Thus, placing value and choice within the deeper reality of everyday norms and customs. Borrowing Bourdieu's idea of 'doxa', Kabeer (2001) emphasizes on the aspects of tradition and culture which become neutralized as they are taken-for-granted, but are revealed under competing ways of 'being and doing' as result of availability of alternative resources and possibilities. Such situation gives rise to a critical consciousness, which allows people to question the earlier social order. At one hand, choices can then be made within the prevailing norms, and on the other the choices could have a transformatory significance by challenging the existing social inequalities. These choices and values are central in understanding the three inter-related dimensions of empowerment.

Resource Dimension of Empowerment

According to Kabeer (2001), resources includes of human, social and material resources that enhance the ability to exercise choice. Such resources are either allocated at present or may form a part of future claims and expectations, as governed by norms and rules that determine the distribution of resources. Criticizing the use of the term resources to simply indicate 'access' indicators, she further states that resources should

have the potential to turn into valuable achievements. In addition to ‘access’, the term ‘control’ as asserted by Kabeer (2001) is often used and replaced to add value in relation to the resource in question. Similar words include of ownership and entitlements, which are, used interchangeably. These terms are often used in relation to having a say in decision-making regarding the use of c ertain resources. Irrespective of the word selection, Kabeer suggests that resource dimension of empowerment should reflect women’s ability to exercise their agency to achieve certain goals as a result of their ‘access’ to the resource in question.

Agency Dimension of Empowerment

According to Kabeer (2001) agency is closely linked with women’s ability to exercise their agency in decision-making. The agency is also the ability to define one’s goals and act upon them (Kabeer, 1999). Agency is thus decision making in relation to resource use in one hand, and on the other the ability to make decisions regarding one’s goal and act upon it. She further elaborates the concept of agency with that of the four types of power mentioned by Rowland (1997). The power within is considered as the sense of agency that one individual holds. Power to refers to people’s capacity to define their own life choices and to pursue their own goals even in the face of opposition from others. Power with suggests collective agency. And power over suggest the power to override others agency. These four types of power indicate both positive and negative agency that could take the form of negotiation, deception, manipulation, subversion and resistance as well as intangible cognitive processes of reflection and analysis (Kabeer, 2001). Agency dimension as asserted by Kabeer (2001) also provides insight into non-decision making where authority is not questioned and hence the status quo is maintained, even without any apparent exercise of agency. Exercise of agency through four aspects of power also suggests inaction between parties involved in the decision-making process. Gammage et al., (2016) also assert that any one individual does not carry out decision-making but often takes place between individuals who are positioned differently in the decision-making process. Such decisions are considered as a manifestation of power that is often guided by rules and norms influencing both the structure and agency. According to Agarwal (1997) social norms govern the division of roles, responsibilities and resources between household members along the lines of age,

gender and marital status (Gammage et al., 2016). Stressing on ways in which agency could be exercised, Kabeer (2016) has also pointed towards women's behavior that lead them to accept socially assigned responsibilities as given feature of their lives but also stressed on cases of active dissent portrayed by women. While Kabeer stresses on the aspect of choice in exercising agency, she also suggests that compulsion rather than choice, in addition to the process of negotiation forms a part of decision-making process.

Agency can thus be understood as a process of decision-making that may be overt or covert, with each decision being influenced by certain norms and behaviors' that are prevalent in everyday life. The concept of agency thus not only includes of pro-active decision-making on the part of women, but also incorporates adaptive preferences under the light of decision-making which is influenced by social norms as much as it is shaped by the structures of existing social arrangements. The two concepts used by Amartya Sen, 'adaptive preferences' and 'co-operative conflict' is frequently used in literatures to elaborate on the ways agency could be exercised (Gammage et al., 2016). Adaptive preferences is used to denote choices that result in silent and apparent consent to the existing arrangements of oppressive structure that lead to the adaption on the part of oppressed groups to the status quo (Gammage et al., 2016). Such kind of cooperative conflict suggests that in spite of existing inequalities of power, there may be a lack of overt bargaining, resulting in compliance to the existing social arrangement. Both contestations and compliance are thus important while exploring agency.

Achievements Dimension of Empowerment

Any achievement through the use of women's agency that leads to reduction in prevailing gender inequalities in functioning achievements can be termed as achievement dimension of empowerment (Kabeer, 2001). Positive change in women's wellbeing that however does not challenge the existing gender inequality in Kabeer's view does not qualify as an indicator of achievement related to empowerment. Achievement could thus take two forms, one leading towards the achievement of basic needs or practical needs, and the other that is more transformative in nature, suggesting achievement of strategic needs through strategic life choices. The concept of practical and strategic gender needs that was emphasized by Moser (1989) and Molyneux

(1985:232) thus correspond to the two types of achievement. Although these two needs are not easy to differentiate in every circumstance, they provide a means to understand women's position in a society, and also the need to challenge gender hierarchies (Rowland, 1997; Said-Allsop and Tallontire, 2015). Achievement in strategic gender need or more broadly the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them is what Kabeer (2001: 19) terms as empowerment.

The three dimensions of empowerment as articulated by Kabeer (2001), draws several terminologies such as 'value', 'functionings', 'achievements' and 'agency', from Amartya Sen's work on the capabilities approach. Constant reference to valued ways of 'being and doing' reflects that Kabeer's work have been influenced by the work of Sen. While Kabeer considers agency as part of the three-dimensions of empowerment, Sen's conceptualization of agency is considered as an aspect of capabilities (Ibrahim and Alkire, 2007; Gammage et al., 2016). According to Sen, the notion of agency is associated with freedom and is defined as 'what a person is free to do and achieve in pursuit of whatever goals or value he or she regards as important' (Sen, 1985). The concept of agency thus considers one individual as responsible for his action or inaction. Sen's conceptualization of agency does not provide sufficient explanation on how agency could be used to operationalize empowerment. Ibrahim and Alkire (2007) suggest empowerment as an expansion of agency. Ibrahim and Alkire conceptualization of agency is however limited as compared to that of Kabeer (2001), as they use the term empowerment only to measure dimensions of decision-making. Both studies have however made an effort to find agency related indicators that can be quantified and measured as aspects of empowerment (Kabeer, 2001; Ibrahim and Alkire, 2007). Stressing on the difficulties in identifying indicators, Kabeer (2001) states that 'indicators only compress a great deal of information into a single statistic but make assumptions, often implicit, about what this information means'. Using indicators to measure empowerment thus require triangulation of data, sources and methods to establish correct meaning of the indicator.

Illustrating a case of women engagement in the market-related work through loan provided to women, and its consequential effect on increasing women's work burden,

but increase in leisure hour for men, suggests male privilege rather than an income effect (Kabeer, 2001). Conflicting conclusions as illustrated in the example on women empowerment suggest women's entry into market work as empowering in one hand, and on the other the increase in their workload due to the existing social arrangement that privileges men as disempowering. Kabeer however suggests that such conflicting conclusions provide a basis for triangulation, and also assists in enhancing the understanding of empowerment (also see Kabeer et al., 2011). Given the complexities around operationalizing empowerment, according to Kabeer indicators of empowerment should merely indicate the direction of change rather than provide an accurate measurement of it. Kabeer's argument suggest that the direction of change from women empowerment perspective should include of a change towards creating equal access and equal opportunities that was previously denied to them. In order to do so, the research component should include of both qualitative and quantitative measures of data collection, where in-depth qualitative analysis should justify quantitative formulation of indicators to carefully study the indicators in question and to interpret the meaning of the indicator. Kabeer's emphasis on conceptual as well as methodological implications of studying empowerment to understand deeply embedded gender hierarchies is thus considered appropriate for the current study.

2.7 Women's Empowerment in Agriculture

Empowerment as a concept has been used in varied disciplines, out of which agriculture is one sector where scholars have widely used the term to explore women empowerment in agriculture over the past few years (IFPRI, 2012; Kabeer, 2012; Alkire et al., 2013; Sraboni, Malapit, Quisumbing and Ahmed, 2014; de Brauw 2015; Said-Allsopp and Tallontire; 2015; Quisumbing et al., 2015). Number of scholars (Alkire et al., 2013; Sraboni et al., 2014) has worked on the multi-dimensional model of empowerment development by IFPRI (2012). The multi-dimensional Women's Empowerment in Agriculture Index (WEAI) is a tool developed to measure women empowerment in five domains of empowerment — Production, Resources, Income, Leadership, and Time allocation (IFPRI, 2012). According to IFPRI (2012), this tool can be used to measure the level of women empowerment in each domain of empowerment, and can also show the degree of inequality between women and men within the

household. The index has been developed through pilot surveys prior to finalizing the questionnaire design, and the use of narratives to validate and explain indicators as well as to conceptualize women's empowerment in a given context. Similar to Kabeer's (2001) three-dimensional model of empowerment, the WEAI also incorporates the aspects of resources, agency and achievement. WEAI emphasizes on the direct measures of empowerment such as decision-making power, and claims to have included the agency that the respondent values (Alkire et al., 2013). Control is the term often used to describe how women agents use the available resources. Finally, achievements are measured in 10 indicators under the five domains of empowerment. Backed by qualitative data, the WEAI methodology also claims to reveal the connections among areas of disempowerment (IFPRI, 2012).

The index is comprehensive and is based on meticulous effort to comprehend empowerment by focusing on both agency and resources. Ensuring locally suitable WEAI thus requires initial field visit, pilot test of survey, re-design of the index, and finally administer the questionnaire survey. This process can include of concurrent qualitative measures of data collection to gather case studies or narratives or can be conducted sequentially before or after the survey. However, without qualitative means of data collection, the index may provide inadequate understanding of the indicators. Thus, like Kabeer (2001), Alkire et al. (2013) also suggest for qualitative measures of data collection to conceptualize women empowerment in agriculture. Quisumbing et al., (2015) has also highlighted the importance of qualitative research to triangulate quantitative indicators. Using a mixed-research method, these scholars have used asset-based approach to assess gender relations in agriculture with different degrees of market-orientation. They have segregated agricultural components into high-value crops and livestock commodities that has both market-orientation as well as subsistence. Reflecting on the multi-functional nature of agriculture by categorizing agricultural products based on its market value and nutritional value, these scholars have assessed gender equitable outcomes in these sectors by comparing asset base available for market production and home consumption. Both market and nutrition-oriented crop focused on increasing productivity for two differing reasons. However, according to Quisumbing et al., (2015), nutrition-oriented projects were mostly oriented towards women, and did not emphasize on imparting nutrition knowledge to men. Biases in projects that support

existing social arrangement are considered as promoting patriarchal status quo. These scholars further assert that agricultural involvement have potential to transform gender relations both within and outside the household. The conceptual framework on which the study (Quisumbing et al., 2015) is based is much more complicated than the empowerment model of Kabeer (2001), as it includes of terminologies such as shocks, livelihood strategy, full income, consumption, savings and well-being, without sufficient explanation on how the framework is linked with empowerment. Nevertheless, the study suggests two potential functionings of agriculture and how one functioning is considered as more female-oriented by project, i.e. subsistence or nutrition-oriented agriculture program as women focused, and the other market-based farming as both men and women oriented with varying degrees of asset control (Quisumbing et al., 2015). Their focus on agriculture with different degrees of market-orientation in a mixed-farming system provides insight into how intra-household division of labour and assets take place through traditional roles as well as through the design and implementation of agricultural development interventions.

Dolan (2001) has studied the changing agricultural context after the introduction of French beans in Kenya, and its impact on women by assessing intra-household resource allocation. Putting French bean production within the agricultural seasonal calendar of food crop cultivation, Dolan suggests that both land and labour has become secondary for food crop production that is mostly women's domain. French bean production has replaced local vegetables that were grown for household consumption and sale at local markets. They suggest two situations, one in which there is women control and another men control of the income from French bean. In both cases, there needs to be a redistribution of labour especially during the intersection of the production cycles. In case of women control of the income, women proactively divert their labour from food to export crop production. But in case of men control of income, women have to negotiate their labour time between food crop and cash crop. Such a case highlights the boundaries of gendered contribution to household subsistence as well in the tasks that are predominantly female-oriented. Although the term empowerment has not been explicitly used, Dolan's study focuses on income, land and labour as resources by examining how negotiation takes place to adjust land and labour obligations as well as income control based on gender hierarchies. Negotiation as highlighted by Dolan (2001)

takes the form of compliance to existing Christian norms and patrilineal norms that stress on domestic duties and female obedience at one hand, and on the other they oppose patrilineal norms by participating in church functions to free themselves from the domestic responsibilities, including of domestic agricultural production. Although the term empowerment has not been used explicitly in Dolan's study, the studies focus on exploring gender-differentiated norms in a mixed-farming system is similar to that of Kabeer's (2001) multi-dimensional empowerment model. Similarly, Agarwal (1994, 2002) have substantially argued on women's control over land for agricultural production.

Abdelali-Martini and Pryck (2014), on the other hand have used Rowlands (1997) typology of power or agency as a concept to determine empowerment. Like Ibrahim and Alkire (2007), these scholars also suggest empowerment as an expansion of agency. Abdelali-Martini and Pryck have used qualitative data to explore different types of feminization, one as contractors and another as labourers. Transition from male-led family labour gangs to female labour groups as a result of male out-migration have resulted in increasing the number of women contractors in Syria. This transition is a result of migration of male who earlier led family labour groups, and also of men contractors who have left for better-paying non-agricultural work that created space for women contractors to fill the void. Abdelali-Martini and Pryck's study show that women labourers prefer to work with women contractors and women contractors are more likely to work with female workers, replacing the model of mixed family groups. The difference between men and women contractors was however stark in terms of the number of workers within the group, which ranged to 40 for women contractors, whereas men's group ranged from 10 to 300 labour workers. Although the study has highlighted continuity and transformation in gender relationships in the context of agriculture, their study is more focused on expanding what the four types of power could mean in isolation. How these four types of power translate into empowerment is however missing in their study. Therefore, in line with Gammage et al. (2016), the study rationalizes Kabeer's (2001) three inter-related dimensions of empowerment model over Rowland's (1997) four types of power as empowerment model to understand feminization in agriculture as well as women empowerment in agriculture.

2.8 The Situation of Nepalese Women in Agriculture

Irrespective of the differences among women of different caste, culture, ethnicity or geography, substantial amount of literature exists that portray women's subordinate position vis-à-vis men in Nepal (Acharya and Bennett, 1983; Upadhya, 1996; Tamang, 2000; Acharya et al., 2007; Tamang, 2009). A series of research on the status of women in Nepal and how women could be integrated into the national development process, (Acharya, 1979; Acharya and Bennett, 1981; Reejal, 1981; Acharya and Bennett, 1983) conducted as part of a single project, provides an overview of the conditions of women in subsistence and market based economy. Based on the model of village economy present in the context of Nepal, Acharya and Bennett (1981) had identified four spheres influencing the life of rural households, 1) the household's domestic work, 2) agricultural production activities, 3) work in the local market economy, and 4) employment in the wider economy beyond the village. They have argued that this four-sphere model is useful in depicting the intra household sexual division of labour between domestic work and subsistence production in one hand, and the market production on the other, with varying degree of women participation in these four spheres. Women's heavy participation is in the domestic/subsistence sector as opposed to market production. Acharya and Bennett have used the concept of power, authority and prestige with the notion of status, and have acknowledged the multi-dimensional nature of the concept of status. They have argued that the complexities associated with comprehending the notion of status requires a combination of methodology that provides both statistically measurable variables as well as an in-depth case data that could provide a meaningful context in which the data could be interpreted.

Based on the emergence of the pattern of data, Acharya and Bennett (1981) had interpreted women's status under the inside/outside or private/public dichotomy where domestic and subsistence was considered as inside-private domain, whereas market economy was considered as outside-public domain. Women's participation in the market sphere or the outside domain of the economy shows strong inside/outside dichotomy for women from Maithili, Parbatiya and to a lesser degree to the Newar mainly Indo-Aryan group, and weak inside/outside dichotomy for women from Baragaonle, Lohorung rai, Kham Magar and Tamang who fall under Tibeto-Burman group. Acharya and Bennett

(1981) assert that within the Tibeto-Burman group there is an emphasis placed on female entrepreneurship, mainly related to brewing beer and selling liquor in the local market in addition to marketing home produce and manufactured goods. They also suggest that unlike in Indo-Aryan group that practice strict patriarchal norms, there is less control over female sexual purity resulting in flexibility in female mobility in Tibeto-Burman group. Acharya and Bennett (1981) argue that women in communities that encourage their economic participation in the wider spheres of society tend to have higher status vis-à-vis men than in community where women's participation is limited to that of household production.

In another study, Acharya and Bennett (1983) show economic participation in the market economy as having a positive relation with women's decision-making power, and negatively affected by their confinement into subsistence agricultural production and domestic work. Decision-making has been considered as a variable to analyze power in the management of agricultural production process as well as in resource allocation. They have found that women who are confined to the 'inside' did not even have control over decisions about the domestic domain as male took over both major and minor decisions. Examining both secondary source of information, and extensive field data, these researchers had presented the conditions of women's lives through inside/outside dichotomy almost four to five decades' back. While, Acharya and Bennett (1983,1981) considered women's involvement in the market domain as essential for increasing the status of women, Gurung (1995) has criticized the trend in which women's involvement in development has been measured by their employment in a market economy. According to Gurung, women's role in the subsistence-based economy has been more invisible due to the importance given to monetary value of economy. She further adds that women's workload has increased, yet their work has been devalued under the more commercial agricultural production. However, her work is based on literature review and does not provide any empirical evidence suggesting how and why women might be subordinated within the market-oriented agriculture as opposed to that of subsistence. Like Acharya and Bennett (1981) who suggested that more men are employed in the wider economy beyond village, Bhattarai (2002) has pointed towards increasing male migration and its influence on agricultural feminization. Increasing number of women involvement in different type of crop production as well as decision-

making has been considered as feminization. Bhattarai has contextualized changing gender dynamics of rural households as a result of migration strategy by male members of the household for diversifying their livelihood as they struggled to meet increasing food demands and the need for cash to meet non-food necessities of life. Similarly number of recent research has pointed towards male out-migration and feminization of agriculture in the context of Nepal (Gartaula et al., 2010; Adhikari and Hobley, 2011; Gartaula, Visser and Niehof, 2012; Adhikari-Thapa, 2013).

2.9 Feminization of Agriculture and Women's Empowerment in Nepal

The dichotomous concept of inside and outside to denote female and male participation in the agricultural economy as suggested by Acharya and Bennett (1981) is not carried forward in the recent work in women and agriculture in Nepal. The notion of inside and outside is considered as too simplistic in the contemporary society to examine gender relationship where women have increasingly started participating in labour market and economy beyond the household. Similarly, the four spheres influencing the life of rural households, namely domestic work, agricultural production activities, local market economy, and employment beyond the village have not been used in the same way as in the past research. Rather, the recent studies have focused on male-migration as a factor, which can be related to that of men's increasing involvement in wider economy beyond the village. The notion of male out-migration has received central place in understanding changing rural space, where male-outmigration has resulted in increasing number of female-headed households, which many research consider as a factor contributing in feminization of agriculture (Bhattarai, 2002; Gartaula et al., 2010; Adhikari and Hobley, 2011; Tamang, 2011). Other two aspects of agricultural change which is similar to that of agricultural production activities and work on local market economy pointed by Acharya and Bennett includes of subsistence farming and domestic labour in one hand and cash crop farming and wage labour on the other. Like Acharya and Bennett (1981) who highlighted on the role of men in local market economy, many researchers have pointed men's increasing role in cash crop farming as opposed to subsistence farming (Paolisso and Regmi, 1992; Adhikari-Thapa, 2013). Some research has also shown women's increasing participation in the agricultural wage market (Dixon, 1982; Acharya, 2003; Kelkar, 2013), suggesting women's increased presence in

the local market economy. Varying degree of women's involvement in agriculture with the degree of crop marketability and need for household labour as well as wage labourers for each crop has resulted in new gender relations in the agricultural dominated rural communities. Furthermore, some study has emphasized that men who once left agriculture, return back after they see the prospect of earning higher income (Adhikari-Thapa, 2013).

Given the variation in women participation in changing agricultural sector, the focus of recent study is related to feminization of agriculture as a feature of household and wage labour in one hand, and decision-making on the other. Similar to the global trend, feminization of labour and feminization of managerial role has been used as the analytical framework to comprehend feminization of agriculture in Nepal (Gartaula et al., 2010; Tamang, Paudel and Shrestha, 2014; Gunnhild, 2015). Gunnhild (2015) provides labour use at household level, and slightly on wage labourers, but mostly confines the research within the periphery of household labour and decision-making. Gunnhild's study suggests that feminization of agriculture may be a form of exploitation, if labour is used without substantial decision-making power in the hand of women. Women's work in agriculture is characterized as that of a family worker in domestic sphere and wage labourer characterized by temporary, seasonal and casual workers in labour market. The works that women usually do are labor-intensive and time-consuming (Tamang et al., 2014). These scholars have also highlighted on how women exchange labourers are seen as compared to male exchange labourers. Value of women's exchange labour is usually undermined in relation to male exchange labour (Tamang et al., 2014). Using data from the Nepal Household Survey of 2004, Lokshin and Glinskaya (2008) has analyzed work related migration by males and its impact on labor market behavior of females. Their study concludes that the increase in household income due to remittances lead to a reduction in the rates of market work participation (MWP) of women in the sending households. They show ambiguous effect on MWP depending upon the workload that women have at home after men's migration, suggesting that the need for replacing man's labour at home may result in non-market participation. Since they have used secondary source of information, interpretation of the data may be questioned without proper contextualization. Women left behind studies (Lokshin and Glinskaya, 2008; Adhikari and Hobley, 2011; Maharjan et al., 2013) have

highlighted on the increase in hired female labourer by migrant households. They have however also provided insights on decreasing family labour, and increased leisure as a result of increased household income. Loss of family labour and increased hired labour has severe implication over exchange labour. These scholars also suggest that women have the additional burden of domestic labour as they have to replace work of household male who has migrated. De-facto women headed households are considered as having more burden than those women living with their in-laws but with increased decision-making power (Gartaula el al., 2010; Gartaula et al., 2012). Most research in Nepal has presented a situation of feminization as a result of direct male out-migration. But not all families have male migrants, yet the social and gender relationship in farm families is changing, it is important to understand feminization beyond the scholarship of male out-migration.

Adhikari-Thapa (2013) has studied the relationship between cash crop and gender roles to show how the degree of market orientation of the crop affects gender relationship. The study concludes that farmers opt for cash crop also because cash crop farming is less labour intensive than is cereal crop production. But the study does not show whether all of the land used previously for cereal crop has been used for vegetable farming or not. Otherwise, vegetable farming is also considered as labour-intensive. Labour shortage, which is a result of men out-migration, has been reasoned as the major factor for agricultural transition, besides importance of cash income. Time allocation of household labour, reflecting time contribution of women and men as commercialization proceeds is another factor pointed by these scholars. Adhikari-Thapa shows that male who once migrated might also return back into agriculture as they see the prospect of higher cash income in agriculture. Paolisso and Regmi (1992) had also provided a more extensive study on gender and commercialization of subsistence agriculture by focusing on vegetable, fruit and cash crop (VFC) production. These scholars compared two groups of farmers engaged in both subsistence and market production —one that has incorporated new technologies and practices for VFC, and another that is still using traditional means of production with limited focus of VFC who are considered as non-VFC in the study. Their study indicated that there is an increase in men's time spent in VFC, but decrease in their time in other agricultural and livestock activities in VFC households. They have also shown increase in cash income of both men and women,

with men exercising more control over its use. The study provides a list of gender-disaggregated information on the effects of agricultural commercialization at the household level, like it had aimed to provide, but lacks in assessing how gender practices and norms might have affected gender relations in a changing agricultural context.

Gartaula et al. (2010) on the other hand has focused on male out-migration and its impact on women's participation in agricultural labour and in agricultural decision-making. Using the term feminization to denote women's increased labour participation as labour feminization and role in decision-making in agriculture as managerial feminization, Gartaula et al.'s study shows higher level of managerial feminization in de-facto autonomous female heads-of-households, but less in patrilineal household where parents-in-law are present. Domestic arrangement is therefore considered as an integral factor influencing labour force participation and decision-making, and hence, the phenomenon of feminization. Existing social arrangement within the patriarchal system that subordinates women directly or indirectly is thus considered as problematic in his study. Although conceptual clarity is missing regarding how empowerment can be understood, Gartaula et al.'s stress over women's empowerment as a result of higher decision-making due to men's absence and as a de-facto head of household points towards the difference in women's inability to make decisions during the presence of a male or a senior family member who is considered as the head of the family in a patriarchal society. Despite women's increased autonomy, the illustrations of women wanting to leave agriculture, further shows a context in which women seem to be forced to be a part of agriculture rather than by choice. Such scenario suggests a more complex gender relations where regardless of men's absence in the household sphere, women are unable to make strategic life choices as per their will. Linking feminization of agriculture with that of empowerment, Gartaula et al. questions the existence of feminization as something that has happened to women, rather than how the women would have liked the agricultural context to be. Putting decision-making as the center of analysis regarding women's empowerment like in other studies (Acharya and Bennett, 1983; Adhikari-Thapa, 2013; Gunnhild, 2015), Gartaula et al. has raised a serious concern over women's choice, aspiration and opportunities to make strategic life decisions under the existing social structure.

A study conducted by Malapit et al. (2015) contextualizes agriculture not only as subsistence and market oriented, but point towards the possibility of diversifying production portfolios in Nepal. They suggest that the function of agriculture may not only be to provide food and cash, but also to influence nutritional outcomes by improving dietary quality among household members. Thus, suggesting diversification of production with varying degree of subsistence and market orientation. Given these spectrum of possibilities of productivist oriented agriculture and non-productivist agriculture, similar to Wilson's model of multi-functional agriculture (Wilson, 2007), these scholars point towards gender differentiated roles, decision-making, and resource allocation within the household. Using the WEAI model (IFPRI, 2012), Malapit et al. (2015) focuses on the agency aspect or decision-making. They have hypothesized that production diversity and women's empowerment are positively associated with improved dietary practices and nutritional status. Thus, more diverse production portfolios are favored over less diverse production strategies. They suggest that women empowerment may be able to mitigate the limiting effects of less diverse production strategies. Cunningham et al. (2015) have also conducted similar study on women's empowerment and improvement in child nutrition in Nepal. Their study too concludes that greater maternal decision making, control and autonomy in the household improves child nutrition by improving child-care practices. Although correlations and regressions show women empowerment and its relationship with increased child nutrition, how women empowerment positively or negatively affects diversity in production and increased nutrition within an already mixed farming system is rather vague, as diversification of product with increased nutrition is easily comprehendible.

Studies related to women's role in agriculture in Nepal has made five major contribution in understanding gender relations in the changing agricultural context: 1) presence of gender division of labour; 2) difference in time-allocation in domestic and agricultural work by gender; 3) male-outmigration increasing women's involvement in agriculture, especially due to de facto women headed households; 4) male out-migration has brought women into the wage labour market; 5) male have re-entered agricultural sector when they see the prospect of earning higher income. These propositions highlight ways in which agricultural context could have severe impact on gender

relationship, and in maintaining or transforming the status of women. Based on the literatures, agricultural transition can be understood as a shift from subsistence to commercial, or as a more multi-functional agriculture with varying degree of market and non-market production. Feminization can be understood in terms of labour or managerial feminization, with gendered division of labour and time-allocation for various tasks. Women empowerment on the other hand has been mostly understood from decision-making or agency perspective in Nepal, with most studies on women empowerment in agriculture using the WEAI model. Although WEAI claims to have incorporated resource dimension and achievement functions necessary to understand empowerment as suggested by Kabeer (2001), the WEAI index mostly deals with decision-making or agency. Moreover, the WEAI focuses on identifying the level of empowerment in different indicators, rather than on understanding what empowerment means in the context of changing agricultural structure. Given the limited use of WEAI to comprehend the complexities surrounding agriculture transition, feminization of agriculture and women empowerment, the study considers Gartaula et al.'s (2010) work on feminization of agriculture and empowerment as the basis on which the current study has been conducted. Despite limited view of feminization on which Gartaula et al.'s study is premised, i.e. feminization as an effect of male out-migration, the emphasis given to women's choice and patrilineal structure affecting women's decision-making role, suggests that there is a need for more detailed study. Their recommendation to look at feminization from a wider context of an expanding rural space may be a proposition to consider feminization and women empowerment within agricultural multi-functionality that provides men and women with increased choices and opportunities, but which nevertheless benefits one gender over the other, highlighting a power differential in which the current social order has positioned men and women.

2.10 Conclusion

This chapter presents concepts, ideas and empirical evidences regarding the three phenomena under the study — namely agriculture transition, feminization of agriculture and women empowerment. It shows relationship between each phenomenon, and how they interact with each other. It suggests multi-functional agrarian transition, as a context for the study, where transition is not only linked with food crop to cash crop

transition, but that, which implies diverse functionings. Diverse functionings may occupy a spectrum of productive and non-productive arenas within the rural space that provide opportunity to increase agricultural productivity in one hand with the basic agenda to provide food and cash. And on the other, agriculture serves varied purpose rather than just the provision of food and cash through non-productive activities that also includes of diversifying agriculture for nutrition. Multi-functional framework also emphasizes on the importance of household decision-making rather than just focusing on the structural political economy that influences the agrarian transition. The power of local peasants, both male and female are considered as an important factor in bringing varying degree of change in the multi-functional agrarian structure.

The concept of 'agents' or 'agency', and in particular women's agency is essential in understanding the concept of feminization of agriculture and women empowerment in multi-functional agriculture. Agricultural feminization has been largely conceptualized through empirical evidences as a condition portraying flexibilization and feminization of bad jobs. Although some scholars have suggested possibilities of managerial feminization, most studies assert that social norms subordinate women over men, thus women are mostly clustered in labour feminization, with managerial feminization evident in women de facto head of households. Despite diverse possibilities and choices within the multi-functional agrarian context, women's subordination and marginalization in least preferred work, have left women in relatively worse-off situations. Feminization of responsibility and obligation, along with feminization of labour rather than managerial feminization, is considered as a result of existing social arrangements. Continuity of certain social norms thus impedes women's entry into the larger domain of agricultural multi-functionality. The notion of feminization that is currently used to denote 'traditional, menial, non-skilled, informal, less lucrative, low wage' categories of work, thus lead scholars to examine women empowerment. Since empowerment suggests the need to change the existing gender unequal society, the concept has been used widely as an analytical tool to understand the status of women as well as to identify the arenas of gender hierarchy that has been influenced by social norms and practices. As presented by Jütting et al. (2010) and in the case of American and English cheese-making (McMurry, 1992), the difference in social norms, gendered structures, and women agency of individuals and groups is essential in

determining the value given towards the job, work or any activity. Similarly, in case of Nepal, as shown by Gartaula et al. (2010), the increased presence of women in agriculture is resulting in feminization, with considerable amount of decision-making within agriculture. However, women's emphasis on leaving agricultural sector shows that the decision-making aspect might still not provide full understanding of the empowerment concept as suggested by Kabeer (2001).

Feminization and empowerment should thus include of at least two understandings —1) Increased number of women in certain sector is considered as feminization, and such type of feminization is often placed as bad quality work; However, given the context in which the study is being conducted, despite large number of women, the work may not be considered as of bad quality; 2) The increased number of women in better positions such as that of decision-making as a proxy for empowerment or managerial feminization, may provide a partial understanding of empowerment if the aspect of decision-making is not comprehended within the larger domain of gender hierarchy that places women and men within a broader agricultural space that is constantly changing. Thus, feminization and empowerment should be placed within a broader spectrum of multi-functional agriculture that provides opportunities and choices for men and women to live a life that they value, by also challenging the existing social arrangement in which they are sometimes forced to make choices. Understanding the underlying gender inequalities that prevail within the society is thus necessary to capture what the meaning of the concept of women empowerment entails. The study thus uses three inter-related dimensions of empowerment to study how resources has been used by women in particular within the broader domain of multi-functional agriculture of productivist and non-productivist spectrum. Resource use along with the process of decision-making in which women are positioned to choose and value certain outcome, has been considered as crucial to examine outcomes at two levels: i) achievement of practical needs, and ii) achievement of strategic needs. Achievement of strategic gender needs that results in transformation of gender power relations. In simple terms, practical gender needs does not challenge the existing social system, nor do they seek change, whereas strategic gender needs suggests an awareness or need for change of the unequal social setting; thus, highlighting a situation that needs transformation.

CHAPTER THREE

3. METHODOLOGY

This chapter presents the overall research methodology used in a socio-anthropological case analysis of social change, mainly changes brought about in gender relations as a result of *Junar* plantation. The micro-level case study includes of in-depth study of the three phenomena, namely agricultural transition, feminization of agriculture, and women's empowerment in agriculture. Using ethnography as a research approach, this chapter highlights on how different tools including of participant observation, key informant interviews, narrative interviews, and questionnaire survey were used to collect data from the field. With multiple periods of ethnographic fieldwork, different data collection tools have been used concurrently. Questionnaire survey was used to collect data on the labour force participation by sex to gather numerical and measurable accounts of women's involvement in agriculture. Decision-making as a proxy for women's empowerment also includes of survey data. Qualitative data collection tools have been used to gather more detailed information on feminization and women's empowerment. This chapter will further elaborate on how and why certain data collection tools, methods and philosophical viewpoint were selected for a mixed-method research. It also presents the scope of each research methods and its limitations, and underline the use of triangulation to compare, contrast and validate the data. This chapter also briefs about the researcher positionality, and its influence in overall research design. Finally, the chapter also includes of the profile of the study site and brief profile of narrative interview participants along with criterions used to select survey and narrative interview participants.

3.1 Philosophical Foundation of the Research Design

In order to understand social change related with gender transformation in an agrarian context, the study has used transformative research design. Transformative research design is used to understand social injustices and complexities surrounding

multiple realities that are evident in the society (Mertens, 2003:135-164; Creswell, 2009:73-75; Hesse-Biber, 2010). Transformative research focuses on oppression and discrimination based on class, caste, gender, economic status, geography and so on. According to Mertens (2003) transformative scholars recommend researchers to adopt explicit goal for research, which is to create a more just and democratic society. Such worldview places high importance to the lives and experiences of those who suffer from oppression and discrimination. According to Creswell (2009), since transformative mixed method seeks transformation it also uses a theoretical lens as an overarching perspective that guides the overall research design. Given that the current study was premised under the problematic of 'feminization' — a phenomenon that many scholars have suggested as a result of discriminatory practices, the study has its foundational goal towards understanding social change related to women's empowerment in agriculture. The concept of 'empowerment' has more direct link with the concept of power and oppression resulting in women's subordination and marginalization. In order to understand women's lives, the concept of empowerment has been used where women had previously been disempowered or denied choice and opportunities in the first place as suggested by Kabeer (2001). Men on the other hand end up in a better situation than that of women, creating gender gap in access to resource use and control due to the existing social arrangement.

Mertens (2003) thus argue that the transformative-emancipatory research approach is better compared to the pragmatists' approach of using mixed-method, as pragmatists use mixed-method without thorough consideration for why and for what purpose they are using mixed-method. According to Mertens (2003), inadequacy of pragmatics to explain "whatever works best or whatever is practical but for what and to what end?" is of concern to transformative-emancipatory researchers. The purpose of research that seeks to understand discriminatory practices, thus emphasizes on the oppressed as the subject of inquiry, and also emphasize on various standpoints of the subject under study. Although feminist standpoint perspective is critical in uncovering women's issues, the argument that women hold multiple standpoints has resulted in post-modern feminists to become wary about the essentialist claims in which women are considered as a separate category (Leavy, 2007). Postmodernism aims at deconstructing the notion that was constructed in support of modernism that resulted in grand theories and grand narratives. Postmodernist paradigm examines how social life is produced and

privileged by those in power (Leavy, 2007; Hesse-Biber, 2010), thereby questioning the validity of the claim of truth itself. They criticize standpoint theory for ignoring the complexity of power relations in which gender identity and gendered experiences are embedded. Feminist postmodern theory claim that it provides an alternative way of knowing that transcends through the limitation of feminist empiricists and standpoint theorists. Feminist post-modernists consider women's lived experience and women's daily struggle as distinct but which needs separation from the prevailing binary nomenclature of male and female, in order to restrain from feeding in knowledge into the binaries that sustains rather than transforms the prevailing societal differences. Resistance to dominant form of discourse is therefore an important feature of post-modernism (Hesse-Biber, 2010). They blame the other two approaches as sustaining women's oppression by giving credit to the essentialist logic and further polarizing gender binary. It also challenges the belief in a single subject that is stable over time and asserts the existence of variation in socially constructed subjectivity with the goal of deconstruction. They emphasize on discontinuity, plurality and disruptions rather than social cohesiveness. It encourages the use of reflexivity to gather multiple truths, voices and layers of social reality.

Amidst the effort to comprehend the complex texts on [feminist] post-modernity, the philosophical basis on which post-modernists eloquently accepts the inability to comprehend as an ethics (Lather, 2007: 160), is in itself the starting point of any knowledge creation. Despite emergence of post-modern theory out of the limitations of other two feminist approaches, many feminist scholarships criticize post-modern theory of dispersing feminist effort (Leavy, 2007). According to Lather (2007), post-modernism offers double(d) science which is driven by deconstructive logic that offers neither guarantee nor counter axiology. Acknowledging the criticism of post-modernism and the double (d) science, the current research is influenced by the deconstructionist approach that uses the existing concepts but at the same time challenges the existence of it. Especially with the use of the term 'women', constant comparison of women's lived experience with that of men has been essential for the study, while also refusing to fall into the trap of gender binary. Effort to make comparison of women's lives that constitute of different social, economical, cultural, geographical, generational background has been an aspect of the study to revert the trap of gender binary. Conscious effort to revert essentialism by using as well as not using women/men

distinction have played critical role throughout the research process of data collection to analysis and finally presentation of the findings as a discourse. The concept of feminization already creates dichotomous thinking, influencing data to be gradually incorporated within essentialist mode of data interpretation. However, such mode of thinking has been consciously curtailed at every layer of data analysis to limit the influence of existing discursive practices and at the same time adhering to and at times challenging the prevailing notions of interpretation. The researcher is more inclined towards the post-modern feminists thoughts and ideas that suggest the importance of power in creating gender relations that currently exists within the agricultural context, and aims to understand such power relationships in order to understand norms and social structure that reinforce or challenge gender hierarchies.

3.2 Mixed Method Research Design

Many feminist researchers have argued in favor of mixed-research method (Mertens, 2003; Hesse-Biber, 2010) as an approach to transformative-emancipatory research. Mixed method research design includes of integration of both quantitative and qualitative data within the study to capture the breadth and depth of the research problem. Literature review on women in agriculture also shows the use of mixed-method as the most appropriate methodology to gather generalizable accounts of women's condition in agriculture, and to further elaborate on the conditions that differentiates women's experience. Significant number of studies on women in agriculture conducted in Nepal (Acharya and Bennett, 1981; Gartaula et al., 2010; Tamang et al., 2014) and abroad (Song et al., 2009; Radel et al., 2012; Alkire et al., 2013; Abdelali-Martini and de Pryck, 2014) has provided methodological insight on using both qualitative and quantitative methods for data collection and analysis. Mixed-method research design is mostly used to complement and supplement the data that has been collected through the other method. Use of quantitative method and qualitative method in a single study is determined by the research problem, and the way each method facilitates in gathering information necessary to understand the problematic under study.

In the current study, quantitative method with questionnaire survey has been used to collect data on the labour force participation by sex to gather numerical and

measurable accounts of women's involvement in agriculture, and to gather measurable account of decision-making participation as a proxy for women's empowerment. Survey has also facilitated in gathering demographic variables, as well as the degree of citrus crop plantation by each household. Quantitative data have been important for the study as it provided a glimpse of gendered participation in a mixed-farming system. It facilitated in understanding the extent of women's participation in agriculture in association with changing degree of market-orientation of the crop/livestock that is bounded by productive/non-productive spectrum in a multi-functional agrarian context. Quantitative data were thus collected to examine whether men and women participation changes with the value and/or functions associated with crop/livestock along with the intensification of crop/livestock market-orientation in the study site.

The study further explored the quantitative data on participation by gender in agriculture by asking 'why' and 'how' gender-based participation in agriculture varied in order to understand the nature of feminization in a mixed-farming system. Qualitatively driven mixed method approach, thus utilized quantitative survey findings as a basis on which women's lives could be better understood. Qualitative method on the other hand was used in two ways: first, to gather contextual clarity of the agricultural setting of the study area, and the degree of market-orientation of crop/livestock; and second, to explore the conditions that promoted or hindered women's participation in each domain of agricultural production. Qualitative data was thus used to explore social norms and social arrangements that facilitated gender-based practices in use, access, and control over different resources that was deemed necessary for the involvement in each crop/livestock production. Complexities related to factors influencing gender hierarchy and women's subordination that was undermined by the quantitative survey was hence gathered by using qualitative method. Given that the qualitative data provide a detailed understanding of a problem while quantitative data provide a more general understanding of a problem (Creswell, 2009), the study was suited for mixed-method inquiry. Sequential mixed method followed by concurrent qual-quant mixed-method design (Creswell, 2009: 31) was finally implemented to adhere to the need of the study.

3.3 Research Approach: Ethnography

Ethnography attempts to understand another life world by studying lived experience, daily activities and social context of everyday life from those being studied (Buch and Staller, 2007:187-221). In doing so, ethnographers immerse in the natural setting where social life occurs to gain understanding of the unfamiliar world. What the locals deem common is of high interest to the ethnographer in order to make sense of their day-to-day lived reality. For the current study, ethnography approach was selected in order to understand the complex world in which men and women live, whereby power is always at play in day-to-day life. Ethnographic setting was considered as the most appropriate approach as it includes of participant observation that aids in interpretation of the lived reality from participants point of view. Entry into the study site with ethnographic fieldwork also assisted in developing survey questionnaire that was suitable for the study site. Hence, every data collection tool was used under the ethnographic setting, except for few key informant interviews that were conducted outside of the ethnography site.

According to Buch and Staller (2007:187-221) feminist ethnography includes of i) focus on women's lives, activities and experiences; ii) ethnographic methods or writing styles informed by feminist theories and ethics; and iii) ethnographic analysis interplay between gender and other forms of power and difference. Since gender and power becomes important in feminist ethnography, diversity among women that may be a source of power differential should equally be captured. Therefore, the study has made a conscious effort to understand lives of women from different background. As presented by Buch and Staller (2007:187-221), ethnography not only provides a space to understand differences across lines of gender, race, class and sexuality but also how women subscribe to and resists dominant discourses and gender norms. In this sense, ethnography has not only aided in gathering information about differential engagement of men and women, or women from differing background in subsistence and cash crop production but has also provided a space in which resistance of women towards the dominant worldview can be studied. Thus, ethnography also became a suitable approach for endorsing post-modern views as it provided a platform for both confirmation and confrontation of the dominant discourses within women in agriculture scholarship. According to Murchison (2010) 'ethnography also allows the researcher to

observe and to experience events, behaviors, interactions, and conversations that are the manifestations of society and culture in action. Therefore, effort was made to live with and participate in lives of men and women engaged in a mixed-farming system. Attention have been given to gender dynamics across generation as suggested by feminization of agriculture scholarships to gather lived experience of men and women from different age group.

3.3.1 Insider/Outsider Perspective

Ethnographers use the self as much as possible (Buch and Staller, 2007:187-221). Therefore, no other research approach brings the researcher and the researched closer than ethnography. Although varying degree of researchers involvement in day-to-day activities determine the level of ethnography, every ethnographer practice immersion. According to Hesse-Biber and Leavy (2007: 245-251), ethnographic researcher could either participate as complete observer, observer-as-participant, participant-as-observer, and complete participant (Buch and Staller, 2007:202). Regardless of four categories of participation, they suggest that a single category of role may not provide the most appropriate researcher role, and that each researcher might have to choose between these types of roles as deemed necessary by the research question, theoretical position, and field demand. However, they suggest that the ethnographer should be aware of the type of participation that they are engaged in, in order to carefully balance the alternatives. In doing so, they suggest the researcher to understand the dimension of insider/outsider role.

The ‘insider’ versus ‘outsider’ debate is considered critical for qualitative researchers to conduct fieldwork. The debate has been stimulated further by feminist discourse on methodology, by providing a crucial insight regarding the power dynamics and differentials between the researcher and the researched (Napels, 2003). According to Naples, these notions are not fixed, but fluid. Given the fluidity of the researchers position, Naples suggests that the researcher can never be fully inside or outside the ‘community’, and that there is constant negotiation and renegotiation to reposition oneself based on self-perception under varied socially constructed distinctions. Other scholars has also provided similar stand with the notion of the ‘space between’ to suggest inclination towards both or none (Dwyer and Buckle, 2009). Naples (2003)

suggests researchers to be sensitive to issues of power and control in the research process, and proposes for more reflexivity to balance the power between researcher and the researched. The critique of researcher's role have been pointed towards being more conscious of dual role that may lead to possible biasness in the research. Dwyer & Buckle (2009) on the other hand suggest that the challenge of insider/outsider should be viewed not as a status of researcher, but as the ability of researcher to be open towards the experiences of research participants and his/her commitment to present participants experiences without bias. Buch and Staller (2007:204) further stresses that if a researcher is a woman then the community members may expect her to play roles similar to that of other women in the community. Often time the researcher was considered as similar to women in the study site, and at times the differences were considered more stark. Comparing the researcher with women in rural areas, many women suggested that women in the rural areas need to know how to cut grass, but that skill would not be necessary for someone who lives in an urban area. Such comparisons between women in the study site and women living elsewhere provided much deeper meaning towards the social conditions in which women's life was embedded. As a female researcher, the researcher had to confront views, ideas and social norms that surrounded women. Some of such confrontation provided much detailed perspective on how women were viewed and at times it resulted in resistance to confront when questions were asked about sexual activity, as not to create a scene that could in fact impede research stay. The practice of ethnography thus provided an opportunity to understand how power, negotiation, and resistance interact in day-to-day life.

3.3.2 Reflexivity as a Research Approach

The difference between the ethnographer and the informant is where the concept of reflexivity fits in. While reflexivity was considered as a method that promotes more ethical qualitative research (Wasserfall, 1993), the limitation of self-reflexivity (Lather, 2007) presents a dilemma of getting lost. According to Lather, getting lost means critiquing a certain confidence that research must muster in the audit of culture. According to Wasserfall (1993) reflexivity questions the conventional notion of objectivity, as the research process is established on deconstruction of author's authority. However, it can be used to deal with the unnecessary power difference between the researcher and the researched, and to become compassionate and non-

exploitative in relation with the researched (Wasserfall, 1993). Reflexivity is also a tool used to control the acquisition of knowledge as expressed by Wasserfall. It deals with influence over research question, research settings, research process, subjects of inquiry, and also the final outcome of knowledge. With reflexivity it is argued that the researcher could enhance the depth and breath of understanding the topic, the process, the participants and one's own position as a researcher. According to England (1994) the everyday life of the researched is doubly mediated by researchers' presence and their response highlight influenced, which is a major challenge in collecting fair data. Nevertheless the use of more reflexivity was considered necessary to enhance the research. Lather (2007) on the other hand critique reflexivity by troubling the possibilities of 'coming clean' through use of researcher reflexivity to become a fully conscious individual. Acknowledging both the limitation and the uses of reflexivity, the researcher has practiced reflexivity during ethnographic fieldwork and also throughout the entire duration of research during which the researcher got the opportunity to understand how power works in everyday life situations.

As the research progressed, the researcher became more and more reflexive, but at one point of time, the researcher felt that the use of reflexivity might not provide any further input. Researcher's experience of reflexivity was in-line with that of Leavy (2007) who suggested that fieldwork is done to get outside of ourselves and that we ought to be careful not to get too involved with reflexivity. England (1994) has also claimed that reflexivity can make us more aware of asymmetrical or exploitative relationships, but it cannot remove them. But balance was equally needed to use reflexivity throughout the research process. Given that the study's main focus was on understanding social change brought about by citrus crop cultivation, the study began by trying to understand the agricultural context where citrus was considered as a high value crop in the study site. At initial stage of research, the first contact point in every field site included of men, and men referred other men as the lead citrus farmer, citrus nursery owner, and citrus trader resulting in less contact with women citrus farmers. Reflexivity at initial stage was however needed to mediate between selection of men and women participants as key informants. Similarly, in most households, men's presence resulted in men being referred to as citrus farmer, bringing men to the forefront with the researcher. Although, the social arrangement provided how the role of men and women had been established, access to women participants to talk about citrus farming was difficult.

Reflexivity thus helped the researcher to change the focus of the research from 'citrus' to that of 'agriculture', especially while starting a conversation with women farmers. As the research progressed, the researchers newly acquired knowledge further influenced the way questions were asked to women and men belonging to different categories of households.

3.3.3 Positioning 'self' as an Ethnographer

Reflexivity has been one of the key tools that have helped the researcher to grow as a researcher. From not 'being' one amongst them (the subjects of inquiry), to acknowledging differences, despite being a woman and from same nationality, practice of reflexivity has provided self-awareness, self-knowledge, and ability to constantly be a self-critique along with the capacity for critical (re) visioning which is considered important by feminist methodologists (Harding, 1996; Hesse-Biber and Leavy, 2007).

Coming from an affluent Rana family, with a history of national dominance attached to the family name 'Rana', the researcher sometimes found her in an awkward position during fieldwork. Regardless of being a woman, the researcher was always positioned as a 'Rana' from upper caste family in Nepal. The researcher was quite aware of her family name and its implications in creating a boundary between the researched and the researcher. The self-awareness of researcher positionality helped her immerse in rural community and families with ease, not immediately but overtime. The researcher was consciously making an effort to minimize the barriers by trying to live like people in rural Nepal, by wearing the kind of clothes they wore (but always looked much cleaner as her engagement in agricultural work was minimal, resulting in women comparing their clothes with that of the researcher), and wearing slippers rather than a comfortable hiking shoe (which provided conflicting thought as the researcher observed rural women wearing converse shoes), or by working in the farm (while their own sons and daughters or sometimes daughter-in-law did not provide labour input) whenever the researcher got the opportunity. This positionality as an 'insider' might be questioned at times, by considering it as over identification, over rapport, and 'going native as pointed by Glesne (1999) as cited by Dwywe and Buckle (2009), but according to the researchers experience these simple changes in her 'being' as a researcher, helped in bringing down the existing walls created through caste, class and gender identity.

Researchers presence in the rough roads of Nepal, the difficult terrain, and pastoral way of life was always intriguing to the people she approached. 'Why was I, a woman all by myself walking through the dangerous roads, more specifically the hills', was a poignant question from every individual who passed by. The question was posed out of curiosity and concern for researchers (being a woman) safety. Although gaining access to the field included of gatekeepers, they didn't always accompany the researcher. According to Creswell (2009) gatekeepers are individuals at the research site that provide access to the site and allow the research to be done According to Buch and Staller (2007) 'ethnographers frequently refer to individuals who hold key positions either formally or informally within the environment and help facilitate the researcher's access to people and information as gatekeepers'. Giving the difficult terrain, integration and entry into one village did not necessarily integrate the researcher immediately into the other village. For each separate village or locality the researcher was new, requiring rapport-building phase. Many times use of previously known informants name (mostly men) along with researcher's past experiences in other villages was an access pass into the new village. The other question that followed every time after knowing the whereabouts of the researcher was her full name. The family name would then induce further conversation, in rather peculiar manner. If the subject were from a lower caste hierarchy than the researcher, then the subject would avoid asking the question of where the researcher is planning to stay. If the subject were from an equal or higher caste (i.e. Chhetris and Brahmins), then they would probe about researchers stay, and offer her a place to live. However, this was not always the case, with exceptions the researcher even lived with families from lower caste, who hesitantly asked whether the researcher would like to stay with them although they did not have an extra room. The genuine concerns and welcoming behavior of rural people, with constant probing of personal questions, and personal history, always brought the researcher closer to the researched. Many times even if the researcher tried to detach herself (especially when personal questions regarding researchers life was asked), the rural context in which the researcher lived in for days, weeks and months, left the researcher with limited option of detachment from the researched.

Therefore, rather than the dichotomy of insider and outsider, the researcher found herself in what Dwyer and Buckle referred to as the 'space between'. Questioning the

very existence of pure objectivity, and opening up more space for subjectivity, leading to strong objectivity as emphasized by Harding (1987), but which is also doubted by Leavy (2007). The influence of rapport building and reflexivity and the difference between the researchers initial contact with the researched had on questions that was raised, and answer that was received after familiarity was stark. Despite researcher being spotted as an outsider, the sense of being an outsider slowly disappeared as the researcher was seen in the village often, and over time, only to reappear once again every time a new person was met. This sense of 'knowing' the researcher, from the researched point of view, increased the level of comfort and trust, which provided an opportunity to communicate in a much more relaxed manner. The immersion also helped to limit the earlier barrier of communicating with people from different caste and ethnic background, and with women from different background. The initial visits provided inadequate acquaintances with women, as men were dominant in most social and organizational setting, including the households, where men would most likely deal with the outsiders. However, this awareness and constant reflexivity was more in terms of researcher's own positionality of being superior and dominant in their perspective, or as women who may be vulnerable, which the researcher had to repetitively work towards undoing, in order to limit the way in which these instances could shape the research. The problematic of 'betweenness' explicitly stated by England (1994: 87), was constantly felt during fieldwork as the researcher constantly positioned and repositioned herself to ease the research process.

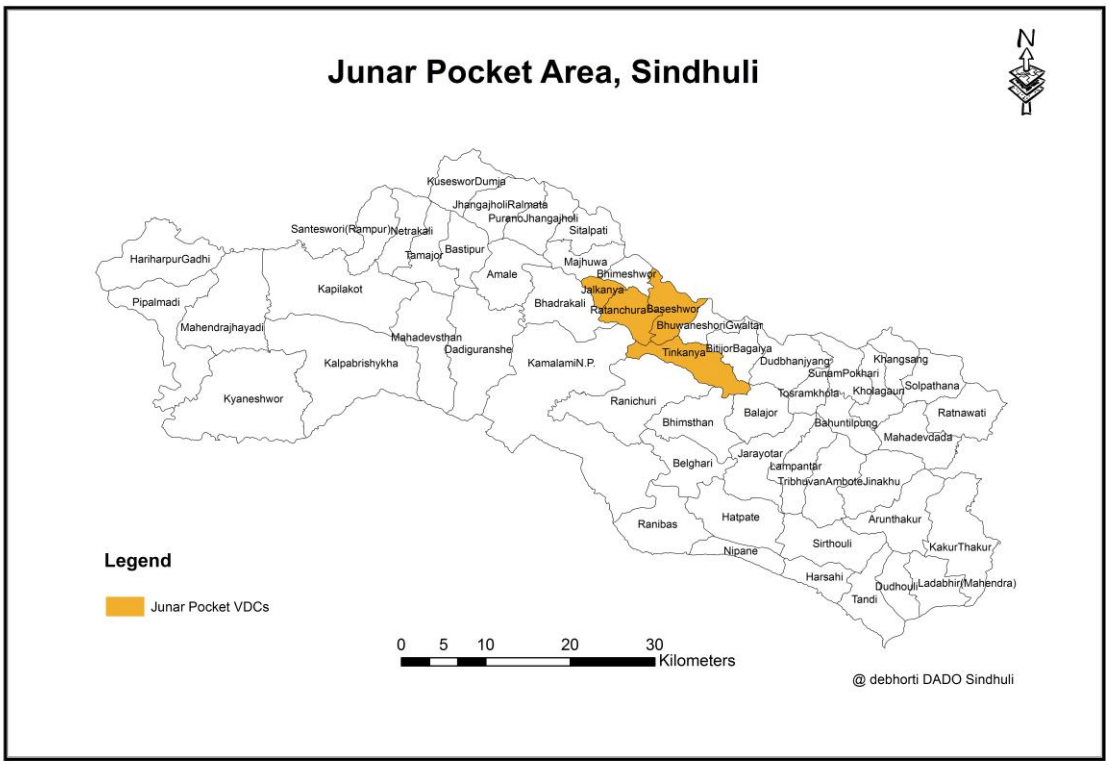
3.4 Locating Ethnographic Study Site

Site selection during the initial stage of study was made using two criteria. First, the site should present the existence of agriculture transitioning from staple or cereal crop to cash crop farming [also having export potential], to highlight changing agricultural context. Second criterion was male migration that might suggest the existence of the phenomenon 'feminization of agriculture'. These criteria were based on the literatures suggesting the problematic of men occupying the space of agriculture when there is opportunity to earn higher, or that men return back when they see such opportunities. The assumption at this stage was that male migration could open up space for women to participate, but their choice to return or stay in agriculture might impede rather than promote women's integration into cash crop farming. With these

criterions and assumptions, Sindhuli district was selected. Selection of site was also influenced by modest research budget, which limited the options for selecting far-reaching areas, which might have been more costly to travel.

Sindhuli district, which lies in the central development region of Nepal in Province No. 3 is popularly known for *Junar* production. Out of 60 citrus fruit producing districts as of 2011/2012, Sindhuli had the highest production (9737 metric tons) and area coverage of 1476 hectare (MOAD, 2012). In terms of migration, total of 27,793 males and 1086 females had migrated since 2008 to 2014, excluding individual applicants from Sindhuli (MOLE, 2014). Thus, Sindhuli was selected as the potential area of study since it fitted into both the criteria.

Figure 3. 1: Map of Study Site



Source: DADO, (2014)

After selecting Sindhuli district as the study site, another stage in the process of site selection was to determine locations that demonstrate the persistence of the phenomenon to be studied. Key informant interviews with District Agriculture Development Office (DADO), members of Central *Junar* Cooperative, *Junar* facilitator, and key *Junar* farmers met during the first phase of field visit facilitated in selection of

the locality for ethnographic field work. Without fixing the destination, participant observation accompanied by the facilitator led to the initial entry into the field. Similarly, many times citrus farmer accompanied from the market, municipality or other rural spaces to their rural home or to other nearby villages, which gave an easy entry into the field. However, given the landscape and geographical terrain that distanced one village from the other with forestscape in between the localities, lone travel was part of the ethnographic fieldwork. Availability or non-availability of public or private vehicle for commuting to the field site often led to change of plans. Physical map of the study site was frequently developed in order to make sense of the present study site and possible future locations. Locations determining compact plantation of citrus as suggested by the participants, and as confirmed by observation was the basis for site selection from the existing citrus pocket areas as given in Figure 3.1. From visiting localities that were considered as the most citrus producing area, to those, which are not, and those which were formerly, constant comparison of location was done during site selection.

Purposive sampling was used to identify area or cluster that had citrus plantation for selecting sample population and further breakdown of multi-sites sampling. Kubindey in Tinkanya Village Development Committee (VDC), Ratanchura in Ratanchura VDC, and Nakajoli in Baseshwor VDC were identified as the point of entry for ethnographic fieldwork. These localities were selected based on most referred and suggested sites that have had compact citrus plantation. These three VDCs are adjoining VDCs extending to geographical boundary of ninety-one kilometers. Irrespective of geographical boundary of each VDC extending to forty-three kilometers in Tinkanya, twenty-six kilometers in Baseshwor, and twenty-two kilometers in Ratanchura, the social space of each village transcends the other, given its proximity to the nearby villages, or in some cases regardless of spatial distance, labour need in one area is fulfilled by the other. Geographical boundary of ninety-one kilometers was restricted as a space for spatial mobility as an ethnographer. Since situating the field was necessary for participant observation, the space that transcended beyond the given geographical boundary was avoided. However, areas that had similar features or characteristics within the given boundary were identified as sites for ethnography. One such feature that had significance for the research included of wage labourer. The settlement of wage labourers extended beyond that of the given locality. For example, people from

Ratanchura traveled to Baseshwor to mobilize labour from Haibar, while people from Ratanchura came as labourers in Tinkanya. Some labourers also came from Bhuwaneshwori VDC or Ranichuri VDC, but ethnographic field was not extended up to those VDCs. Interviews were conducted with such labourers to understand wage labour pattern. In this manner, the selection of informants, study area, study population, was gradually limited by the ethnographer, but at the same time opened up for people who fit into the overall research design. The ability of participants to provide answer to the research problem then became the guiding principle for selection of sample. Post-modern philosophy thereby guided in selection of sample, where despite self-imposed geographical bounded-ness, geographical decentered-ness was equally prioritized (Falzon, 2009).

Multi-sited ethnography was chosen as the basis for data collection from diverse group of sample. As asserted by Falzon (2009), multi-sitedness does not mean just sites but the spatialized (cultural) difference that emphasize on difference between the sites rather than the number and distant locality of the sites. This explanation also justifies the need for ethnographer to move around, otherwise there is no point in moving around either. The 'space' in which ethnographer base their study is socially produced rather than geographically as suggested by Falzon. Therefore, selection of sample in the current study has been guided by two components, one having the feature of citrus plantation and another having wage labour feature. Purposive sampling to include variety of cluster settlement comprising of citrus producing area and wage labourer formed a major part of data collection. Distinction of labour type and settlement as study progressed necessitated selection of sample villages, or smaller settlement areas as per these criterions. Smaller settlements in and around the mentioned ten villages were purposively selected for the study. These selections were sometimes based on key informants and many times based on heuristic knowledge gathered by the researcher.

Multiple villages from three VDCs, Baseshwor, Ratanchura and Tinkanya were selected. Although all three VDCs fall under one single district, and may be considered as a single site study, from ethnographic point of view, the diversity of each locality presents these location as multi-site field sites. The features of field site as presented in Table 3.1 presents three features that have promoted or hindered in agriculture transitioning from cereal crop production to citrus crop in the given localities. These

three localities, which were governed as a three separate VDCs of Sindhuli district, have recently been formed as three separate wards under Golanjor rural municipality (Golanjor *Gaupalika*) after existing VDC's were dissolved on March 10, 2017 to form new lower administrative division in Nepal. However, since this study was initiated prior to these changes, the study will still use terminologies used during the previous administrative division, as was reflected during the fieldwork.

Table 3. 1: Key Features of Ethnographic Study Site

Villages	Road distance from District HQ to VDC	Type of land			Status of commercial vegetable farming
		Khet	Bari	Bari turned khet	
A. Baseshwor					
1. Nakajoli	18 km	✓	✓	-	Since early 2000
2. Haibar		-	✓	-	Not started
B. Ratanchura					
3. Nayakharka	7.2 km	✓	✓	-	Since 2013
4. Khaniyakharka		-	✓	-	Since early 2000
5. Bijayachaap		✓	✓	-	Since early 2000
6. Ratanchura		✓	✓	✓	Since mid-2000
7. Hirding		✓	✓	-	Since mid-2000
C. Tinkanya					
8. Tallo Kubindey	18 km	✓	✓	-	Since 2014
9. Majh Kubindey		-	✓	-	Since 2014
10. Malinge		✓	✓	-	Since 2015

Source: DADO, (2014); Ethnographic Field Study, 2015/16

Note: HQ= Head Quarter

The features shown in each locality have been presented to conceptualize the difference within and between sites. However, it should also be noted that the distance presented in Table 3.1 is the average distance from the district headquarter to the VDC office, and not the distance towards each village. For example, the distance from Haibar and Nakajoli is shown as 18 km as per the literature (DADO, 2014), but in reality Haibar was an hour away [walking distance] from Nakajoli. Similarly Haibar did not have *Khet*, but people living in Haibar did own *khet* in other nearby localities. Likewise, some households in Haibar produced vegetables and sold it in the village, but they did not produce it with the mindset of commercializing vegetable farming which meant selling

the produced vegetable to far away market as per local understanding. Compared to other areas, Haibar and Malinge are water scarce sites. With these differences and similarities in each locality, Table 3.1 has been presented to generalize and at the same time limit the generalizable feature that persists in the study site.

3.5 Sampling Technique and Procedure

In total, 140 households were included in the survey. All the households within the purposively selected sites were initially considered as a part of the study population, thus every household was given an equal chance of being selected for the survey. However, there were some areas within the citrus producing areas which were not appropriate for citrus production, thus households belonging to those sites were purposively not included in the sampling frame. Given the limitation of random selection of households in the study area, the researcher used purposive sampling to select survey participants that could more appropriately explain their involvement in citrus crop plantation besides other crop/livestock production in a mixed-farming system. Hence, there was a non-probability of households being selected as a survey participant if that household was located in non-citrus producing areas and had land that was not suitable for citrus plantation, although geographical boundary considered those households to fall under citrus producing areas. Households that had only one individual, or which did not have both men and women were also not selected for the survey. Thus, purposive sampling was conducted to include survey households that could fit into two criteria, i) households involvement in citrus farming, and ii) households having both male and female members of the family. The study considered these two criterions as necessary to understand gender relations in everyday life in a multi-functional agricultural context.

With multiple periods of ethnographic fieldwork, different data collection tools have been used concurrently. Questionnaire survey has been used to collect data on the labour force participation by sex to gather numerical and measurable accounts of women's involvement in agriculture. A total of 140 households were purposively selected using cluster-sampling technique. Other data collection tools including of participant observation, eleven key informant interviews, and twenty narrative interviews have been used to gather more detailed qualitative information on

feminization of agriculture and women's empowerment. Since the study used ethnographic approach for data collection, the researcher concurrently used various sampling techniques at multiple stages of data collection.

3.6 Data Collection Methods

3.6.1 Participant Observation

Tool used mostly by ethnographers includes of participant observation in which the ethnographer is involved in prolonged observation of day-to-day lives of people along with one-on-one interviews (Creswell, 1998). Participant observation also provides the researcher to move through being a complete insider to being a complete outsider. Ethnography involving of participant observation provides researcher to participate in events, activities and day-to-day happenings for understanding the context in which one lives. Citing Zelditch (1962), Creswell (1998) has restated three importance of participant observation: i) enumeration to document frequency data, ii) participant observation to describe incidents; and iii) informant interviewing to learn institutionalized norms and statuses. Given these three importance of participant observation, the current research have used ethnography to conduct survey interview to gather frequency data on feminization of agriculture, observed events and activities as described by the participants, and also conducted key informant interviews to understand history of citrus plantation and its political economy context. Social practices during incidents including of major seasonal agricultural work such as plantation and harvest were also recorded. Participation in day-to-day activity such as collecting fodder, livestock rearing to seasonal work of plantation, harvesting and being a participant in workshops and trainings organized for farmers were significant for data collection.

As a participant observer, the researcher carried notebook most of the time, many times the researcher even used smartphone to note the frequency of men and women involvement in the field, in addition to type of work that they were doing. Many times field notes was developed later in the evening. In case of tape-recorded files, sometimes the files were transcribed immediately, but most of the time it was transcribed after each fieldwork. Participant observation served as a tool for making sense of the information being gathered using other tools. Triangulation of information provided through

interviews was possible with participant observation. Verbally communicated information as provided by both men and women during narrative interview, survey interview and key informant interview could be contested through observation. This showed that the experience and the meaning of certain experiences were influenced by the discourse as suggested by postmodernists. What was observed by an outsider [researcher], with the use of participant observation to interpret the meaning of the observation, provided a space for knowledge generation that could question the existence of power in generating narratives and story-telling. Using participant observation as a tool under ethnography, it allowed the researcher to 'examine how people's actions compare to what they say about their actions in ideal situations and their thoughts or opinions on particular topics. In many cases, actions and behaviors in particular situations differ significantly from those observed or predicted by other research strategies' (Murchison, 2010).

3.6.2 Key Informant Interview

Key Informant Interview (KII) included of representatives from District Agriculture Development Office (DADO), members of *Junar* cooperatives and *Junar* facilitators. Junar facilitators were especially trained to perform various tasks under Junar cultivation, and were involved in facilitation of citrus related activities in the field including of assisting in research related to citrus diseases and citrus pest management. Eleven key informants, including of two women key informants were selected based on their ability to provide history of *Junar* development and contextualize agriculture transitioning in the study site. Incidents and instances regarding agriculture transitioning as well as emphasis on women's role in agriculture have been duly noted from each key informant interview. Information provided by key informants have been used to enhance the research context in which the researcher could generate inferences and further explore the concepts, themes, and phenomenon revealed by the interview. One key informant phone interview was also conducted with an expert who had worked extensively in citrus cultivation. Although KII was an integral part of data collection, it was used as an assistive data collection tool rather than as data that aid in answering the research question. KII have shaped other data collection tools including of participant observation, survey interview and narrative interview. It has also influenced in selection of secondary sources of information. At time, key informant interviews turned into oral

history narratives. KII was conducted using semi-structured interview method. As asserted by Buch and Staller (2007:209), ethnographers often rely on key informants but rarely exclusively rely on information from these individuals. Information gathered from key informants included of second hand account of the origin and history of *Junar,* and its political economy. These individuals have also assisted in selection of sites most relevant for the study, and provided further names of individuals who should be consulted. Thereby snowball sampling technique was used at times to select key informants as they had information on historical facts that otherwise would not be provided by any other farmer.

3.6.3 Survey Interview Questionnaire

Household survey was conducted to gather demographic data, and basic information on citrus production and economic activities, land size and labour force participation in agriculture. Total of 140 households were included in the survey. Households that had presence of both men and women were selected to gather frequency data of women and men engagement in a mixed-farming system. Male and female members who were considered as most actively engaged in agriculture were purposively selected in households that had at least one male and one female member. Survey interview also provided a basis from which interviewers for narrative interview could be selected. Survey was also used to collect data on decision-making as the proxy for empowerment in agriculture. Face-to-face survey interview was conducted throughout the research, with the help of conversation style interview technique. Survey interview was conducted concurrently while participant observation was conducted as part of ethnographic field stay. Information gathered from survey interview has been used to demonstrate the phenomenon of feminization of agriculture through extensive ethnographic fieldwork. While survey sometimes provides obvious facts and explanation of feminization, ethnography analyses complex social phenomenon of feminization (Murchison, 2010). Use of ethnography as well as pilot test of the questionnaire survey has assisted in narrowing down the survey questions. Survey interview has been crucial to substantiate and complement the ethnographic information. Pilot test of the questionnaire survey was conducted in early 2015, and after revision of the survey questionnaire, the final survey was conducted at different periods from late 2015 to 2017.

Survey was mostly used to collect sex-disaggregated information on current labour allocation within the household and number of hired labourers in each production domain of agriculture. Decision-making as a proxy for empowerment has been measured by asking few questions regarding four-production domain of agriculture to the most active man and woman in agriculture from the survey household. Questions regarding crops mainly included of five questions: who decides or who has more say or final say regarding — the use of land for production; labour arrangement; time for plantation, harvesting, and other tasks; use of agricultural input in production; buying and selling along with income use. Questions regarding livestock also included of five questions: who decides or who has more say or final say regarding — the number of livestock to be raised; labour arrangement; feed and fodder arrangement; buying and selling along with income use; and livestock shed arrangement. Score was kept for both male and female, with '1' as having some say in decision-making, and '0' as having no say in decision-making. If both had equal score then both male and female were given '1' score. The survey questions related to decision-making included of prolonged conversation rather than a structured list of questions, with detailed information about decision-making process being recorded as field notes that has been used to make sense of the survey data.

3.6.4 Narrative Interview

Narrative interview was conducted with twenty women farmers, out of which five women belonged to households that did not practice exchange labour anymore, eleven women from households that practiced exchange labour, and four households that practiced exchange labour as well as worked as hired labourers. Field notes and transcripts of interviews formed the basis of data on narratives. Each women narrative was also triangulated with data collected from other family members of the same household. Narrative interview to understand life story as proposed by Schüze (1980) uses sequential ordering of life events along with evaluation of the past story by the self (Bertaux and Kohli, 2008). Narrative interview consists of extensive narration by the narrator during which the interviewer use minimal intervention and a period of questioning where the interviewer tries to elaborate issues earlier presented by the narrator (Bertaux and Kohli, 2008: 50-51). According to Schüze, the narration allows

the researcher to reconstruct the real sequence of past events, allowing for sharing the experience as well as the meaning of the experience as interpreted by the narrator. This method was used to gather information on women empowerment in agriculture. Contextualized within the ethnographic fieldwork, narrative interview has provided a basis in which women involvement could be compared and contrasted in differing time and space where agriculture transitioning took place. Women's narratives as well as men's narrative regarding their involvement in citrus production and marketing have been gathered. Biographical Narrative Interpretive Method (BNIM) was used as proposed by Wengraf (2001) with Single Question Inducing Narratives (SQUIN) to generate data with minimal interruption from the part of researcher. Single question that was mostly asked included of 'Tell me about your life as a farmer, mainly citrus farmer. How was your life before and how is it now?' Another such question was 'what is your role in citrus plantation and citrus commercialization?' Wengraf suggests that narratives convey tacit and unconscious assumptions and norms of the individual or of a cultural group, which are less subject to the individual's conscious control. Wengraf further adds that narratologists argue that biographical narratives are powerfully expressive of the nature of the particular person, culture and milieu, and are valuable instruments as they present embedded and tacit assumptions, meanings, reasoning and patterns of action and inaction. Sample for BNIM were carefully selected, as it had to be representative of mainly three categories of household with various labour arrangement.

Narrative participants were selected after the survey questionnaire was administered but before complete analysis of the survey questionnaire. After the inferences were drawn from the survey, narrative interview participants were selected based on researcher's judgment to include heterogeneous sample that could provide wide range of experiences and perspectives related with women's involvement in agriculture. Narrative interview participants thus included of households with only women member, women from old and new citrus farmers category, women working as wage labourer and exchange labourer, women actively involved in commercial citrus farming and commercial vegetable farming. Maximum variation sampling as a purposive sampling technique was used to identify patterns and commonalities between cases despite diversity in each case (Wengraf, 2001: 102).

3.6.5 Secondary Sources of Information

Although the study is largely built upon primary sources of data, secondary sources of information have been used to substantiate and validate certain information gathered during the ethnographic fieldwork. Mostly data on Sindhuli district, citrus production, and demography have been used through secondary sources. The study has used existing data on road distance from district headquarter to VDC office and gender based membership in agricultural cooperative (DADO, 2014), male and female migration data of Sindhuli district (MOLE, 2014), economically active population in agriculture (CBS, 2013), and citrus production data (MOAD, 2012). Some information on *Junar* production has also been used from Kaini (2013). According to Murchison (2010), secondary data may offer parallels or contrasts to the ethnographic data and provide insights into historical processes, links and causes.

3.7 Data Management, Analysis and Presentation

Questioning the very formation of women as a category, postmodern theorists proceed towards reformulation of the subject or gender categories by dismantling the Cartesian binary logic that has oppressed women (Leavy, 2007:93). Post-modern feminist theorists suggest focusing on 'experience' but challenges the way experience have been viewed by standpoint theorists. Postmodernists suggest understanding women's experience as a creation rather than the truth, as would have been analyzed by standpoint theorists. Analysis of not just what is being experienced but also how and why women are experiencing something, such as the phenomenon of feminization or empowerment in the current research have been the impetus of the study. In this perspective, the phenomenon of feminization or the experience of feminization itself is considered as a result of power effect. Exploration of the power that shapes certain phenomenon has been the focus of analysis and presentation. Chronological sequencing of events, experiences, incidences of agriculture transition from cereal to citrus crop and triangulation with women's narratives and oral history provided by key informants along with secondary sources of information have been crucial in setting the context and analyzing women's experience within the context of agricultural change.

The research had four types of primary data — data collected through survey, data from participant observation, key informant interviews and women's narratives. Data collection was done concurrently between different mixed methods, but analysis was done in a sequential manner. It is difficult to state which followed which data, as in most qualitative research data analysis starts from the time of data collection as researchers start building up their thesis from the field, with the help from the researched themselves. Hence, mostly the study began with qualitative data, and concurrent use of survey, participant observation and key informant interview as part of ethnography, and finally selection of narrative interview participants was conducted during the later stage of fieldwork. These data were archived and reviewed using Nvivo software at times, and at times manually. Nvivo 11 for mac was also used to organize and analyze ethnographic and interview data. Narratives and most qualitative data were transcribed in its original language 'Nepali' rather than transcribing it in English, even though the researcher had to write the thesis in English language. Nepali language transcription, using verbatim transcription was maintained in order to keep intact the originality of the raw data rather than processing it through transcription in foreign language (Wengraf, 2001). Data entry of survey data on the other hand was done in MS Excel 2011. Excel was used to conduct scatter plot analysis to generate waves of citrus plantation, and to generate percentage and ratio of men and women participation in agriculture. STATA 14.1 was also used in order to understand the relationship between citrus plantation (Early adopters and late adopters) and type of household category based on three labour types. Additional variable land size was also added to determine the relationship between these three variables —land holding, stage of citrus plantation, and type of labour. Only one section of the analysis was conducted using STATA. Excel was also used to index interviews. Some field notes were incorporated within Nvivo while most field notes were manually analyzed. Computer-aided data management enhanced both qualitative and quantitative data analysis. It helped in easy access of the information, as data was organized based on themes, and chronological sequencing of events.

Triangulation of data was one of the means of comprehending the data. Triangulation of data started from the ethnographic fieldwork, where information from different sources were validated and reliability of information was crosschecked. Information that seemed dubious (one example was regarding the year of citrus history provided by Key Informant which when triangulated resulted in data misfit) has been

removed during the final analysis and data presentation. Different research methods and tools have also been used to triangulate information. Especially, the findings from the survey data on gender-based participation in agriculture has been further analyzed by using qualitative data collected through participant observation, key informant interviews, and narrative interview. Mixed research method including of qualitative and quantitative data sets were used as pointed by Jick (1979: 602) to 'examine the same dimension of a research problem' (as cited in Hesse-Biber, 2010) — feminization of agriculture and women empowerment. Numerical data for the study has been used mainly as a context that presents involvement of men and women in agriculture to determine measurable account of feminization, as well as decision-making as a proxy for empowerment. Qualitative data has been used to further understand the nature of feminization, and conditions in which women and men engage in various domains of agricultural production in a multi-functional agrarian context. Central Research Question (CRQ) was used to generate time sequence as well as structural aspects of the complex phenomenon under study (Wengraf, 2001: 85). Use of biographical narrative interpretive method (BNIM) became central in understanding women's life with focus on how they have lived their life and how their story was told. Critical incident narratives embedded within life-events that eventually fitted into the socio-political realm of citrus adoption and production was thereby gathered to comprehend the phenomenon of women empowerment in agriculture. Given that the qualitative interview was conducted during ethnography, use of reflection over the interview conducted, and going back to the same interviewee for more detail was not difficult. Such practice of meeting same people again and again to gather information of socio-historical context to situate personal narratives within a broader context was conducted.

Qualitative interviews were further analyzed using constant comparative method (Glaser and Strauss, 1967) by coding and analyzing at the same time. In order to understand potentiality of income earning opportunities in agriculture, the degree of market orientation within productivist and non-productivist spectrum within multi-functional agriculture was used as a conceptual framework to comprehend survey data along with descriptive detailed data. Qualitative data that provided tasks based differences in agricultural participation was further generated for each production domain in agriculture for each category of household having various degree of market orientation of citrus crop. Using maximum variation sampling, both typical cases and

most deviant cases were however included in selection of narrative interview participants as well as in the analysis to identify commonalities between cases. Comparison between involvement of men and women in different activities under four-production domain was conducted. Further assumption was generated as suggested by the data, which included of — 'women's participation is higher in menial tasks that are mostly considered as traditional agricultural tasks'. This assumption which was based on field data were critically examined to enhance the understanding of the phenomenon of feminization of agriculture by exploring how types of works were valued within the study site by men and women. Using constant comparison between cases, women's labour involvement in agriculture has been analyzed and data presented by integrating both survey data and in-depth data, while survey data on decision-making as a proxy of empowerment has been presented.

For the analysis and presentation of women's empowerment in agriculture, the study has adopted theoretical framework of empowerment (Kabeer, 2001). Emergent themes guided the selection of resources to be further analyzed as an empowerment related resource dimension. Using thematic analysis, five resource domain — land, labour, income, social network and human mobility has been selected to understand women's agency and their empowerment achievements based on whether women have been able to challenge or comply to the existing gender norms and social structure that create men's dominance over women in agriculture. Although efforts had been made to present the thematic data in ways that has been exemplified by Wengraf (2001) for qualitative data analysis in the initial stage, the study could not follow the complex and lengthy procedures suggested by Wengraf. Narrative interviews that were mainly used for empowerment analysis were thus analyzed by thematic coding of resources, and narratives related to each resource theme were analyzed using empowerment framework of Kabeer (2001). Patterns, similarities and differences between cases were mostly used to present conditions in which women's agency were used for each resource category. The empowerment framework as an analytical tool mainly guided the analysis to understand exercise of women's agency in relation to resource access, use and control. Women's lived experiences and their subjective interpretation of their involvement in agriculture were presented as data on women's empowerment in agriculture.

3.8 Limitation of Data Collection and Analysis

In order to understand the research problem of the study, the researcher had initially considered using time-use data to collect either/or hourly, daily, weekly, or monthly engagement of men and women in agriculture. Number of hours provided by men and women in different activities was considered as important to understand feminization of agriculture. But the difficulties in collecting numerical data through recall of time-use was challenging as it pressurized the study participants to state either the exact number of hours, or at least the range in which they provided their labour. Nevertheless, the study still had to rely on recall and reflection of study participants regarding their involvement in different activities, as the researcher could not be present at the field during every agricultural season to observe every agricultural task. Moreover, observation at one study site would limit researchers' presence in another location thus observation of time bound seasonal agricultural practice could not be observed in various location. Few activities could be observed twice in two years time in the field, but most activities could be observed only once because of the time availability of researcher to juggle through field work and other academic commitments. Efforts had been made to be present at various locations during agricultural season, mainly during plantation and harvesting of paddy and citrus.

Availability and non-availability of household members were also aspects that affected data collection. Although ethnographic fieldwork provided with an opportunity to meet the household members more than once, household members mobility sometimes resulted in relying on one member of the household to provide information. Few narrative interviews provided extensive information as a result of women participants' ability to express their views, ideas and experiences, while relatively some women were not been able to provide extensive account of their life and their engagement in agriculture. Follow-up interview was not possible with three narrative interview participants, thus the narrative interview had to rely on available narrative which provided detailed information on few aspects of their lives, but still had limited information on certain themes as compared to other women's narrative. Inability to record interviews as well as to take notes in some cases resulted in researcher having to rely on field notes developed in the end of the day, which used interpretation of the data while making noted rather than use of verbatim transcription of the interviews. Verbatim

transcription often provided additional insight during data analysis as exact words of the study participants resulted in researcher to re-experience the fieldwork and to contextualize the spoken words. Finally, analysis of empowerment has considered empowerment as a transformatory process rather than an end (Kabeer, 2001) that results in changes in gender relations in agriculture.

3.9 Ethical Consideration

According to Hammersley and Traianou (2012) 'qualitative inquiry raises distinctive ethical issues because… it generally involves emergent and flexible research designs, and usually entails collecting relatively unstructured data in naturalistic settings'. Critiques have questioned ethnography, participant observation, open-ended questions as revealing more than what the participants are ready to openly disclose. They suggest that the researcher invades the privacy of the researched, and are often times in the position of revealing more than they are willing to. While use of reflexivity have been considered as providing a more ethical ground for the research, limitation of reflexivity (Leavy, 2007), and inability to adhere to certain ethical practices have been a challenge for the researcher. Ethical practices as understood by the researcher includes of:

a. Selection of genuine topic that has not been selected based on personal motive of self-interest;
b. Avoid biasness in selection of research participants and key informants, and ensure inclusiveness;
c. Maintain rapport and negotiate power differentials during ethnographic field work to limit exploitation of the participants or being exploited;
d. Adherence to effective note taking, indexing, data processing and management;
e. Get informed consent from those being researched;
f. Presentation of data without revealing the identity of the source, especially if the participant is uncomfortable, unwilling or if the data is too sensitive;
g. Give credit to the original source, if used through a secondary source.

Despite being conscious about these ethical issues, the researcher have not been able to adhere to all of these ethical concerns at all times. However, the researcher did

not deliberately use unethical measures, but rather missed out on applying the rule, or at times calculated at best the desired action in light of particular situations (Hammersley and Traianou, 2012). Nevertheless efforts have been made to incorporate professional ethical research practices. Like suggested by Hammersley and Traianou, while researchers try to maintain confidentiality by preserving anonymity, it is still possible for people to identify the people based on the descriptions of their actions as these descriptions which is extensive in ethnographic research tend to narrow down the range of people. Such a situation might result in harm for the participant, but most of the times they may not be as harmful as perceived, hence like every researcher, the researcher also went through the situation of 'dirty hands' dilemma. Another ethical problematic issue was regarding informed consent for recoding the interview or conversation. While every individual were asked for permission during first contact to record either interview or normal conversation, regular contact meant that the researched already knew about the researcher's work. There were times when the researcher did not deem it necessary to seek consent from the researched as they were well aware. But at times the research participants themselves asked the researcher not to record such conversations. During such cases, and cases that followed, the researcher asked the researched for consent every time recorder or phone cameras were used to capture video. Otherwise, field notes were used as the best mode of note taking, mostly as a reflection of the day.

3.10 Delimitations of the Study

In order to capture varied dimensions of agricultural change prevalent in the study site, the study selected a broad theoretical framework related with agricultural transition, namely the 'Multi-functional agriculture transition'. Although the transition theory in which this study is embedded does provide wider scope to fit various ways in which the farmers value agricultural change, the study has not been able to cover broader arenas of multi-functionality that the term suggests. The study does not provide enough evidence or arguments regarding environment conservation, agricultural sustainability, agricultural bio-diversity, agro-tourism, and many other aspects that multi-functional agricultural transition covers. Instead, the study has narrowed down the concept of multi-functionality into four-production domains of agriculture, and has further elaborated on multiple functions of these four-domains as explained by the

farmers. The study has also explored multiple occupations and professions associated with agricultural change, mainly related to citrus traders, citrus nursery owners, citrus facilitators, citrus grafters, but it has not been able to cover detailed information on *Junar* processors, mill operators as an occupation related with agriculture. Despite few observations made by the researcher in *Junar* processing centers, due to lack of substantial data, information on involvement of men and women in processing has not been presented. Detailed information of wide range of activities in which farmers are engaged including pest control, soil nutrition management, and citrus related diseases has not been included in the study. Few initiatives taken by large citrus farmers (male) and nursery owners (male) regarding citrus pest were observed, but more concrete evidences on the (women) farmers, facilitators and DADO representatives' role needs further evidence.

Other delimitations of the study are as follows:

i. Since the study was mainly focused on understanding the nature of feminization, the study has used more qualitative information to gather meaning of different kinds of agricultural work, and how each work is valued. Quantitative information on household labour, exchange labour and wage labourer has been collected to find out who represents, participates and dominates in each production domain, but the study did not collect gender-based division of work through time-use survey. Hours of work per activity, or hours of work per day by household members to compare work done by men and women have not been conducted in this study. The study also does not show the numerical share of three different types of labour use against total labour need of the household, although it shows the changing pattern of labour involvement based on production domain.

ii. Left-behind women that included daughter-in-laws who lived with their in-laws were few. Most women followed their husbands' to Sindhuli, Kathmandu or even abroad. Only 8 cases were found out of 140 households where daughter-in-laws lived with their in-laws in a single household. Although these women were part of ethnographic study, the study could not draw any substantial inferences regarding women-left behind categories.

iii. Except for Tamang, Kami, Sarki, and Damai, people from all castes and ethnicities fall under early citrus planters. Although groups had been formed to understand characteristics and patterns of engagement in agriculture by caste and ethnicity wherever possible, the study has not been able to provide any substantial distinction on women in agriculture based on castes and ethnicities.

iv. The research does not focus on every dimension of empowerment for each women, and does not state how empowered an individual woman is in certain dimension.

CHAPTER FOUR

4. MULTI-FUNCTIONAL AGRICULTURE: A CONTEXTUAL ANALYSIS

In the literature review section, the study argued that all traditional farming systems are multi-functional in some ways. Adopting Wilson's transition model to understand agrarian change, the research borrows the term multi-functionality to place agriculture as having productivist/non-productivist boundaries of decision-making (Wilson, 2007). This chapter thus conceptualizes agriculture transition in the study area as having varying degrees of market orientation, with focus on increasing the productivity of the crop/livestock for the purpose of sale with gradual increase in quantity as more productivist oriented, and non-market or limited market orientation, without substantial increase in quantity as having non-productivist orientation. However, despite limited market-orientation, any crop/livestock might be productivist if the farmers are focused on increasing the productivity even for household consumption. Thus, the study further builds on the argument that the study area has a moderate multi-functionality in agriculture. Although Wilson (2007) suggested that some households might fall under high multi-functional spectrum while his/her neighbor under moderate and weak multi-functional spectrum, the study argues that the household within the study area has a moderate multi-functionality. Irrespective of farmers increasing focus towards specialization, intensification, scale-enlargement and concentration of one agricultural production, even the largest commercial farmer, in the study area is still practicing mixed farming system with mainly four types of agriculture production: cereal, citrus, vegetable, and livestock. Therefore, agriculture transition has not completely replaced one crop/livestock over the other, but has resulted in prioritization of crop/livestock with the degrees of market orientation.

Crop prioritization, with major focus on citrus orchard development, mainly *Junar* has resulted in the change in land use. Plot of land that was previously used to cultivate traditional cereal crops is now being replaced with market-oriented production of citrus. Citrus production has further resulted in inter-cropping and multi-cropping practices where citrus as well as traditional cereal crops and vegetables are grown in the

same land, until the citrus tree grows in size and results in mono-functional use of the available land. Hence, this chapter presents the context of multi-functional agriculture in the study site, and places *Junar* as a crop that has gradually become an important commercial crop that is changing the pattern of land use. In order to understand how agrarian change took place, this chapter also introduces the origin of *Junar*, and how *Junar* production was spread to highlight the current scale of citrus production, by focusing on the political economy of *Junar* commercialization.

4.1 General Characteristics of Survey Households

The characteristics of survey respondents includes of categories mainly based on caste/ethnicity, education, migration, labour type, occupation, and type of citrus producer. Cultural sub-group based on caste and ethnicity of the respondents is provided in Table 4.1. Based on the survey, respondents from all cultural groups could be identified as citrus farmer, as well as wage labourers. Distinction between and within these groups was present, but not all differences were of importance to study the problematic deemed necessary by the current research.

Table 4. 1: List of Heterogeneous Cultural Groups in the Study Site

VDC	Village	Caste/Ethnicity
A. Baseshwor	1. Nakajoli	Brahmin, Dalit (Kami), Hayu, Magar, Newar,
	2. Haibar	Bhujel, Chhetri, Dalits, Gurung, Hayu, Tamang
B. Ratanchura	3. Nayakharka	Chhetri, Newar, Tamang
	4. Khaniyakharka	Brahmin, Chhetri, Dalit (Kami, Sarki, Damai), Hayu, Newar
	5. Bijayachaap	Brahmin, Chhetri, Hayu, Newar
	6. Ratanchura	Chhetri, Dalit (Kami), Hayu
	7. Hirding	Chhetri, Magar, Tamang
C. Tinkanya	8. Tallo Kubindey	Dalit (Kami, Sarki), Magar, Tamang, Thakuri
	9. Majh Kubindey	Dalit (Kami, Sarki, Damai), Magar
	10. Malinge	Magar, Tamang, Thakuri

Source: Ethnography Field Study, 2015/16

Survey respondents were categorized as early and late citrus planters. Those who planted citrus prior to 1990 were considered as early planters, and those after as late planters. Total of 24.28 percent households were early planters, while 75.71 percent households were late planters. The average number of trees planted by early planters is

467, while the average for late planters is 137 citrus trees, including of both fruiting and non-fruiting trees, and mandarin orange as well as sweet orange. Out of total late planters, the minimum number of trees planted is 6 and maximum is 900, and the minimum number of trees planted by early planters is 40 while maximum is 1200. Out of total survey participants, 51.42 percent of households have less than 100 citrus trees; thirty-five percent households have more than 100 and less than 500 trees, and 13.57 percent of households have more than 500 trees. Out of 72 households that had less than 100 citrus trees, 58.33 percent had less than 50 trees.

Migration was a significant feature of the households in the study area. Except for 29.28 percent households, every other household had at least one migrant in their family. The reason for migration included of education in Sindhuli, Kathmandu, or abroad. Similarly, many people migrated for work to distant places in Nepal or abroad. Out of 99 households that had migrant individuals, 68.68 percent had migrated for work, 12.12 percent for studies and 27.27 percent were returnee migrants. Majority of returnee migrants were those who went to Kathmandu and Sindhuli, and some from Qatar and Malaysia. Except for two households, which included of both husband and wife, all other returnee migrants included of men. In terms of those who had left for work and studies, gender-based distinction cannot be made based on mere number, as regardless of sex, parents had sent both of their children for studies. Similarly, both men and women alike had left their home for work. Daughters were married off early, or young unmarried daughters chose to leave rural space for work in Kathmandu or abroad. Women-left behind which included of daughter-in-laws who lived with their in-laws were few. Most women followed their husband to Sindhuli, Kathmandu or abroad. Only 8 cases were found out of 140 households where daughter-in-law lived with their in-laws in a single household; out of which 2 women were pregnant, and 2 breast-feeding, while the rest were newly married brides. Single women-headed households included of six households with two old women and four young women households. However, they were not included in the survey, but were considered as part of ethnographic study.

Not including migration as an occupation, 32.14 percent households had multiple-occupation besides farming, which is considered as the primary occupation of every household. Occupational opportunities available in the study area included of agriculture wage earner, construction worker, mill operator, vehicle owner, shop owner,

tailor, health care service provider, government employee, NGO worker, politician, teacher, furniture worker, porter, tea shops and motel owners, local liquor maker, clothing store, contractor for construction of roads and houses, and other skill based work such as weaving bamboo basket, or making *Halo*, *Juwa* usually considered as traditional occupation of artisan Dalits. Besides, occupations associated with citrus have influenced people to take up profession such as citrus trader, citrus nursery owner, citrus facilitator, along with citrus processors [into jams, jelly, candy, juice, squash, liquor] and permanent staff working in citrus nursery providing a space of diversifying occupation by respondents in the study area. In addition to occupation diversification possibilities within rural space, if we add migration for work, then the total number of households having multiple occupations becomes 55.71 percent, which is 23.57 percent more. Although migration is a major factor in livelihood diversification of the household, migrants usually belonged to the younger generation, with age group of early twenty's, whereas the average age of male respondents is 48, and that of female is 46. In terms of education, many respondents considered themselves illiterate, while some could read and write and some had basic primary education, few respondents had also acquired higher-level education. Those who had Masters, Bachelors and higher secondary education were all males, while the maximum level of education of female respondents was School Leaving Certificate (SLC).

Respondents from the survey had an average of 12.28 ropani (0.624 hectare) of land, with maximum 60 ropani (3.052 hectare) and minimum of 2 ropani (0.101 hectare) of land. Out of 135 respondents who had provided land data, 14.81 percent had less than 5 ropani of land, 56.29 percent had land more than 5 ropani but less than 15 ropani, 28.88 percent of respondents had land above 15 ropani. Even though the respondents mentioned the size of their land currently being used or owned, it should be noted that the land might not have been legally transferred into the names of the respondents. Since the general practice observed in the study site was that of using the land owned by the fathers, which sometimes were well-plotted land parcels divided between brothers, and at times land segregation had not yet initiated in their family. Therefore, same land would be cultivated and production divided among two or more households. Such families mentioned the entire land parcel that was being used by them even if the land did not legally belong to them. Total of 38.37 respondents had *Khet* land in addition to *Bari* land.

4.2 Changes in Land use and Cropping Pattern

Land is one of the most valuable resources in agriculture, as land determines availability of land suitable for agriculture, and crop/livestock productivity. Diversity and intensity of crop/livestock production therefore has direct implication over land use. Agriculture suitable land in the study area can be categorized under *Khet*, *Bari*, and *Bari* turned *Khet*. *Khet* land is the irrigated lowland that is situated near riverbanks. Traditionally, paddy, maize, wheat, oilseed, and pulses are grown in these areas. Although many crops are grown in this type of land, the main purpose of owning such land is for paddy cultivation, which is considered as a staple food. *Bari* land consists of land that rely on rain for cultivation. These lands are considered as upland rainfed terraced or sloped land. Such land is mainly used for millet, maize, wheat, oilseed, and pulses, and also *ghaiya* (direct seeded dryland rice). Likewise the third type of land, *Bari* turned *Khet*, is a land-situated upland but has water supply with canal irrigation. Such type of land can be used for production of either type of crops produced in *Khet* or *Bari*, but as the land had better water supply, production of millet is replaced by paddy. *Bari* turned *Khet* is found only in one location, i.e. Ratanchura, while the rest of the study area only has *Khet* and *Bari.* Use of land for different type of cereal crop production thus relied on the availability of irrigation. With access to irrigation, farmers shifted the cultivation from maize and millet to paddy. Although maize and millet were also consumed as food, paddy was considered as a more reputed staple food in the study area than other cereals. Excerpts from farmers residing in Ratanchura shows how land use changed from maize and millet cultivation to *Junar* and then again to paddy cultivation after canal was built:

> These areas have proper irrigation, with water canal passing through the house [referring to the nearby *Bari* land]. We don't know if the land is registered as a *Bari* land or *Khet* land, but this area was turned from *Bari* into *Khet* afterwards. Earlier farmers used to cultivate maize and millet for home consumption. They even planted *Junar* in this area. At that time nobody had planted *Junar* in large scale like the farmers in this area. But after water canal was built, farmers started cutting the big trees (Referring to *Junar* planted directly from seeds or *Biju* trees as opposed to grafted trees which are much smaller in size) so that they could

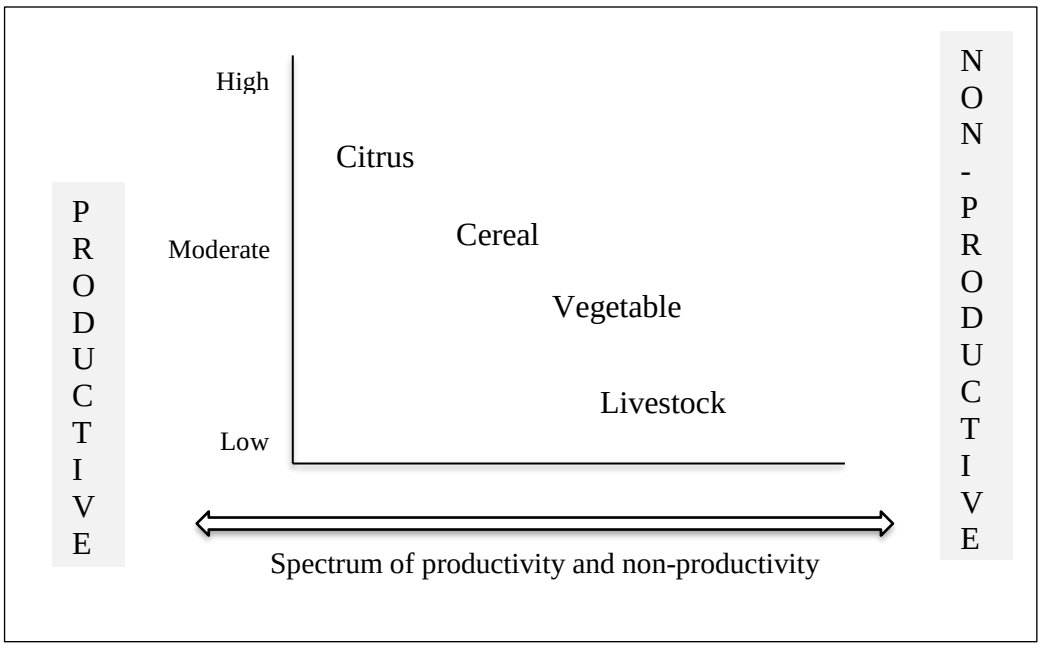
grow paddy. Unlike now, there was no market for *Junar*, so these Hayu's chopped many trees. […] Look, now there are only one or two such big, old trees in this area (Male non-Hayu during a group conversation in Ratanchura).

The excerpt shows that the farmers residing in Ratanchura valued paddy cultivation over *Junar* at one point of time. But now the same farmers are cultivating *Junar* in the same land where they had prioritized paddy cultivation, replacing paddy with inter-cropping of maize/millet and *Junar*. Hayu dominated Ratanchura area is now gradually shifting their cultivation pattern towards more market-oriented *Junar:*

We don't have many trees. Not as much as other *Junar* farmers in Tinkanya and Baseshwor. We should have kept the trees, but at that time, who knew that the price of *Junar* would soar up like this. Now the price for one piece of *Junar* is seven to eight rupees (One rupee is almost equal to one cent). I heard some even sold one piece for fifteen rupees. Can you believe it? […] And we chopped the trees. Those old trees used to produce, this [showing with a hand gesture] big *Junar*. Now, you don't see such a size anymore. But what can we do now. We thought growing paddy was important. Food is important. Now, I sometimes regret having decided to cut those trees. Those trees which my father planted. […] We are again focusing on *Junar* now. Now everyone will plant *Junar* (Male Hayu resident, aged fifty-eight from Ratanchura).

I heard that these areas, here [pointing towards the land that has non-fruiting *Junar* trees and maize], used to have big *Junar* trees. My husband keeps talking about how it used to be when he was young. He said that the trees were chopped, and the land burned to cultivate paddy. How would they know how *Junar* would be valued today? We need food to eat, we need food to eat, is what the older people said. Even in my family, I used to live in another village; they always talked about food production. How we can earn and how we can buy from the market was never considered, like in today's time. (Female farmer, thirty-eight years, from Ratanchura)

Figure 4. 2: Degree of Market-orientation of Crops and Livestock



Source: Author, 2017

The narratives on land use shows how farmers struggled to use the same land for production of food crop and other crop, whereby food crop was prioritized over other crop that had market value but was still not a highly commercial crop. The degree of market orientation of the crop as shown in Figure 4.1 thus influenced land use. When citrus had low market value, then the farmers produced citrus with non-productivist objective, but as citrus started having more market value by fetching more market price then the farmers started to plant citrus in large scale with the objective of productivism. Although citrus was valued as a crop that could increase diversity and add nutrition to their diet, paddy as a food was more valued in the past. Thus, paddy was cultivated with productivist objective, hereby not related to the market but with increasing household food self-sufficiency or productivity for home consumption. The land use pattern has however changed, with farmers focus on increasing the productivity of citrus more than that of cereal. Increasing productivity of cereal is also still widely valued, but the concentration of commercial farming of citrus puts citrus farming as more inclined towards the productivist spectrum, followed by cereal, vegetable and livestock. However, it should be noted that farmers keep changing the pattern in which they grow different crops/livestock based on the availability of the land and market value of the

crop/livestock they are producing. Table 4.2 presents a list of traditional crops and competing crops that could change the pattern of land use in the study site.

Table 4. 2: Land Type and Potential Crops for Cultivation

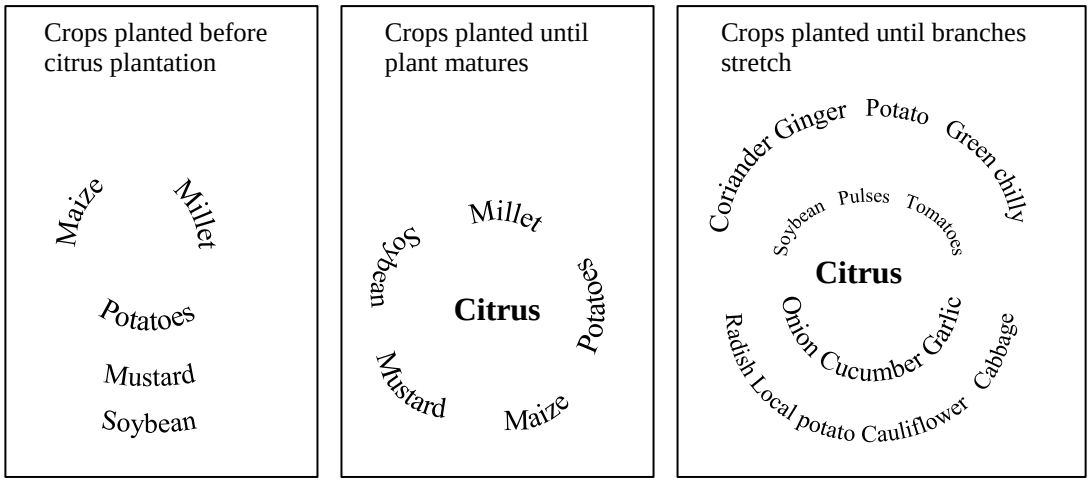
Type of land	Traditional crops	Competing Crops		
		Spices	**Fruits**	**Vegetables**
Khet	Paddy, Maize, Wheat, Oilseed mustard, Pulses	-	Sweet Orange, Mandarin Orange, Lemon	Potato, Green chilly
Bari	Millet, Maize, *Ghaiya*, Wheat, Oilseed mustard, Pulses	Ginger, Black Cardamom	Sweet Orange, Mandarin Orange, Lemon	Tomatoes, Soybean, Radish, Coriander, Cauliflower, Cabbage, Onion, Cucumber, Garlic, Mushroom, Local potato
Bari turned into *Khet*	Paddy, Maize, Wheat, Oilseed mustard, Pulses	Ginger	Sweet Orange, Mandarin Orange, Lemon	Tomatoes, Soybean, Radish, Coriander, Cauliflower, Pumpkin, Cabbage, Onion, Cucumber, Garlic, Mushroom, Local potato

Source: Field Study, 2017

Although crops has been positioned as having the potential of replacing traditional crop as shown in Table 4.2, inter-cropping and multi-cropping is a common practice in the study site that provides multiple use of same land at the same time. Unlike the previous practice of growing two to three cycles of traditional crop in the same land, inter-cropping and multi-cropping allows farmers to cultivate more than one crop in the same land at the same time. Inter-cropping is considered as a feasible option until citrus tree matures and provides fruit ready to be sold in the market, which then provides with cash to buy staple food that was earlier produced in own land. Production of less maize or millet is considered as a best bet in return for the future profit entailed by planting citrus. These traditional crops along with other crops are cultivated in the same plot where citrus saplings are planted for at least three to four years. Once citrus trees start stretching its branches, plantation of traditional crops are completely withdrawn. Plots in which citrus are grown are still used for inter-cropping specially with vegetables. Once the plot starts receiving minimal sunlight due to the overgrown branches, vegetable plantation is restrained in such areas. Multi-cropping with

vegetables and spice varieties is practiced until the plot is completely covered with permanent mono-crop. Such type of land use includes of slow and gradual process in which traditional crops are replaced by new cash-oriented citrus crop as shown in Figure 4.2. Some farmers choose to limit, withdraw or completely stop inter-cropping and practice mono-crop, to mainly focus on citrus crop. However such practice is limited to some plot of land, but not all the land that the family owns. Especially the *Bari* land has been in use for commercial citrus cultivation since past five decades, whereas the use of *Khet* land for developing citrus orchard is a new phenomenon that has been in existence for less than five years in the study site. The trend of using the available land for the purpose of increasing citrus cultivation even in land that cultivates paddy shows that farmers have started to intensify citrus crop production.

Figure 4. 3: Inter-cropping and Multi-cropping Practices with Citrus in Upland *Bari*

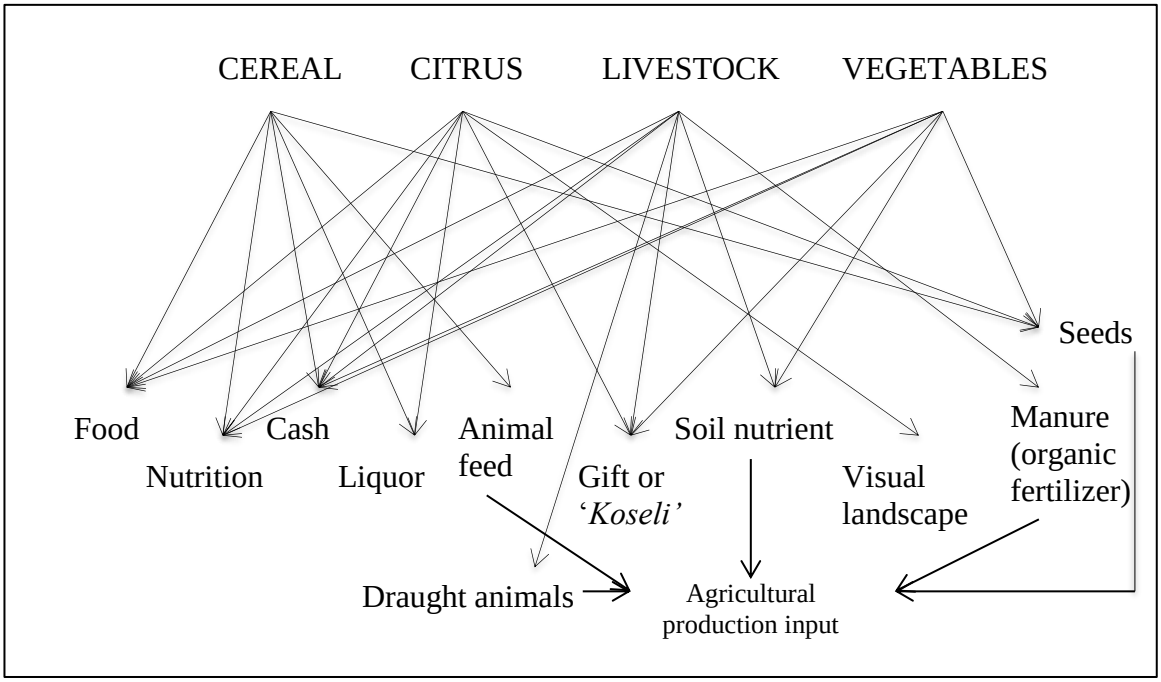


Source: Field Study, 2017

Nevertheless, all farm households still practice mixed-farming system, with mainly four types of agriculture production: citrus, cereal, vegetable, and livestock. In addition, legumes (soybeans, lentils, peas, beans, chickpeas) are also planted as an inter-crop with cereal crop mostly with the objective of improving soil condition, in addition to providing additional dietary nutrition through household consumption. The concept of agricultural multi-functionality goes beyond that of direct production of food and fibre, and incorporates non-productive aspects of agriculture that also includes of soil conservation and improving soil quality, among other multiple functions as shown in Figure 4.3. The concept also encapsulates environmental protection, landscape beauty, agro-tourism, bio-diversity and many other aspects of agriculture such as employment

generation and social identity. Multi-functional nature of agricultural transition for the current study is however limited to that of giving an overview of both productivist and non-productivist spectrum of the four-production domain of agriculture that was prevalent in the study site. Farmers' emphasis on developing citrus producing areas of Sindhuli district as an agro-tourism destination that also holds landscape beauty, or how the agricultural changes in the current study site has affected environmental conservation and sustainability is however given minimal attention as these issues goes beyond the scope of the study.

Figure 4. 4: Agricultural Multi-functionality in the Study Site



Source: Author, 2017

4.2 Political Economy of Junar Cultivation

With two hundred and fifty years of history of *Junar* production in Nepal (Kaini, 2013), this sweet orange variety of citrus has become an important source of livelihood of farmers residing in Sindhuli district – the locality where this fruit originated. As shown in Box 4.1, *Junar* was mostly grown by *Hayu* families, and their kith and kin until the mid 1970s. During earlier days, *Junar* was mainly used as a *'koseli'* – a gift to those close to Hayu families, while others bartered with calf or baby goats to receive *Junar* saplings. It was not until 1978 that effort was made to scale-up citrus plantation in a commercial manner by establishing nursery structures that could provide citrus

saplings to farmers. This timeline provided by key informants is in line with the Fifth Five-Year Economic Development Plan (1976-81), which emphasized on the development of hill agriculture in an organized manner (MFA, 1981).

The structural emphasis of citrus development was accompanied by credit facility to support farmers with cash to buy citrus saplings from the nursery, under Agriculture Development Bank's small farmer credit program. Through the means of credit provision, farmers were encouraged to buy citrus saplings from the nursery. Such provision was provided to farmers who could keep land as a collateral. Repayment of such credit was considered a must, but after many farmers complained about the difficulties in repayment of the loan, farmers' debt was fully waived. Such loans as recalled by farmers, was used to buy citrus saplings, while part of the loan was used for household consumption:

> The government brought a program to provide loans to farmers, with the intention of promoting *Junar* cultivation in Sindhuli district. During that time, I went to Ramechhap to get loan that was being dispersed. There was lot of hassle regarding the land ownership document. […] Finally, I received money. I forgot how much money I received. But I bought 105 saplings of *Junar* afterwards. I remember paying two hundred and ten rupees. Each sapling cost two rupees at that time (Male farmer, early adopter of citrus cultivation from Tinkanya).

> I received loan from Agriculture Development Bank to buy *Junar* sapling. They also provided salt and fertilizer to those who took the loan. There were many who took the loan at that time, but not all farmers bought *Junar* sapling. Even if they did, they did not care much for *Junar*. Their concern was mainly with the money that they received. Even we did not buy *Junar* with all the money that we received. But we did not deceive, like some farmers. They took loan and bought few saplings, then they used rest of the money to buy rice. There was a time when even for 10 *paathi* rice, people had to give *jamani*. That's how life was then, so I don't even blame the farmers. When you are struggling to eat at present, you wouldn't care much about the future. So, that's how the money was used. But we started cultivating *Junar*, little by little (Male farmer, early adopter of citrus cultivation from Baseshwor).

Box 4.1: The Origin and Spread of *Junar* Cultivation

According to oral history shared by the oldest generation of farmers in citrus producing areas of Sindhuli, the origin of *Junar* cultivation started from Hayu family. Jabbar Singh Hayu, a farmer was a '*mit'*, a friend to a high caste Brahmin named Shree Lal Baral, who served as a chef in the royal palace. This bonded friendship led Baral to share the '*Junar'* that he was given while serving in the royal palace, with his beloved friend Hayu. Hayu ate the fruit and kept the seeds. He then put '*dal*' seedbeds, out of which five saplings grew. As a return gesture, Hayu took three saplings as a gift to his friend, but Baral returned the saplings, saying that the fruit will grow only at high altitude. Having heard that the fruit grows in higher altitude, Hayu then started giving away *Junar* as a gift to his kith and kins residing in elevated hills. *Junar* then became a piece of souvenir to those close to Hayu. While some carried sacks of *Junar*, some received only a few pieces to taste. *Junar* slowly became an attractive fruit to travellers and nearby residents alike. As some non-Hayu farmers in the same village recalled, Hayu family themselves had an extended family; thereby others did not get to eat the fruit. Slowly, everybody started planting at least one or two trees in their *Bari* or kitchen garden.

An eighty-seven years old Brahmin man residing in another village in the same VDC remembers his grandfather buying *Junar* from Hayu family. Then the young boy followed his grandfather who went to Ratanchura-6 to get *Junar* fruits. He recalls that they had paid one rupee for twenty-five pieces of *Junar*. At that time Hayus were the only ones who were confident of growing *Junar*. They had already started putting seedbeds and growing more Junar in their garden. If others asked for few *Junar* saplings then they would ask for *baachcha* (male calf of cattle) or *pada* (male calf of buffalo) but they would also come and plant it themselves. At that time compact plantation of *Junar* with maximum of twenty to twenty-five trees could be seen around areas where Hayu families resided, mainly in Ratanchura, Bijayachaap in Ratanchura VDC, and Nakajoli in Baseshwor during the early days. During harvest season, the whole area would turn orange in color, giving Ratanchura-6 a lovely natural imagery even from far away. It wasn't just the taste of the fruit that lured other villagers to pursue *Junar* plantation, but also the beautiful landscape that the fruit provided, which as recalled by the old generation of *Junar* farmers, was hard to resist.

Source: Key Informant Interview, 2015

Other major periods in which citrus was promoted by the government was during the sixth plan period (1980-85) as shown in Table 4.3, which is also confirmed by the report prepared by Kaini (2013). Prioritized programmes during these periods emphasized on establishing private nurseries and citrus orchards. The period of 1980-1990 also created an enabling environment for farmers to form groups, and register their group in the District Agriculture Development Office (DADO). The first such group was established in Citrus Producing Area (CPA) of the Tinkanya VDC. In 1997, the Agriculture Perspective Plan (APP) was launched for a period of 20 years that recognized *Junar* as a high value commodity, with Sindhuli and Ramechhap districts being targeted under *Junar* Development Program (Kaini, 2013).

Table 4. 3: Historical Timeline of *Junar* Development in Nepal

Stages of Junar Development	**Year**	**Road Construction**
Hayu families started cultivating *Junar*	**1800s**	
	1956	Tribhuvan highway
National citrus research program established under NARC	**1961**	
Irrigation canal constructed in Ratanchura; *Junar* nursery started operating	**1974**	Prithvi highway
Expansion of citrus plantation by farmers other than Hayu community and their kith/kin	**1977**	
Nursery training provided to 12 farmers from Sindhuli	**1978**	
Government provided loan to farmers for citrus cultivation	**1980**	
Japanese project funded by JICA started its operation in some villages	**1982**	
National Citrus priority program initiated in 20 mid-hill districts (technical and financial support from Government of Japan)	**1984**	
Government of Nepal declared Sindhuli as '*Junar* area'	**1985**	
	1989	Mahendra Highway
1st agriculture group registered in DADO; Sindhuli *Junar* Development Association established	**1994**	
Maoist insurgency began	**1996**	Construction of BP highway began (4 phases)
20 years agriculture perspective plan launched	**1997**	
	1998	Phase 1 of BP highway completed
	2004	Phase 2 of BP highway completed
OVOP: distributed citrus sapling/ provided training	**2006**	
Women, disadvantaged group related programs initiated	**2008**	Phase 3 + Rural road construction linking each ward started

Junar central cooperative established	**2009**	
Junar development district cooperative association limited established	**2010**	
100 cooperatives registered under DADO, 25 *Junar* cooperatives from Ratanchura, Tinkanya and Baseshwor	**2011**	
MoU signed with China to export citrus	**2012**	
12 citrus facilitators trained and developed; 500 kg of citrus exported to China	**2014**	Phase 4 of BP highway completed
Prime ministers agriculture modernization program emphasizing on *Junar* Zone begins	**2017**	

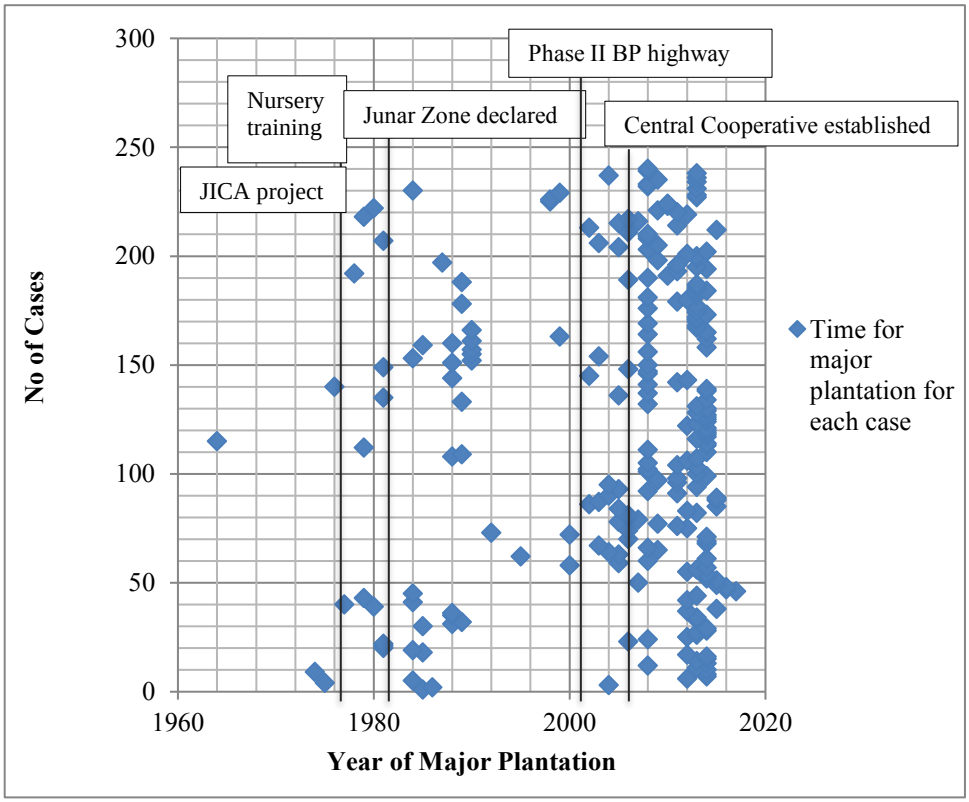
Source: Key informant interview, 2015; DADO (2014); Kaini (2013)

Although APP was launched in 1997 that prioritized *Junar* as a high value commodity, the timeline in Table 4.3 shows that the programme was of minimal significance until the year 2006. The period between 1997-2006 was not given importance by any of the key informants or participants during ethnography-based interviews; neither did the literature on citrus development provided any detail on the work done during this period. Maoist insurgency that started around mid 1990s might have impacted the level of engagement in citrus development by the government as well as citrus farmers. According to one nursery owner and a large citrus farmer, there was a gap of three to four years after insurgency in citrus development support that was earlier being provided by the government. Government staff engaged in agriculture development stopped visiting local villages. They lamented that at one point of time they even had to pluck and throw away the saplings. Large-scale institutional support, however, started again since 2006 with the launch of One Village One Product (OVOP) program.

Major plantations by citrus producing households show two distinct period of time when citrus have been planted. As per Figure 4.4, citrus was planted during the period of 1980-1990s, with a break in plantation during 1990-2000. Another period started after the year 2000 and has gradually increased the number of citrus producing households especially since 2006. Although the survey respondents are 140, the number of cases that highlights time for major plantation includes of 250 cases because the same household have been involved in citrus plantation at multiple times. The increase in the number of citrus producing households is in line with two structural developments, one directly related to that of citrus support programmes and another related with the construction of BP highway as shown in Table 4.2. Road construction that linked

Sindhuli district with Kathmandu and Bardibas, and construction of rural roads that connected the study sites with the highway encouraged the farmers to plant citrus. Scatter chart shown in Figure 4.4 displays timescale of major citrus plantation in horizontal axis x, and vertical axis y shows the number of cases of citrus farmers. The scatter plot analysis provides an insight on how agricultural transition related to citrus cultivation took place in the study site, with two major clustering of time period in which farmers have decided to establish citrus orchard. This data has also assisted in understanding two group of farmers, one is early adopters of citrus, and another as late adopters of citrus.

Figure 4. 5: Waves of Citrus Plantation



Source: Field Survey, 2015/16

Prime Minister Agriculture Modernization Project (PMAMP) is the most latest government initiative to transform agriculture sector in Nepal (Paudel, 2016). This project have been launched to boost agricultural productivity in order to make the country self-sufficient in production of cereal crops such as wheat, paddy, maize and also high value cash crops such as vegetables, potato, kiwi, apple mango, orange, and *Junar*. Specialized agriculture production areas have been classified into pocket, block,

zone and super zone under PMAMP. *Junar* production in Sindhuli district falls under zone covering 500 hectares of land. As part of agricultural zone development, *Junar* producing areas receives support from government for increasing citrus production, orchard management, citrus market development, creation of collection centers, and provision of research and development among other facilities. While PMAMP has recently been launched and its impact on farm families yet to be studied, the emphasis of the government to prioritize mono-cropping of *Junar* in Sindhuli district presents a scenario in which the current study can be contextualized. Prior to such project, four *Junar* producing areas of Sindhuli district, namely Baseswhor, Jalkanya Ratanchura, and Tinkanya had also received support from Sindhuli Chamber of Commerce and Industry under One Village One Product programme in 2006 with public private partnership modality (FNCCI, 2012; MoAC, 2012). According to the report by MoAC (2012) majority of farmers had started switching from agronomic crops to horticultural crops. Compilation of brief history and efforts made in agriculture development in Nepal as presented by Acharya (2013a) shows government effort in horticultural development since 1947, with the establishment of Fruit Nursery cum Trial Orchard, followed by establishment of department and centers to promote horticulture. Janakpur Agriculture Development Project (JADP) in 1973 with support from Japan government (JICA) also influenced *Junar* development (Thapa and Dhimal, 2017). In 1985 Sindhuli and Ramechhap was declared as '*Junar zone* ' (Acharya, 2013b), while Horticulture Development Project (HDP) a joint venture between government of Nepal and JICA was launched which promoted *Junar* in Sindhuli and Ramechhap districts (Acharya, 2013b; FNCCI, 2012).

Two major rationale behind efforts made by the government towards citrus development includes of cash earning opportunities and employment generation in the past. Recently, memorandum of understanding (MoU) with China to export *Junar* fruit to Tibet (TKP, 2012), have made *Junar* a non-traditional agriculture export commodity. Although export has not yet started due to lack of compliance to quarantine regulation particularly for free from pests like fruit fly, the current structural emphasis on export have changed rural agrarian dynamics. Five hundred-kilo grams of *Junar* was sent to Tibet for quarantine test in 2014, from the orchard of large *Junar* farmers. Such initiation by the government has made citrus farmers more alert regarding standard and quality of fruits that can be maintained through proper orchard management and joint

pest control. Moreover, the launch of PMAMP not only emphasized on cash and employment generation, but also stressed on making Nepal self-reliant on various agricultural commodities out of which making Nepal self-reliant in *Junar* within ten years is a major objective. Therefore, currently *Junar* is not only a market-oriented crop but is also a potential export-orientated crop. These measures highlight the existence of policy environment that is conducive for agrarian transition.

4.4 Present Context of Citrus Cultivation

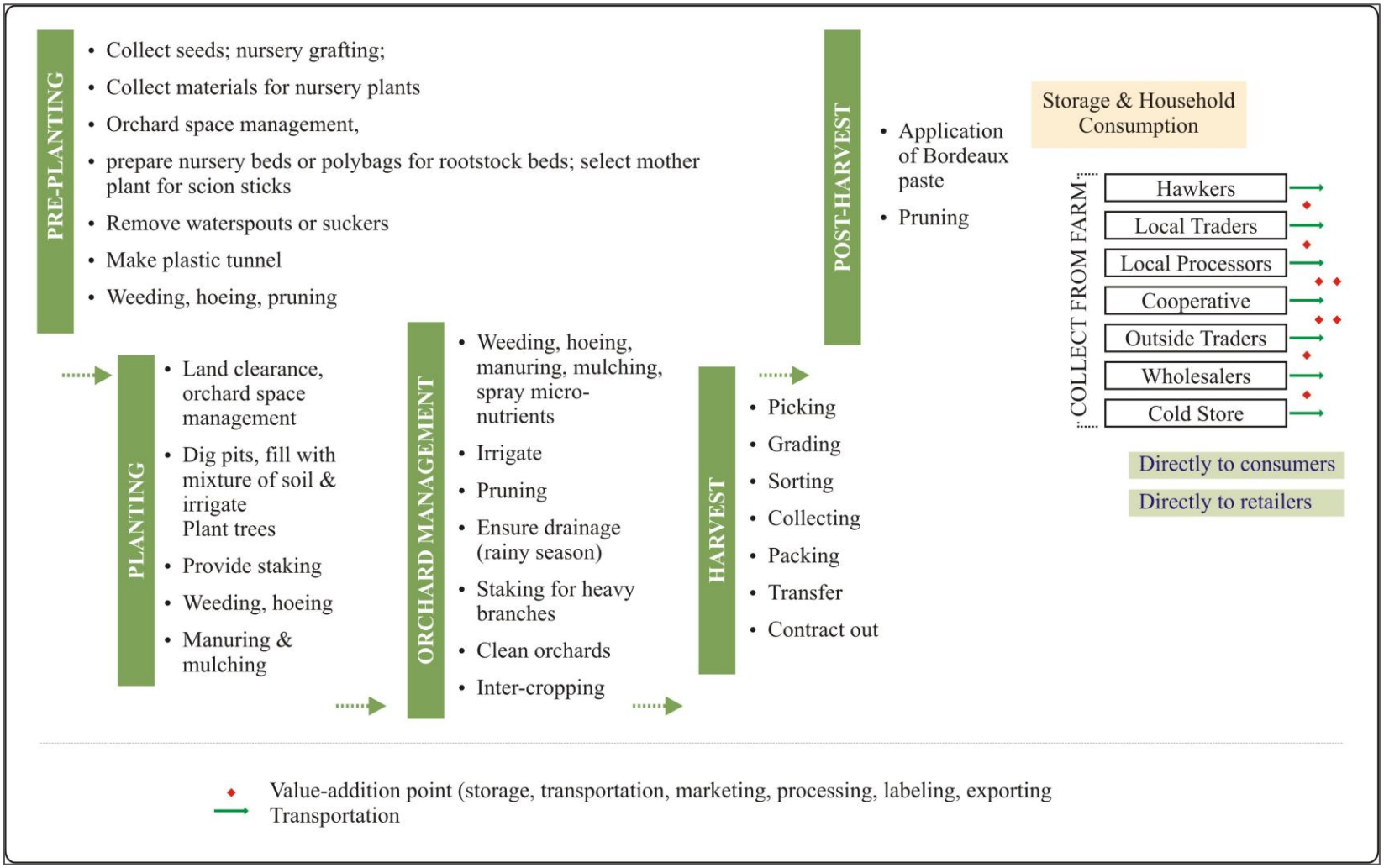
Citrus accounts for about 37 percent of the total fruit production in Nepal (Kaini, 2013). According to Kaini, citrus that have commercial potential in Nepal includes of *Junar* (*Citrus sinesis* Osbeck), mandarins (*Citrus reticulate* Blanco), lime (*Citrus aurantofolia* Swing), lemon (*Citrus lemon* Lin) and hill-lemon (*Citrus pseudolemon*). Out of these varieties, *Junar* occupies second position in terms of production and area coverage after mandarin (Kaini, 2013). Citrus producing areas consist of land, which is between 800-1500 meters above sea level. Given the geographical terrain of a hilly region, not all areas under citrus producing areas identified by the government are suitable for citrus plantation, resulting in citrus dense villages. While some landscape favors plantation of citrus, others within the same periphery might be excluded due to either low or very high elevation. In compact citrus plantation areas, some lands suitable for citrus based on altitude are not used for citrus cultivation, also because of other climatic conditions and soil formation. Citrus should be grown in areas where there is enough sunlight, and which is protected by strong-wind. Given these natural conditions, some households have restrained from planting citrus despite their eagerness to scale up citrus plantation.

Citrus plantation varies from one household to the other, with a minimum of five trees to more than thousand citrus trees in some households. Some households still have few trees only for household consumption, while those who have planted more trees use citrus for income generation resulting in scale-enlargement. Farmers plant both mandarin oranges as well as sweet orange in their orchard for the purpose of household consumption as well as sale. Although mandarin orange is also planted, *Junar* in particular has become a valuable commodity that has been marketed and branded with the label of *'Sindhuli ko Junar'*, i.e. *Junar* from Sindhuli. *Junar* is often marketed and

branded in Sindhuli district as opposed to mandarin orange due to its indigenous local identity. Branding has helped in popularizing *Junar*, with special identity associated with the place 'Sindhuli' leading to a geographic indication of good quality *Junar* in the market. Three particular features are frequently mentioned while marketing *Junar,* i.e. origin, size, and peculiar taste. *Junar* as opposed to mandarin orange is also prioritized by the Prime Minister Agricultural Modernization Project (PMAMP) 2017-2027. Given the effort put forth by citrus farmers of Sindhuli to create an identity based on *Junar* and structural emphasis on the production of *Junar,* citrus farmers are becoming more conscious and sensitive towards *Junar* plantation. Although the farmers consider the market value for *Junar* and mandarin orange as almost equal, the structural emphasis on *Junar* has encouraged farmers to transition towards *Junar* production through incentives under PMAMP.

Plantation of citrus in an old-fashioned way is gradually changing, with the intervention by the agricultural development programmes as well as the increasing awareness among farmers. While Figure 4.5 presents idealistic activities under citrus orchard management, and its potential market channel, in reality many farmers do not follow such idealistic practice. A few well-aware citrus farmers carefully dig pits, fill it with a mixture of manure and soil, and irrigate the orchard occasionally. They follow most activities necessary to improve the quality of the tree, and eventually the fruits that the tree bears. On the other hand, there are some citrus farmers who still plant citrus saplings without digging pits. They don't follow orchard layout (space management) criteria deemed necessary for healthy growth of citrus trees. As some old generation citrus farmers recalled, 'we used to plant citrus like we planted chillies. Then the climatic conditions might have favored the growth of *Junar*. But now if citrus are planted like that of chillies, then they will die within a year. Without digging pits and ensuring soil nutrients, citrus trees won't grow anymore'. Although this view was shared by most citrus farmers, government extension service providers, and citrus facilitators, citrus orchard in the study site is a mixture of old and new practices. Some citrus farmers plant saplings with deep pits, and enough spacing between one tree and the other in terraced slope land. Whereas there are some farmers who still plant citrus only in the edges of paddy, maize and millet fields.

Figure 4. 6: Orchard Management Practices to Market Channel of Citrus



Source: Ethnographic field study and key informant interview, 2015/16

Most frequently observed citrus orchard includes of inter-cropping of citrus with maize/millet and vegetables in few plots, followed by mono-cropping of citrus, and citrus planted only on the edges of cereal crops. OVOP program along with other governmental and non-governmental support, facilitated by local *Junar* cooperative have occasionally launched programs to improve orchard management, pest management, post-harvest handling, processing of *Junar* and its value chain development.

Out of all the households living within citrus producing areas, at one end there are families having highest share of household income from citrus with an average income of eight lakhs per citrus harvest and on the other there are households earning less than five thousand per harvest. Three broad categories of households could be identified based on citrus ownership, i) households engaged in citrus plantation since long time, own inherited citrus trees, and income share from citrus is high; ii) households engaged in citrus plantation recently, may not earn enough yet, but aspire to earn through citrus plantation. iii) households engaged in citrus plantation recently, may not earn enough yet, don't even aspire to earn through citrus plantation. The variation in citrus ownership shows the way in which some families have been willing while others reluctant and more cautious in shifting their temporary cereal producing land into permanent citrus producing orchards. The number of citrus planted per household and the number of fruiting and non-fruiting trees that one owns varies based on when the farmers started to incorporate citrus with the objective of market-orientation. Although farmers proclaim themselves as citrus farmer, not all farmers have fruit bearing trees. Therefore, even those who have equal number of trees did not earn equal amount of money. Also, the number of fruits that one tree provided varied depending upon the type of citrus tree that one had planted. Trees could be differentiated based on whether the tree was grafted or was grown out of seeds. *Biju* trees known as trees grown out of seeds take maximum of eight to ten years to produce fruits, while grafted trees produce fruit within three to four years. *Biju* trees however, live longer and bear more fruits as they are also bigger in size. As some early adopters of citrus claimed, one *Biju* tree in their orchard would give 4000-5000 fruits per harvest, while grafted trees bear maximum of 1000 fruits per tree. With such a difference in number of fruit-bearing capacity those who already own *Biju* trees earn lot more than the others.

Second-generation citrus farmers usually inherit such trees from early adopters of citrus cultivation. Plantation of *Biju* trees are however rare nowadays, with every citrus farmer, old or new, planting grafted citrus bought from registered or unregistered nursery. While registered nurseries receive support from the government, there are few nurseries in operation that are not registered. Registered nurseries only sell grafted saplings. They plant selected mother trees, but use it only for grafting and is not used for sale. Some unregistered nurseries through which some locals buy saplings raise both grafted and non-grafted *Biju* saplings. While nursery as well as large orchard owners and government agriculture officials proclaim that the practice of planting non-grafted *Biju* saplings have been out-dated, some farmers still practice the old way of planting. These farmers also buy saplings from multiple sources or multiple nurseries, and at the same time plant *Biju* seeds. This choice between type of citrus- either grafted or *Biju* to be planted can be distinguished from the rationale of farmers to produce for the sole purpose of market, and those who don't see citrus as being their main source of income. Those who seek early return invest on grafted plants, especially kept inside screen house nursery, which costs hundred rupees (about one USD) per sapling. Another group of farmers who plant grafted saplings for early return, buy saplings from nursery that only costs thirty-five rupees but have higher risks of diseases like citrus canker. Expensive sapling is produced under screen-cover, while the other grafted plant is raised in open-field. With government subsidy, farmers can also buy such plants in half the price. Every farmer therefore has several options to choose from based on their degree of citrus market orientation. A detail description on the status of *Junar* production in Sindhuli District can also be found in Adhikari and Rayamajhi (2012).

4.5 Subsistence to Commercialized – and – Export-oriented Farming

'*Nirwahamukhi'*, '*bazaarikaran*', '*niryatmukhi*' are the three terms used by agriculture service providers, large farmers and small farmers alike to denote subsistence, commercial or market led farming, and export-oriented farming respectively. At present, all these terms are frequently used in the local context of Sindhuli. While very few citrus farmers stress on export-orientation, many provide their conviction towards varying degree of market-oriented production of livestock, vegetables and fruits. On the other hand, every farm families emphasize on subsistence farming as a mode of rural life, with most farmers providing reminiscence of the past

struggle to secure food, while some still stressing about their struggle to produce food for basic consumption. Subsistence farming is thus an integral part of agrarian life in the study site. Subsistence in the study area is characterized by mixed-faming system in which farmers produce diverse crops, and livestock for self-sufficiency. By self-sufficiency, farmers' intention is to provide enough food to feed the entire family for the whole year. One year's harvest of either one or two crops should therefore last for entire year until the next harvest. The ownership of *Khet* land is considered vital for the maintenance of the subsistence. Therefore, some better-off families own *Khet* land in distant places, which is occasionally supervised, but the production responsibility is mostly given entirely to the share-croppers or contract holders who are liable to pay the landowners with share of the crop or cash. Such families could maintain their cereal based subsistence need without having to contribute household labour for paddy cultivation. Unlike some families who sold surplus cereal production, there were also very few families who cultivated paddy to cater to the need of local market, within the periphery of their village. These families who produced cereal with market-orientation considered scaling up their production by buying new *Khet* lands and becoming more productive.

Livestock and poultry play an important role in a mixed-farming system, as it fulfills multiple purposes. Cows, buffaloes, goats, pigs, and chickens can support the family with subsistence milk, meat and eggs. It is also used as a source for manure that assists in enhancing productivity of crop. Livestock sale, especially goats is an important source of income for peasant families, as they sell goats during festivals to meet the increased demand of food and clothes for family, or during emergency related to health of family members. Income from livestock can be earned by selling the livestock, selling the by-product such as milk and manure, and by using livestock to plough the field. Although livestock is sold in the market, and is often produced for sale, livestock is still not considered as a product that should be scaled up by gradually increasing the number of livestock. Livestock is characterized by production for the family, and occasional income source rather than as a production characterized by market-orientation. Unlike citrus, or even vegetables, livestock are rarely considered as an agriculture product that can be specialized with intensive focus in the study area. However, compared to the past, the degree of market orientation for livestock at present seems to have decreased over time as asserted by many citrus farmers:

My father used to have fifteen to twenty— cows, buffaloes, and oxen. He used to take the herds to graze everyday. Those days they were called *gothalas* (cow-herders). What can we do? There wasn't any other way of earning money at that time. So when I was young, I remember my mother used to make *gheu*, lots of *gheu,* and my father would take the *gheu* when he traveled [to towns] to sell it. But raising livestock is difficult. [laughs] Once when my father was away, me and my mother decided to sell the cows. I saw that it was hard for mother to take care of livestock when my father was not around. When he was around, it was fine. But he had to travel time and again (Seventy-eight years old man from Baseshwor, early adopters of citrus).

Before we started earning large sum of money from citrus, I used to own 20 goats, and around 8 cows and buffaloes. My father also had a pair of oxen to plough. Me and my wife would work together, share our time to take the goats for grazing. But later we decided to decrease the number of livestock. There aren't even enough pasturelands any more. And the work is more difficult. You have to work each and every day, from morning to evening to make sure they are well fed. Now I only have two goats, and a cow. We recently sold two cows. We are ageing day by day, and my wife's health is also not good. So, we decided to reduce the number of livestock (Fourty-seven years old man from Tinkanya, early adopters of citrus).

I had six cows until a week back. Recently I sold three cows. I thought keeping too many livestock was increasing my workload. It's just two of us in the household, my husband and me. So, the milk is enough for us to drink everyday. We can also have enough *gheu* out of it. It's more than enough for two of us. Even the manure is enough. Now, I wont trouble myself more with large livestock. Instead, I will buy goats. Goats are easier to raise, as well as to sell. Selling goats has become more easier than selling cows now. [*laughs*] Now people have more money, and they want to eat meat more than they used to (Fifty-seven years old women from Tinkanya, early adopters of citrus).

Two patterns were found in terms of livestock, first, that the farmers, mainly citrus farmers were decreasing the number of livestock; another pattern was the

tendency to shift from large livestock to small ones. Livestock was seen as a major source of income by previous generation of farmers, with the tendency of increasing the number of productive livestock. However, at present there has been a shift in the way farmers view livestock as having potential for market orientation. The degree of market orientation of livestock is diminishing mostly in families that have other source of income, mainly from citrus. On the other hand, livestock still plays a significant role in terms of income-generation, especially among families that haven't been able to earn through citrus production:

> We have been increasing the number of goats. By selling goat, we can earn eight to ten thousand per goat. Unlike other households who have started earning lakhs from citrus, we haven't been able to do so. We have planted some saplings recently. Wonder when they will grow, and when we can sell citrus. Now, I even doubt if we may be able to earn from citrus. People say that the disease in citrus is ruining the crop. The fruits are falling. And big insects have started to come out of the fruit. If such situation does not stop, we might never be able to earn from citrus. So, we have invested in goats (Thirty-eight years old women from Ratanchura, late adopter of citrus).

> We started planting *Junar* quite late so we still haven't been able to earn from *Junar* production. We rely mostly on livestock sale. [Pointing towards the goats that were tied] These are sold every six months. […] See we don't have to worry about food, because we have enough *Khet.* For cash, this is what we do. Raise goats and sell them. Sometimes my son sends money; otherwise we have cash only from these goats (Fourty-two years old women from Baseshwor, late adopter of citrus).

> We sell pigs and goats, and some *gheu*. Sometimes I make bamboo *Doko*. But one bamboo costs hundred rupees. So if there is bamboo in my own land then I make it, otherwise I don't prefer making *Doko*. There is no profit in that. Our household income is insignificant. I am even embarrassed to talk about income. That's it, that's how we earn. Little by little. We earn some money from here, and some from there. If we could earn lots of money from one thing, then it would be easier

to say how much we earn. Frankly, we wouldn't even know how much we earn, and from where. Sometimes from work, sometimes from selling these livestock (Thirty-nine years old man from Tinkanya, late adopter of citrus).

Livestock in the study site is a major source of income-generation for families who have been late in the adoption of citrus. With some degree of market orientation, some families have been increasing the number of goats, but decreasing large livestock. Goats were raised for market production, unlike other livestock that were raised to serve multiple purposes such as manure, and food consumption. As compared to that of citrus and cereal, market orientation of goats had still not resulted in scale-enlargement, with an average of six goats to a maximum of fourteen goats. Moreover, if the number of livestock at present is compared with that of the number of livestock raised in the past, then the trend of farmers' involvement in livestock shows gradual decrease rather than an increase. Like livestock, vegetables were also produced with some degree of market orientation, and were a major source of income-generation. Large-scale and intensive vegetable farming for the market was more evident in areas that had better access to the road and outside market. Vegetables on the other hand are gradually being considered as a market-oriented crop, especially in areas that are closer to the market or highway. Depending upon the proximity towards the market, the degree of market orientation changes for vegetable farming. Similarly, in few areas where there is enough market integration as well as irrigation facility, production of vegetables for the market is prevalent even in areas that are further from the road or market. But in most areas, vegetables are produced only for home-consumption, with some families selling surplus vegetable in the local market. Many families are slowly taking intensive vegetable farming as a major source of income.

4.6 Conclusion

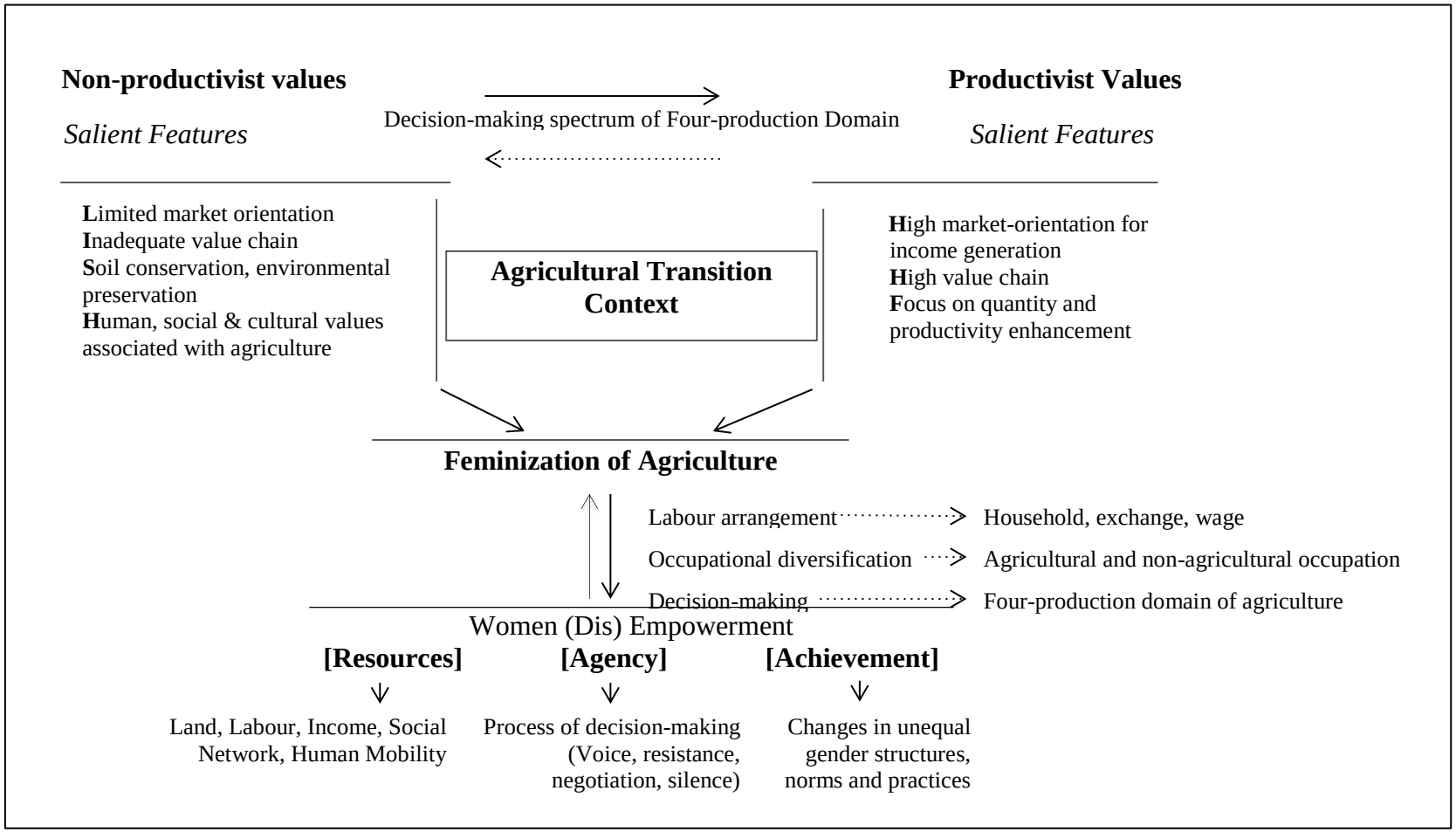
This chapter presents complexities associated with understanding agrarian change from a perspective of agricultural multi-functionality, where each household has different degrees of market orientation for each crop and livestock, and values given to each production domain based on its multi-functionality as shown in Figure 4.3. The four-agriculture production sector in the mixed-farming system prevalent in

the study site shows households inclination towards cereal, citrus, vegetable and livestock as having varied market-orientation. Given the market value of the crop/livestock at a given time and space, farmers are found to be making decisions on land use and income generation within the productivist/non-productivist boundaries. Farmers' decision to cultivate paddy, maize and millet over *Junar*, and *Junar* over cereal crops shows how farmers decide to make crop transition based on market and non-market value. When the citrus had low market value, then the farmers produced citrus with non-productivist objective, but as citrus started fetching more market price, then the farmers started to cultivate citrus in large scale with the objective of productivism. Such transition has also resulted in change in land use from mono cropping to phases of inter-cropping, multi-cropping, and again leading towards mono cropping of citrus in some plot of land. Expansion of citrus cultivation in the study site has also been influenced by the political economy, whereby the government and other organizations, including of farmers group and cooperatives supported commercialization of *Junar*. Efforts made by various actors in the expansion of market for Junar production and distribution have been considered as the political economy of Junar cultivation in the study site.

Citrus crop is hence presented as a crop that is more inclined towards the productivist spectrum, while cereal, vegetable and livestock as having medium productivist orientation, with vegetable and livestock as inclined more towards non-productive spectrum compared to other domains of production. Scale enlargement, intensive farming, focus on quantity, and high share of household income from a single crop characterize citrus cultivation. Thus, three broad categories of households have been identified based on citrus ownership, i) households engaged in citrus plantation since long time, own inherited citrus trees, and income share from citrus is high; ii) households engaged in citrus plantation recently, may not earn enough yet, but aspire to earn through citrus plantation. iii) households engaged in citrus plantation recently, may not earn enough yet, and don't even aspire to earn through citrus plantation. Acknowledging the diversity among farmers, these three broad categories of households suggest their household orientation towards market-oriented citrus production. The last category of household differs from the two other categories, as these households do not see citrus as having major contribution in their household income. However, the last category is similar to the second category in a

sense that households within these two categories haven't started to earn high income from citrus. These households therefore consider diversifying their livelihood through other means, out of which one of the means is by increasing their market orientation towards other crop/livestock. This is not to say that diversification of livelihood is not valued by large citrus farmers, but the large citrus farmers who have already started earning high income from citrus, do not expect to earn relatively higher income through other agricultural product than citrus. On the other hand, the households who do not aspire to earn high income from citrus focus their market orientation either towards cereal, vegetable or livestock. Thus, the degree of market orientation severely influenced farmers' decision within the broad spectrum of productivism and non-productivism. The degree of market orientation within productive and non-productive sphere provides a better conceptual basis on which cash crop and food crop could be examined. It positions food crop as having certain degree of market orientation, and cash crop as having a tendency to fluctuate their market orientation based on market value, geographical location and market proximity. Nevertheless, the study site is considered as having moderate multi-functionality as every household is engaged in four-production domain of agriculture, with varying degree of market and non-market orientation. As shown in Figure 4.6, the current study has contextualized multi-functional agriculture to further explore feminization of agriculture and women's empowerment in agriculture.

Figure 4. 7: Conceptual Framework on Feminization and Women Empowerment in Multi-functional Agriculture



Source: Author, 2017

CHAPTER FIVE

5. EXPLORING FEMINIZATION OF AGRICULTURE

The study so far has argued that food crop and cash crop can be understood as having varied degrees of market orientation within a productivist/non-productivist spectrum of multi-functional agriculture that has at least four production domains — cereal, citrus, vegetable and livestock. Regardless of the heterogeneity among farmers towards the degree of market orientation in citrus, or other crop/livestock, citrus is still considered as the high-value crop with high degree of market orientation in the study site. Thus, the introduction of citrus as a high-value crop have resulted in change in land use pattern, and ultimately brought about changes in the way labour is utilized. Within this context, this chapter focuses on how farmer's decision to focus on citrus production has shaped women's involvement in agriculture. The chapter presents three kinds of data related to labour use — i) sex-disaggregated information on current labour allocation within the household and number of hired labourers that was collected through questionnaire survey; ii) task or activity based gender division of labour (also using 4-point Likert scale data that have been extracted from narrative interviews, and semi-structured as well as unstructured interviews during the course of study. Without using forced choice to determine the scale using Likert scale based questionnaire survey, qualitative data provided by the respondents have been quantified into 4-point scale to compare and contrast the pattern of men and women involvement in different type of agricultural work); iii) the data that emerged from narrative interviews with women and in-depth interviews with men and women, regarding their own past engagement in agriculture, about the generational difference and their agricultural work as compared to their male/female counterparts.

Since empirical evidence of feminization can be best portrayed through measurable account of numbers, the numerical dimension of feminization includes of how many men and women from the household have been involved in the four production domain of agriculture; how many men and women from the household have

been involved in providing exchange labour for the production of four domains of agriculture; and how many men and women were hired for the production of four domains of agriculture. Task or activity-based gender division of labour provides a detailed break down of work under each crop/livestock production, and highlights who is involved in which kind of activity. Finally, the pattern in which data emerged from the field is used to provide meaning towards the current state of agricultural involvement of women and men in a changing agricultural context.

5.1 Labour Force Participation in Agriculture

The total number of household members above 10 years was considered as the total number of people available to work in the agricultural field. Therefore, the study has used the total number of household members above 10 years to understand labour force participation of men and women. The total number of household members above 10 years is 532, out of which 262 were males and 266 females. Considering that every household member above 10 years contribute their labour in agriculture, the study has calculated, i) Percentage of male household labour against total male population, and percentage of female household labour against total female population in four production domains of agriculture; ii) Percentage of male household labour providing exchange labour against total male population, and percentage of female household labour providing exchange labour against total female population in four production domains of agriculture.

Table 5. 1: Allocation of Household Labour in Four-production Domain by Sex

Production / Sex	Household labour (In Percentage)		Female to Male Ratio	Exchange labour (In Percentage)		Female to Male Ratio
	Male	Female		Male	Female	
i. Cereal	46.92	54.90	118.85	45.38	72.35	162.71
ii. Vegetables	19.23	52.65	278.00	0.00	6.06	-
iii. Livestock	36.50	54.17	150.52	0.00	1.13	-
iv. Citrus fruits	48.46	50.00	104.76	1.15	1.51	-

Source: Field Survey, 2015/16

Table 5.1 shows two distinct types of intra-household agricultural labour — household labour and exchange labour in four production domains of agriculture.

Household labour includes of agricultural work done by household members for self-production of crop/livestock. Exchange labour includes of agricultural work provided by household members in return for labour from others for the production of crop/livestock. Exchange labour is also known as reciprocal labour. Table 5.1 shows female participation as higher than that of male participation in each production domain, and in each type of labour input. Female to male Labour Force Participation Ratio (LFPR) in household labour for four production domain shows female household labour domination in vegetable (278) followed by livestock (150.52), cereal (118.85), and citrus (104.76). LFPR in exchange labour practiced by household member shows female domination in cereal production with a value of 162.71. Practice of exchange labour although insignificant in vegetable, livestock and citrus production, shows female labour as higher than that of male labour. The difference between household labour and exchange labour in cereal crop with higher percentage of women's participation in exchange labour could be a result of women's involvement in preparing food during household labour, but the same household member is free to participate during exchange labour. Hence, undercounting household labour of women.

Table 5.1 not only presents concentration of labour through numbers, but also highlights qualitative transformation of labour structure in different types of agricultural production. It shows that the practice of exchange labour, which is dominant in traditional cereal crop, is not evident in other three agricultural production domain.

As per Table 5.1, the system of exchange labour, known as '*parma*' in the study site, changes with production type. Cereal crop production uses both household labour as well as exchange labour, with heavy dominance of female share of agriculture labour in cereal. Production of vegetable, citrus and livestock on the other hand does not include of reciprocal labour. This shows that the labour need for the production of vegetable and livestock is mainly provided by household labour, as neither exchange labour nor hired labour (See Table 5.2) is used in these two domains of production. Citrus on the other hand uses household labour with minimal gender difference in household labour input. Unlike, vegetable and livestock, citrus production includes of hired labourers as shown in Table 5.2. Table 5.2 presents the percentage of male and female hired labourers, and the ratio of female to male hired labour participation rate. The data shows higher female wage labour participation in all production domains, with significantly higher female-male ration in cereal crop. The data in Table 5.2 also shows the wage labour market that

is being shaped by citrus production, with twice as much wage labourers being hired for citrus crop than in cereal production. Given the higher number of wage labourers employed in citrus crop production, the need for labour is being provided by the labour market than by the traditional exchange labour practice, which is discarded with the introduction of new horticultural crop.

Table 5. 2: Hired Labourers in Four-production Domain by Sex

Type of production / Sex	Hired labourer			
	In Percentage		Total Labour Units	Female-Male Ratio
	Male	Female		
i. Cereal	32.55	67.44	258	207.14
ii. Vegetables	46.15	53.84	26	116.66
iii. Livestock	0.00	100.00	2	-
iv. Citrus fruits	40.60	59.39	564	146.28

Source: Field Survey, 2015/16

5.2 Household Labour Arrangement

Households have been labeled under three major categories according to the type of labour arrangement that was prominent in the study site:

Category 1: Household labour, no exchange labour, hire labour,
Category 2: Household labour, exchange labour, hire/no hire labour
Category 3: Household labour, exchange labour, hire/no hire labour, work as wage labourer

Total of 15.10 percent of households belong to Category 1, 63.3 percent of household fall under Category 2, and 21.57 percent of households under Category 3. Transition from cereal to citrus crop was observed to be higher in households under Category 1 than in other categories of household. In order to understand the relationship between citrus plantation (Early adopters and late adopters) and type of household category based on three labour types, a correlation was generated using STATA 14.1. Additional variable land size was also added to determine the relationship between these three variables —land holding, stage of citrus plantation, and type of labour. Table 5.3 shows negative correlation between size of land holding and type of labour use prevalent

in the study site, whereas type of labour was moderately related to citrus plantation. This shows that irrespective of size of land holding, citrus plantation have influenced the way in which the household is currently using different types of labour practice available in the study site. Rather than land size, the land available for cereal production due to citrus crop plantation is changing the dynamics of exchange labour. Although most households under Category 1 who have stopped using exchange labour are the early adopters of citrus, there are many early citrus adopters in household Category 2 who are still conforming to the traditional practice of exchange labour.

Table 5. 3: Pairwise Correlation of Land Size, Citrus Plantation, and Type of Labour

	Size of Land-holding	**Citrus Plantation**	**Type of Labour**
Size of Land-holding	1.0000		
Citrus Plantation	0.1657	1.0000	
Type of Labour	-0.0273	0.2603	1.0000

Source: Field Survey, 2015/16

Excerpts from the narratives of large citrus households, especially those who belong to early adopters of citrus stress on how labour use has changed over time:

> We don't have *Khet.* So, we used to plant *Ghaiya* in our *Bari.* People used to come to our *Bari* to work, and I used to work too during plantation and harvesting time for maize and millet. My mother-in-law used to cook for all of us working in the field. She occasionally joined me during *parma*, but mostly spent her time in household work. Now, it has already been many years, may be seven-eight years that I haven't worked as an exchange labourer. Especially since we started planting more *Junar* and *Suntala*. After *Junar* were planted, there was less land for cultivation of cereal. So instead of *parma*, we hire labourers when we need them. There is no point in me going to work on somebody else's field and provide more labour (Early adopter of citrus, female farmer from Tinkanya, age 44).

> We have *Khet* but we don't cultivate it ourselves. We have given in *thekka* to dalit families living in uplands. They provide us five thousand rupees per year for more than seven ropani of land, and some land is under *adhiya*. It's only been four-five years that we started giving out *Khet* land to others. Before, we used to go to others field, and they used to come to ours. But now we don't go. […] Actually, I

never went to work in the field. It was my parents who used to go. I was away from home for many years. I returned back after my father died. Now, we are more focused on citrus plantation. We don't want to sweat [suggesting hard work, while the literal meaning refers to perspiration] in agricultural field like our parents did (Early adopter of citrus, male farmer from Tinkanya, age 46).

We have sold the *khet* land to other farmers living nearby. Recently we did that. What are we supposed to do when it has become really difficult to get wage labourers? There aren't even people who could provide *adhiya*. Time has changed. If we ask people to come for plantation and harvesting of paddy, maize and millet, then people expect us to work in their field too. They expect physical labour in return. These work demand lots of labour, so more than money, people want labour in return. Even when you have money, you cannot buy labour (Early adopter of citrus, female farmer from Ratanchura, age 46).

Households that have moved away from the practice of exchange labour suggest decreasing land for the cultivation of cereal crop, and use of *thekka* (Contract) or *adhiya* (share-cropping) to decrease the responsibility of cereal crop production. Thus, decrease in land-size for the cultivation of cereal rather than the access or ownership of land or even availability of cash to hire wage labourers, is resulting in households moving out of the practice of exchange labour. However, only a small proportion (15.10 percent) of households have been able to move away from exchange labour practice. With eighty-four percent of household practicing labour exchange, exchange labour is still a dominant part of labour supply in the study site. As highlighted by one of the informants, 'If we ask people to come for plantation and harvesting of paddy, maize and millet, then people expect us to work in their field too', which means that reciprocal labour is part of social arrangement within the cereal crop production. Households are forced to provide exchange labour as a result of unavailability of wage labourer during peak season of cereal crop production and harvesting. The practice of exchange labour, which had been carried since earlier generation, is still valued, but at the same time there are households who are trying to move away from the practice of exchange labour. Although households are aspiring to decrease their labour input in production of cereal crops, labour shortages during peak agricultural season has constrained many households to work

in their own cereal production land as well as provide labour on somebody else's land. Many such cases were evident in households under Category 2, which included of both early as well as late adopter of citrus:

> Without *parma* we won't be able to grow food. Although we are ready to hire labourers, there aren't any labourers during peak season. Everyone is busy in his or her own land. Those labourers work in their own field for few days. Once they finish their work by helping each other, they then start working in others field. It takes two-three days of work in one field, so if they have five households working together, then they will spend around fifteen days working for each other. So, by the time we can ask them to work for us, it's already too late. Instead of waiting for labourers, we pool labour from *chhar-chhimek* [neighborhood] (Late adopter of citrus, female farmer from Baseshwor, age 49).

> No matter how much money you earn, if you are staying in a village then you will have to work like a villager. There isn't anyone who is small or big, even rich or poor when it comes to work. Everyone has to sweat for food. You cannot survive with these Junar, so we need to grow paddy, maize and millet. It's decreasing compared to before, but because of the, *bikase mal* (chemical fertilizers), the overall production has not decreased. But land in which we used to grow cereal crop has decreased (Early adopter of citrus, male farmer from Ratanchura, age 44).

Table 5.4 presents the concentration of labour force in four domains of agriculture production based on categories of households. Table 5.4 shows distribution of household labour, exchange labour and hired labour among three categories of household for four-production domain. Category 1 household uses negligible household labour in cereal crop production, with no exchange labour and a significant proportion of hired labourers. As shown in Table 5.4, household under Category 1 has high concentration of wage labour force. Households under Category 2 have high concentration in all three types of labour arrangement. Finally, households under Category 3 have high concentration in household labour and exchange labour, rather than labourer hired on a wage basis. Households under Category 2 practice exchange labour similar to the households under Category 3, with the use of household labour in return for wage by Category 3 households as the only difference between these two

categories of households. Both categories of households may or may not hire labour based on availability of wage labourers as well as household members. But according to Table 5.4, Category 2 household use large number of hired labourers, similar to Category 1 households.

Table 5. 4: Concentration of Labour Arrangement by Categories of Household

Production Type / Sex	Categories of Labour (in Percentage)					
	Household Labour		Exchange Labour		Hired Labour	
	Male	Female	Male	Female	Male	Female
Household Category 1						
i. Cereal	0.00	1.38	0.00	0.00	41.66	45.97
ii. Vegetables	4.00	14.38	0.00	0.00	41.66	50.00
iii. Livestock	3.16	15.38	0.00	0.00	0.00	0.00
iv. Citrus fruits	15.07	15.90	0.00	0.00	48.47	39.70
Household Category 2						
i. Cereal	67.21	71.00	74.54	72.92	48.80	52.29
ii. Vegetables	70.00	64.02	0.00	100.00	58.33	50.00
iii. Livestock	71.60	60.84	0.00	66.66	0.00	0.00
iv. Citrus fruits	69.04	67.42	100	100.00	47.16	57.31
Household Category 3						
i. Cereal	32.79	27.60	25.42	27.08	9.52	1.72
ii. Vegetables	26.00	21.58	0.00	0.00	0.00	0.00
iii. Livestock	25.30	23.78	0.00	33.33	0.00	100.00
iv. Citrus fruits	15.87	16.66	0.00	0.00	4.36	2.98

Source: Field Survey, 2015/16

5.3 Task-based Gendered Division of Labour

Task-based division of labour comprises of list of different activities under each production domain, and the pattern of activity in which male and female are mostly engaged. As shown in section 5.1, type of labour changes based on the domains of production, resulting in varied gender based labour need of household labour, exchange labour and hired labour. Labour arrangement for each production domain also varies based on different agricultural activities. Detailed breakdown of activities and gender-based engagement of household labour, exchange labour and hired labour has been analyzed by categorizing households based on whether the household member participates in exchange labour, whether the household hires outside labour, and whether

the household is engaged in working as a wage labourer. Further analysis of the data is based on the three categories of household as per their labour arrangement. Households under Category 1 have been mainly used to understand task-breakdown of household labour in four-production domain, with varying degree of market orientation within the productivist/non-productivist spectrum of multi-functional agriculture. Category 1 households have high market-orientation of citrus, with diminishing focus on cereal crop production, and limited production of vegetable and livestock. The share of income from citrus in these households accounts to Rs. 400,000 in an average based on the sales in 2015-2016. The average household income from citrus in Category 2 household is Rs. 150,000, and for Category 3 household is Rs 15,000. Most of the households under Category 2 have moderate to high market orientation of citrus, with substantial focus on cereal crop production as is evident from the practice of exchange labour, and moderate production of vegetable and livestock. Household under Category 3 has low to moderate focus on citrus production, substantial focus on cereal crop production, and moderate focus on vegetable and livestock. Main feature of households under Category 3 is regarding their engagement in wage employment, either in traditional cereal crop production or in the new wage labour market created by citrus crop.

5.3.1 Household Division of Labour Among Large Citrus Farmers

Large citrus farmers mainly fall under Category 1 households. These households do not practice exchange labour, but hire outside labourer, and use household labour in agriculture to fulfill labour need. Although these households have gradually reduced their engagement in cereal production, they have not completely abandoned production of cereal crop. Some of these families have sharecroppers who produce cereal, mainly paddy for them in their land. In such cases these families provide seeds and fertilizers, and get half the share of production after harvest. Such families have no labour input in production, nor do they have supervisory role. Their engagement is prominent mainly during post-harvest of cereal. Besides those who practice sharecropping, most of the households under Category 1 hire outside labourers to work on their field during cereal production, with minimal supervisory role. Since cereal production does not include of new ways of doing things, even those who are hired are capable of working efficiently with minimal supervision. During cereal production the role of female member of the household is higher than that of male member as female are responsible to prepare food

for the hired labourers. In some families, however, the work of cooking is also given to some hired labourers who are engaged in preparing the food for rest of the workers. Women from these families prefer to hire another female labour from their own caste to cook and clean the dishes, once again, after the hired labourers themselves have cleaned the dishes.

> I don't mind cooking for the labourers. But what I don't like is to wash the dishes that have been used by the labourers who belong to lower caste than us. Not that they don't wash it. They wash it, but we have to wash it again before we can take the used dishes inside our kitchen. So I prefer to hire female labourer from our own caste who will do the cooking as well as wash the dishes that have been washed by other labourers belonging to lower caste. Since this has been the practice for a long time, I don't feel comfortable using the dishes without washing it again. People tell us not to discriminate, but old habits are not so easy to change. We do eat together though these days. You might find these things amusing since you have grown up in Kathmandu. But here this change is already something good, isn't it? (Female respondent, aged 44).

Hence, women ensure timing of work and leisure of labourers, which is decided, based on the time allocated for food consumption. The role of female respondents is also high when the use of manure for cereal production is concerned. Female member usually supervises the amount of fertilizer to be provided by the household. The work of male member is however prominent when cereal crop is produced in land where citrus is also being planted. In such a situation, men supervise other men during ploughing to ensure that plants are not being pulled off. Men's supervisory role in cereal production is therefore evident as a result of their concern for citrus plants, rather than for enhancing cereal production.

> Men and women alike are experts in cereal production. Everybody knows what to do and how to do it. Some may be more efficient than the others but everybody is well aware of working without telling what to do during cereal production in lands where only cereal is produced. [Chuckles] But when cereal is planted with citrus, then not many people know how to plant multiple crops. Whether it is vegetables or cereals. Whenever work is being done in citrus-

> planted areas, I prefer to overlook and supervise the work. If citrus plants are damaged then it will be a great loss. While our mother or wife prepare food for the labourers, we monitor the work being done in the field (Male respondent, aged 46).

Women's work during cereal production in these households is limited to preparing food, and supervision of manure application in lands which are used for mono-cropping as well as inter-cropping with citrus. Men's work in cereal production is limited to supervision of cereal production in areas where inter-cropping with citrus is practiced. Women from these households nevertheless heavily dominate post-harvest work on cereal. Post-harvest work on cereal is often considered as an extension of food provision, thereby women are considered responsible for storing, allocating and managing cereal distribution throughout the year. Except for storing straws, most post-harvest work such as drying crop residue, winnowing, threshing, seed selection is performed by women in these households.

Table 5.6 provides gender-based division of labour in cereal, citrus, livestock and vegetable farming of seven households. Men's work in livestock and vegetable production is lower than that of women. In comparison, men's role in citrus production is higher than that of women in these households. Men's interest in either cereal production or vegetable production in particular is associated with inter-cropping with citrus. In all seven cases, men's involvement in citrus is more prominent, but their input is still partial because of the use of wage labourer in citrus production. In other agricultural works where wage labourers are not hired, household women handle complete responsibility. Such work includes of post-harvest of cereal, tending livestock and vegetable production. Involvement of men in vegetable production is also noticeable in households where vegetable is produced with some degree of market orientation. In such cases, agricultural labourers are also hired; hence, women don't have to do all the work in vegetable production where vegetable is produced with in large-scale with some degree of market orientation.

These households use large number of wage labourers in citrus production (see Table 5.4), with men and women labourers being hired for specific tasks a shown in Table 5.5. Mostly women labourers are hired for carrying fertilizer, regular mulching

and weeding. Men labourers are mostly hired for digging holes, and during harvest. Except for tasks such as mulching, weeding and application of fertilizer, men's input in citrus production is more than that of women as shown in Table 5.6. Work mostly done by women in citrus crop, includes of traditional work that women used to do even in cereal crop production. These activities do not include of new skills or technical know-how and hence, considered easier, but tedious. Activities that are usually considered as skillful work such as orchard space management, preparation of Bordeaux paste, and spraying insecticides, is where the household male is mostly engaged.

Table 5. 5: Sex-disaggregated Work in Citrus Production

Work under Citrus Plantation	**Features of each tasks**	**Household Labour**	**Wage labourers**
Land preparation			
• Orchard layout	Technical skill	Mostly male	
• Dig holes or pits	Strength, need precision		Mostly male
• Carry fertilizer	Menial, regular task	Mostly female	Mostly female
• Mix fertilizer and soil, and cover the pit	Requiring certain skill	Both	Both
Plantation			
• Plant saplings using wooden/bamboo sticks	Requiring certain skill	Both	Both
• Regular watering	Requiring certain skill, especially for nursery plants	Both	
• Regular mulching and weeding	Menial, regular task	Mostly female	Mostly female
• Regular application of fertilizer	Menial, regular task	Mostly female	Mostly female
• Spray insecticides	Technical skill (Health hazardous)	Mostly male	Mostly male
• Harvest	Priority to labour with lean and agile body	Both	Mostly male
• Prepare Bordeaux paste,	Technical skill	Mostly male	
• Clean the trunk and apply Bordeaux paste	Requiring certain skill	Mostly female	Both
• Cutting, trimming and pruning	Requiring certain skill	Both	Both

Source: Field Study, 2015/16

Table 5. 6: Gender-based Division of Labour of Households under Category 1

Type of work	Household 1		Household 2		Household 3		Household 4		Household 5		Household 6		Household 7	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Cereal														
Supervision	✓	✓	✓	✓	✓	✓✓	✓✓	✓	✓	×	✓✓	✓	✓✓	✓
Post-harvest	×	✓✓	×	✓✓✓	×	✓✓✓	✓	✓✓	×	✓✓✓	✓	✓✓	×	✓✓
Citrus														
Land preparation, plantation	✓✓	✓✓	✓✓	×	✓✓	×	✓	×	✓	×	✓✓	×	✓	×
Watering	✓✓	✓✓	✓✓	✓	✓✓	×	✓✓	✓	✓✓	×	✓✓	✓	✓✓	×
Mulching, weeding	✓	✓✓	×	✓✓	×	✓	×	✓✓	✓	✓	×	✓✓	×	✓
Application of fertilizer	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓
Prepare bordeux paste, spray insecticides	✓✓	✓✓	✓✓	×	✓✓	×	✓✓	×	✓✓	×	✓✓	×	✓✓	×
Cutting and trimming	✓✓	✓✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	✓	✓✓	×	✓✓	✓
Harvest, selling	✓✓	✓✓	✓✓	×	✓✓	✓	✓✓	×	✓✓	✓	✓✓	×	✓✓	✓
Livestock														
Fodder collection	✓	✓✓✓	✓	✓✓	×	✓✓	✓	✓✓	×	✓✓✓	×	✓✓	✓	✓✓
Prepare *Kudo*, milking, feeding, manage dung	✓	✓✓✓	×	✓✓✓	×	✓✓	✓	✓✓✓	×	✓✓✓	×	✓✓	×	✓✓
Vegetable														
Prepare soil, planting, watering, mulching, weeding, harvesting	✓	✓✓	×	✓✓✓	×	✓✓	×	✓✓✓	×	✓✓	×	✓✓	✓	✓✓

Scale to define work input: × no work at all ✓ some work ✓✓ most work ✓✓✓ all work

Source: Field Survey, 2016

5.3.2 Exchange Labour and Household Division of Labour

The most prominent characteristic of Category 2 household is exchange labour. Regardless of households' capability to hire labour, most of the study population belongs to this category with almost 65 percentages of households. Practice of exchange labour is a result of household's involvement in cereal crop production as other types of agricultural production includes of exchange labour only as an exception. Given that farmers are engaged in cereal crop production, farmers in the study area consider exchange labour as a necessity to ensure food production:

> When it comes to agricultural work, we are all the same. We all work in the field. We work in our own fields and work in other's field too. They come and work in ours. We reciprocate labour so that we can efficiently finish our work. We form groups, usually 10-15 families or households' work together. Somebody fixes the date on which his/her field will be ploughed, planted, or harvested. We either agree or disagree with the date, and fix another date. Then somebody proposes another date on which his or her field will be worked. Then the other will do the same, until everybody's field is worked. If we don't work for others then others won't come work for us, which will result in leaving the land barren, because we don't get people who work for money. Its really difficult to get people who can work for money in this village or even in nearby villages. Even if we get labourers to work in agriculture, we don't get labourers during cereal crop harvest and plantation. The only option is to provide labour to get labour in return. (Male farmer from Baseshwor, aged 54)

In case of cereal production four types of production arrangement was evident, namely *Thekka* or contract, *adhiya* or sharecropping, *jan lagauney* or employ wage labourers, and *parma* or use of exchange labour. *Jan lagauney and parma* are often used interchangeably in day-to-day conversation in the study site. *Pakhuri satney* is yet another term used to mention the system of exchange labour. *Jan* is often used to define either or all forms of labour including of household labour, hired labour and exchange labour. *'Jan'* literally means people, and is used to describe labour need and labour availability. Similar to households under Category 1, some households from Category 2 also gave their land for production of cereal under *thekka* and *adhiya*. Except for the

practice of exchange labour, these two categories of households had many commonalities. Commonalities and variation between three categories of household is given in Table 5.7.

Table 5. 7: Commonalities and Variation between Categories of Households

Household	**Features of Households**					
Category 1	Early citrus adopters	High aspiration from citrus	No exchange labour	Reduced cereal cultivation	Market orientation a. Livestock: low b. Vegetable: moderate	Give land to sharecroppers and tenants
Category 2	Early citrus adopters plus late citrus adopters	Moderate to High aspiration from citrus	Exchange labour	Moderate to high focus on cereal cultivation,	Market orientation a. Livestock: moderate b. Vegetable: moderate	Give land to sharecroppers and tenants
Category 3	Late citrus adopters	Low to moderate aspiration from citrus	Exchange labour, work as wage labourer	High focus on cereal production	Market orientation a. Livestock: moderate b. Vegetable: moderate	Work as sharecroppers and tenants

Source: Field Study, 2016

Households under Category 2 had many features similar to that of Category 1, with few features similar to households under Category 3. As a result the task-based division of labour showed minimal direction of change, unlike in Category 1 where male presence in citrus farming was clearly evident, with less involvement of both men and women in the production of cereal crop. Households with high aspiration from citrus plantation under Category 2 households, showed similar patterns of male and female engagement in citrus plantation like that of Category 1 households. But those households who had moderate to less aspiration from citrus showed a different pattern, with less wage labourers, and high engagement of both men and women in most of the activities with women domination in tasks such as mulching, weeding and application of fertilizer as shown in Table 5.8.

Table 5. 8: Division of labour by Farmers with Low to Moderate Aspiration from Citrus

Citrus Orchard Management Practices	Household Labour	Wage Labourers
Land preparation		
- Orchard layout	Mostly male	
- Dig holes or pits	Both	
- Carry fertilizer	Mostly female	
- Mix fertilizer and soil, and cover the pit	Both	
Plantation		
- Plant saplings using wooden/bamboo sticks	Both	
- Regular watering	Both	
- Regular mulching and weeding	Mostly female	
- Regular application of fertilizer	Mostly female	
- Spray insecticides	Mostly male	
- Harvest	Both	Both
- Prepare Bordeaux paste,	Mostly male	
- Clean the trunk and apply Bordeaux paste	Both	Both
- Cutting, trimming and pruning	Both	

Source: Field Study, 2016

Households under Category 2 had more chances of either being under Category 1 as presented by some households' eagerness to leave exchange labour practice, and also of being under household Category 3 as were evident in some cases:

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

> If we get to finish our work at home, then only we can work for wage. If we don't finish homework, then how can we leave? My husband leaves for work, for construction work. I am alone at home most of the time. Children also go to school. So, if I leave then there wont be anyone to look after the cows and goats. I have to manage time to gather feed and fodder for them, water them once in a while. Moreover, during *ropai* (plantation season), there is always a rush. You go to one household and next, they come to ours. It's always a rush during plantation (Women farmer from Ratanchura, aged 41).

Task based breakdown of work by gender under cereal production as shown in Table 5.9 presents inclination of list of activities done under land preparation, plantation, harvest, post-harvest and regular monitoring. Works usually done by men includes of land clearance, ploughing, leveling the field, repair of irrigation canal and maintenance of tools and equipment. Works mostly done by women includes of sowing and plantation, and almost all works under post-harvest. Except for few activities associated with land preparation and ploughing, both men and women do every other activity. Ploughing is the only activity that is culturally not appropriate for women to get engaged in. Since men do ploughing, men also mostly perform leveling of field that is followed after ploughing. Terms used to define workers during land preparation for paddy plantation includes of '*hali or haliya*', '*lathey*' and '*baosey*'. *Hali* or *Haliya* are men who plough the field. *Lathey* are men labourers who assist in the preparation of land for plantation and construction or raising bunds or *aali* that holds water for irrigation, and beat large soil clods when needed. *Baosey* is a special type of *lathey* who does leveling of the field to give a final touch before transplanting seedlings. For one *lathey* or *baosey*, which is a male labourer, one male should replace the same labour. In case of absence of male labour in the household, two female labourers should provide their labour. In case of one *hal* which includes of one *hali* with an oxen pair, four female labour days should be provided, if not for an exchange of another *hal*. Women usually work as *ropar* or plantation labourer. Their work is also prominent during intercultural operations like manure application, weeding, mulching, cutting, and bundling. Exchange labour arrangements in most of the study sites have misconstructed women's surplus labour as compared to that of men, as a result of either double or sometimes three or four-fold labour provision for women in return for one man labour.

Table 5.9: Gender-based Tasks in Paddy Production[1]

Tasks mostly done by men	Tasks usually done by both	Tasks mostly done by women
Land clearance/ Slash and burn		
Harrowing and break large soil clods		
Ploughing using Ox-drawn wooden plough		
		Break large soil clods using hand hoe
Leveling the field using wooden plank		
Bund preparation (raised soil)		
Irrigation/water management		
	Seedbed preparation	
		Sowing
		Transplanting
		Apply manure
		Remove weeds
Routine repair of irrigation/drainage		
	Harvest (Cutting and bundling)	
	Threshing and winnowing	
		Dry crop residue
	Arrange straws for storing	
Repair and maintenance of equipments and tools		
		Seed selection and storage of grains

Source: Field Study, 2016

As an exception to the rule, one woman also ploughed her own *bari*. A year before the fieldwork, she had ploughed the land using *halo-juwa* or traditional ploughing tool, but without the oxen. Seeing her plough the land, a man from her village who was passing by, pitied her, and provided his labour as he could not see a women struggle to plough the land. There were other men who saw her plough and mocked her, suggesting that she should start wearing her husbands *dhoti* or loincloth worn mostly by Hindu men. At an extreme end of exchange labour practice, unavailability of male member in the household puts women in a vulnerable position where they are likely to be indebted towards male labourers under the practice of exchange labour as well as through higher wage rate of men labourers in cereal production. However, if a male labourer provides

[1] Paddy production has been considered as the prototype of cereal crop production. Although tasks under millet and maize production is different, the pattern of men and women engagement is similar mainly in activities such as ploughing and field leveling for men, and weeding, fertilizer application for women.

work other than that of *hali, lathey or baosey*, then the number of male labour work can be reciprocated equally by female labourers. One day of work by male labour in carrying fertilizer, applying fertilizer, weeding, cutting, bundling, and other works can be replaced by one day of female labour. This could be the reason why women are more concentrated in these works, as men would most likely engage themselves in better paying work, leaving women to perform such tasks.

In terms of vegetable and livestock production, men's engagement is more prominent where the household is producing in large-scale with some degree of market orientation. Otherwise, women mostly provide household labour for vegetable production at subsistence level and for market too but in small-scale. They usually solely decide on what to plant, where to plant, how to plant, and when to plant. Since vegetable production for home consumption is considered as an extension of women's responsibility to feed the family, men hardly provide their labour or even their managerial input. Vegetable production decision is moreover influenced by outside factors such as seeds and inputs provided by DADO, District Women Development Office (WDO), and NGO/INGO intervention to improve women's status in agriculture or to empower women or to enhance households nutritional outcome. Few women vegetable entrepreneurs were found, especially living nearby road and market areas, from all three categories of household, with most women vegetable farmers from households under Category 2. There were however more men vegetable entrepreneurs than women vegetable entrepreneurs, especially in few areas of Ratanchura and Nakajoli in Baseshwor. Vegetable, more than citrus farming had also lured youths, especially men in Ratanchura to return back to their village. These youths had already started commercial vegetable farming, and had recently started to get actively engaged in citrus orchard establishment. These entrepreneurs use family labour, usually of mothers, fathers, and wives to improve production of vegetable as well as citrus, with minimal hired labour. In case of vegetable farming, either for commercial purpose or for household consumption, women perform all work, starting from land preparation to planting, watering, mulching, weeding, fertilizer application, harvesting, and seed selection. Since subsistence vegetable is planted in small portion of land, women tend to prepare the soil by using spade and hand-hoe instead of depending on ox-drawn wooden plough. They also prepare *'dyang'* or furrows for cultivation of vegetables such as cauliflower, tomatoes, cabbage, spinach, lettuce and other vegetables. Given that there

aren't any works typically suited for men, women can independently cultivate vegetables without needing any support from their male counterparts or male labourers as in the case of cereal production.

In terms of livestock management, both men and women engage in fodder collection, watering and feeding the animals, prepare feeds, and perform milking, herding, and dung management activities. Both men and women look after small and large animals including of chickens, pigs, goats, cows, buffaloes, oxen, and bulls. But usually bulls and oxen are taken care of by male members of the households. These two male species of large animals are not commonly found in every household unlike other livestock. Households that raise oxen are usually professional *halis* who not only perform exchange labour but also work as wage labourers. Some households on the other hand own oxen in order to use oxen for ploughing of their own land as well as to rent out oxen. Unlike professional *halis*, these men may or may not plough other's field, and in return receive either full payment for man labour as well as for the oxen used, or may provide oxen but not their own labour. Similarly, bulls are rented out for breeding purpose. Depending upon the distance and number of days bulls and oxen are used, these households receive Rs 800-1000 per day. Since male species of large animals are more aggressive and difficult to handle than females, men usually proclaim ownership of these livestock. Exclusive role of men in livestock management found during ploughing, and breeding operation, with day-to-day task of feeding, watering and other activities shared by both men and women. Households that own bulls and oxen either fall under Category 2 or Category 3 households. Depending upon the scale of production, very few households under Category 2 hire outside labour in livestock, and vegetable production, with household labour being the major source of labour supply.

5.3.3 Wage labour and Household Division of Labour

Households that fall under Category 3 includes of at least one of the household member working as hired labourer in agriculture. Such households can be differentiated based on households working in traditional cereal crop production along with any other agricultural wage employment and another category of hired labourers who work only in citrus production. Typical work of male wage labourers in traditional cereal crop production included of men labourers mostly working as *hali, lathey and baosey*, while

women labourers working as *ropar* during agricultural peak season. Other agricultural tasks mostly conducted by women includes of carrying manure, manure application, weeding, and grain harvesting. Although these activities are not socio-culturally distinct as that of *hali, lathey, baosey,* and *ropar*, these activities have become women's task. In an average one-man (*hali, lathey, baosey*) labour earns Rs 800-1000 per day and one woman (*ropar*) labour earns Rs 200-300 per day. For works that are done during agricultural lean season, women earn around Rs 150-200 per day, while men earn around Rs 200-300 per day in an average. Although both men and women were considered to earn equally for other works during agricultural lean season, except for few sites (smaller localities within the ten selected villages) where men earned more than that of women, women's daily wage was still lower than that of men. Women's daily time commitment which was different than that of men as pointed out by the informants in the study site was a reason for men earning more than women despite equal wage rate for per day. Women typically worked two to three hours late than most men labourers as women joined market or wage labour work only after finishing their household work. Men on the other hand left home right after having their first meal, unlike women who had to finish their households chores before they could leave for market related work. Men mostly left home in the morning around seven o'clock whereas women left home after ten o'clock in the morning.

Work at household level for men and women is more flexible, with women also performing tasks such as leveling the field, assisting during bund preparation, beating clods during land preparation. But when it comes to the labour market, women are not hired for work that is usually conducted by men. In some households where exchange labour was practiced, men from few of these households neither performed exchange labour nor did they work as wage labourers, while female members of their household worked as exchange labourer as well as wage labourers. Some of these men however performed every agricultural task at household level, including of carrying manure, manure application, and weeding, which is often considered as women's work in the study site. Some households hired male labourers instead of using household man's labour, but they still practiced exchange labour, as women from these households had not stopped reciprocating labour. Few women did not perform exchange labour, as their husband's and other male family member's labour as *hali, lathey, baosey,* was enough to get women labourers needed to work in their plot. Thus, work of male household

member in cereal crop was significant in determining household women's labour as part of labour pooling.

Those households who work as hired labourers only in citrus production are the new agricultural wage labourers who otherwise would have been included in households under Category 2:

> Finally, I have finished my household work. We never get time from household work. Only if we get time out of household work can we work outside, isn't it? It's never easy to take out time. Every other time there is something to do. Just recently I finished working on *kodo* [millet]. Work in own *bari*, then work on others *bari*. I don't know how I could manage time. This is the first time I have come to work for wage. Everyone was talking about how much we can earn in citrus farm, so I also came this year. […] In total, I have worked for four days this year for Rs 500 per day. What can I do? I had heard that they need labour, but I could hardly manage time (Women farmer from Tinkanya, aged 38).

> I have never worked as agriculture labourer. If I had to help my parents with work, then I did it in my own farm. But this is the first time I am picking *Junar*. Those *dai* [elder brother] that we knew from before, called us. They said '*Bhaiharu* [younger brothers] come and do some work; don't waste your time doing nothing. You also get to earn five hundred rupees per day.' So we came to work. Just during this season. After this work, may be I will go back to Kathmandu (Male informant in Baseshwor, aged 22).

Table 5. 10: Wage Rate for Citrus Production Activities (as of 2015/16)

Work under Citrus Plantation	**Wage Labourers**	**Wage Rate**
Land Preparation		
- Dig holes or pits (Usually 3 x 3 ft.)	Mostly male	Rs 100 – Rs 125 per pit
- Carry fertilizer	Mostly female	Rs 150 – Rs 200 per day
- Mix fertilizer and soil, and cover the pit	Both	Rs 150 – Rs 300 per day
Plantation		
- Plant saplings using wooden/bamboo sticks	Mostly male	Rs 200 – Rs 300 per day
- Regular application of fertilizer and weeding	Mostly female	Rs 150 – Rs 200 per day
- Harvest	Mostly male	Rs 500 per day

- Porter*	Both	Rs. 10 for 50 pieces of fruit
- Clean the trunk and apply Bordeaux paste	Both	Rs 300 – Rs 500 per day
- Cutting, trimming and pruning of citrus plants	Both	Rs 300 – Rs 500 per day

Source: Field Study, 2016

**Note: Distance usually travelled was from the orchard to the nearby road. The unit of distance travelled varied from one household to the next. But the practice of identifying wage rate for porter work was based on number of fruits carried rather than the distance travelled.*

Wage rate has attracted many women and young men to get engaged in citrus production. Especially the wage rate is higher for digging holes or pits, and for most activities during and after citrus harvest as shown in Table 5.10. Wage rate for regular works such as carrying fertilizer, application of fertilizer, and weeding is similar to that of cereal crop production. These tasks are where women are mostly hired. Men are given piece rate for digging pits. Labourers who were interviewed while digging pits shared that in an average they could dig maximum of six to seven pits, thereby ensuring minimum of Rs 600 per day.

Male labourers worked from six or seven in the morning and worked until five or six in the evening while digging pits. Both men and women were observed digging pits using shovels, but the difference was that women were digging pits for their own orchard, while men were digging pits in others farm. As an exception, a large citrus farmer also shared that he had hired women labourers along with men labourers to dig the pits, but the difference in the pit size dug by men and women made him hire only men labourers during next plantation phase. The reasons provided by citrus farmers regarding why they hire men labourers over female labourers to dig pits was rationalized with the physical strength that men have, along with their ability to dig deeper holes without getting tired easily. Women, in their opinion get tired after digging out certain portion of the soil, which then results in half-done work, that needs to be completed by other men labourers. During ethnographic field work, which provided an opportunity to observe men labourers work, it was found that the work done by men labourers was also occasionally not satisfactory resulting in citrus farmer to reinstruct the male labourer to dig according to the precision deemed necessary. Interviews with male labourers also

suggested that their work were not always accepted at once. Often times they were asked to re-work on the same pit, by either digging deeper or increasing the breadth of the pit. Even women citrus farmers hired men labourers to dig pits with the same reason of men being more capable of digging pits than female, despite their own engagement in digging pits which they did not doubt of being inferior to that of pits dug by men. However, the work of digging pits, as a wage employee has been eventually reserved for men labourers and not for women laborers.

Women wage labourers predominance was found in carrying and applying manure-based fertilizer, and during the task of weeding. Women both at household and at wage labour market extensively conducted these two activities. These activities were not new agricultural tasks, and were considered as an extension of traditional agricultural work that did not need much supervision nor did it require substantial instruction. These works were considered as easy as it had been done over and over again by the farmers. Men too conducted these activities, but the intensity and measure of men's engagement in weeding and manure application was lower than that of women. *'Mal bokne, jharpat ukhalne, tyai ta ho ni kaam'* (the job is to carry manure and remove weeds), was an expression which was stated repeatedly by women labourers. The statement means that their works are to carry manure, and to weed out or remove unnecessary plants. Women labourers often used the term *'mela pat'* to denote agricultural work that included of regular agricultural tasks such as weeding, fertilizer application, and other cereal crop based activities. Both men and women also used the term, to suggest that they should provide their labour for exchange, but most of the times the term used by women labourers referred to agricultural task of weeding and fertilizer application. While men were seen doing these works, those men carrying manure and performing the task of weeding were mostly doing it at household level for their own farm. Daily wage rate for works under *'mela pat'* ranged from Rs 100 in some areas to Rs 250 in some area mostly those nearby the road and market. Increase in the wage rate for regular agricultural tasks also conducted in cereal crop production is due to the bargaining done by wage labourers who have demanded more wage for the same work if conducted for citrus production, and sometimes because of the demand for equal wage for both men and women. Maintenance of lower wage rate was however justified by the employers as well as employees as time difference between men and women. Men usually started their work early, from nine or ten in the morning, while women often

joined after finishing their household work, around twelve in the noon or one in the afternoon.

Another work that requires huge number of wage labourers includes of tasks during citrus harvest. Tasks during citrus harvest includes of picking the fruits, climbing the tree using either ladder, and most often the tree branches to pick the fruits, and carrying or loading the fruits in the vehicle or in a huge tarpaulin which is spread to keep the harvest before being counted and loaded in the vehicle. Sometimes scissors are used during harvest to pick the fruits without damaging the branches, but most often the fruits are picked with hands and kept in a bag that is hung over in a nearby branch. Either tarpaulin or straws are used to ensure a soft landing of the fruits that fall during harvest to minimize fruit loss. Fruit harvesting is done either at one go, or in two-installment, with large sized fruits being harvested at first, and then the remaining fruits are picked. Some citrus traders harvest citrus in two-installment in order to receive high price for large sized citrus and average price for the remaining citrus. Citrus harvesting procedures thus vary depending mostly upon the citrus trader and occasionally as per the citrus farmers. The role of trader during citrus harvest is essential, as they are also responsible for arranging labourers needed during harvest. Harvesting of citrus by small farmers having few citrus trees is different. They sell citrus without relying on citrus trader, but use their own household labour of man and women to pick and sell the citrus. They climb the tree and pick citrus with hand, and trade the citrus directly. The other citrus farmer sells the citrus to the trader who thus arranges labour to pick up citrus from many orchards at the same time, or from one large orchard at a time. Labour is arranged based on the demand for fruit in the market. Either through speculation by the traders or through direct demand made by the other traders, local traders usually facilitate picking, collecting, grading and packaging of citrus for market supply. These traders either arrange labour from within the village, nearby village or bring labourers from outside. During peak season when large number of citrus is to be picked, traders generally hire labourers for certain number of days. The same labourer is expected to work for the trader in order to finish the work using the same group of labourers for couple of days. Group formation is therefore essential to ensure efficient and effective work handling, with as less supervision as possible.

Picking up fruit from the tree does not seem like an exceptionally skilled task, with old men and women to young boys and girls being able to pick up *Junar* as and when needed. Plucking a fruit without having to climb up the ladder or more over the tree branches was a task conducted by everybody. However, citrus harvesting required more than picking up fruits that could be easily reached by hands. It required labourers to hang on to sturdy branches in order to pick fruits from on top of the tall trees. Given the differences in fruits to be picked, the type of labour employed varied with labourers being picked based on their weight and agility. Those who were considered heavy in weight were not employed for citrus harvesting, whether they were male or female. Since people with lightweight were preferred for picking the fruits, it was usually the young boys who were hired to perform the task of harvesting given their bodily structure. Boys or *keta-thitta* rather than *purush-adhabaisey* or men or middle-aged people were considered suitable for the task. Girls were also seen climbing up the tree during harvest, but most often it was male labourers who were grouped together. Group of male labourers consisted of boys living nearby the harvest areas as well as those belonging to far away villages, which the traders have mobilized. Girls on the other hand became part of the group only if they belonged to the same area where the harvest was being done. Only few exceptional girls were included as wage labourers during citrus harvest when harvesting was being done at large scale. Girls were considered to be unable to climb up the trees, hold on to the branches and pick the fruit from between the thorns that might hurt the worker. Citrus traders considered harvesting citrus as a difficult task as one could get injuries while picking the fruit, or in case of falling down from the trees. These works were thereby not considered suitable for female to perform as wage labourers.

Men citrus traders hence mobilized boys to harvest citrus, limiting women's entry into the citrus related wage employment opportunity. Local women labourers were however used when the scale of citrus harvest was not huge. Comparing men and women labourers, one citrus trader suggested that boys usually demand '*masu bhat'* or meat and rice as lunch or meat-based food as snack after the work. He stressed on boys being demanding and argumentative unlike women who usually accepted what was given. Boys seemed to feel more comfortable with citrus trader who is also a man, making boy labourers open up and speak what they feel like, sometimes seriously and at times just as a jest. Once the request or rather a demand or even a blunt statement was

made by the labourers, citrus traders ensured that their interest was fulfilled. Male labourers thus stayed back after work to enjoy snack along with local drink with citrus trader. Like the changes in wage rate, the changes in food provided during and after work related to citrus, especially during harvest, was brought about by young labourers who insisted on better pay and better food. Even though citrus traders expressed their willingness to hire women over men given their less demanding behavior, the trader considered hiring boys over girls as more reliable. The reliability of boys over girls was based on time availability of boys. Boys can come any time if asked for, they can walk or they can catch a vehicle more promptly than girls suggested one citrus trader. Girls responsibility to look after the household chore or *ghar-byawahar* more than that of boys, made it easier for boys to be mobile and available. Given the changes in women's body after childbirth, women are often not considered suitable enough to climb trees. Risking loss of branches of tree, which holds number of fruits was thus not an option. Hiring boys and keeping up with their demands was thus considered crucial to ensure labour availability during citrus harvest. Given the past experiences of mobilizing labour during citrus harvest, which had resulted in unavailability of enough labourers, citrus traders tend to be more considerate towards the demand of labourers during harvest. Making the labourers happy and wanting to come back again is one of the challenges that citrus traders face during large-scale harvest.

The reason for scarcity of labour during citrus harvest and post-harvest activities is due to the overlapping agricultural work for citrus and cereal crop production as shown in Figure 5.3. Phenology of the crops as grown in the study site shows that the period of harvest and post-harvest of citrus overlaps with harvest and post-harvest activities of paddy and millet. Hence, most household members are busy with cereal crop related activities, resulting in shortage of labour supply. Scarcity of labour during citrus harvest has thus resulted in local traders mobilizing outside labour. Labour scarcity, along with demand for high wage, and increased cash flow due to citrus, has therefore maintained high wage for citrus related activities following citrus harvest. Unlike, picking citrus which includes of mostly group of young boys either from the village or outside as labourers, other activities during harvest and post-harvest such as portering, application of Bordeaux paste, cutting, trimming and pruning, mobilizes men, women, boys and girls alike. Except for portering right after harvest, every household does not conduct activities such as application of Bordeaux paste, cutting, trimming and

pruning. These activities, although important for healthy growth of the tree, is carried out only by few households.

Figure 5. 1: Crop Calendar of Top Eight Most Planted Crops

Paddy	H					L	P	P	M	M		H
Maize			L	P			H	H	PH	PH		
Millet	PH					L	P	M	M		H	PH
Oilseed mustard	M	M	H	H	PH	PH			P			
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Pulses (lentil)			H							P	P	
Soybean					P	P	P		H	H	H	
Potato			P		H					P		H
Citrus												
Old	H	PH	M	PH	M	M	M	M	M	M	M	H	H	H
New	P	L	L	L			L	L	P			L	L	L

Land preparation L | Plantation P | Regular monitoring M | Harvest H | Post-harvest PH

Source: Field Study, 2016/17

Portering the citrus in *doko* was an activity that had women predominance. Besides women, children were seen carrying 100 to 200 pieces of citrus in one travel. Women or men labourers on the other hand carried 500 pieces of citrus in one travel. Children earned Rs. 10 or Rs. 20 per *doko* carried, while women or men earned Rs. 50 per *doko*. Unlike picking up the fruits, which ensured Rs 500 per day of labour, labourers carrying citrus, earned as per their carrying capacity. Regardless of being a man, woman or children, the system of piece-rate discriminated the labourers based on their performance regardless of their time contribution in performing the task. The rate of payment also differed depending upon the distance of travel from each orchard to the destination where the citrus should be unloaded. This task was carried out by locals,

without having to mobilize outside labourers. Children's labour was significantly used in these two activities of picking and carrying the citrus. Traders usually did not risk hiring young children for picking, but they were allowed to enter the labour market in case of carrying the citrus and unloading it in the destination.

Another category of wage labourer included of a much more skilled labour type which comprised of citrus grafter and citrus facilitator who assisted in pruning, cutting, and in preparation and application of Bordeaux paste. Unlike other work in citrus that could be conducted after providing careful instruction to the labourers, tasks conducted by citrus grafter and citrus facilitator includes of an expertise which can be honed only after theoretical knowledge and constant practice in the field. Men, who have been trained by citrus nursery owner and DADO, exclusively hold both of these professions. Twelve men had been trained to work as citrus facilitator. These men were provided training on each activity to be conducted on a citrus orchard, as part of a one year-round training. These men are called for by citrus farmers or citrus nursery owners if they need a professional wage labourer who could provide skilled labour of planting, grafting the citrus, or in pruning, cutting, and in preparation and application of Bordeaux paste. Depending upon the size of the orchard, maximum per day rate of citrus facilitator is Rs 800 to Rs 1000. The same work of pruning, cutting, and application of Bordeaux paste if conducted by wage labourers under the supervision of large citrus farmers range from Rs 300 to Rs 500. These tasks are however, often conducted by the household members themselves, with only few large-scale citrus farmers hiring wage labourers to perform these tasks. Although the rate of payment of citrus facilitator is higher, local wage labourers usually supplement the demand for his work, especially because large citrus farmers (mostly men) themselves are well trained to perform such activities. Only citrus farming households in which none of the household member has been provided with training of pruning, cutting, and preparation/application of Bordeaux paste hire citrus facilitator. Other households, in which either/or member of household have been trained and are confident in conducting these activities, typically hire local wage labourers rather than citrus facilitator. Given the sum of daily wage for performing these tasks, citrus farmers usually don't have to go far away to find labourers. The opportunity to earn Rs. 300 to Rs 500 in citrus related works have recently attracted many households, especially women and young boys, to work as wage labourers who earlier provided their labour only in terms of household labour and exchange labour. Citrus facilitators are

also mobilized to collect sample boxes filled with citrus insect pest in each VDC. This activity is conducted bi-monthly by citrus facilitator, and the collected boxes are delivered to the agriculture section office in Khaniyakharka, where the facilitators count the number of different insects. These men have also been trained to identify different type of insects or fruit flies in sweet orange. This effort was especially made by the DADO, Government of Nepal after Nepal-China agreement to export Citrus fruit from Nepal in 2012. Farmers have started to use pheromone traps with chemical measures to attract fruit flies in order to trap them, and started practicing field sanitation as a result of time-to-time surveillance, monitoring and management of fruit fly by DADO. Few initiatives by large citrus farmers (male) and nursery owners (male) to understand citrus related diseases and citrus pest were also observed.

5.4 Conclusion

This chapter presents women's slightly higher role in agriculture based on LFPR, and highlights gender-based division of labour in different activities in a mixed-farming system. Female to male ratio in labour force participation in four domains of agriculture shows more involvement of women in all three types of labour arrangement, namely household labour, exchange labour and wage labour. Female to male LFPR in household labour shows female labour domination in vegetable followed by livestock, cereal, and citrus, with significantly higher female to male LFPR in exchange labour as well as in hired labour. Exchange labour arrangement practice is a traditional form of labour pooling to ease out labour shortage during plantation and harvesting of cereal crop. Given the higher ratio of female involvement in exchange labour as well as in hired labour for cereal crop, this chapter presents women's substantial role in cereal production. Women's role in cereal crop is mainly that of *ropar* or plantation worker. Except for the work of *ropar,* which is socio-culturally defined as a woman's work, every other work conducted by women is socio-culturally gender neutral. Men's role in cereal crop is socio-culturally bounded by the works conducted by *hali, lathey, and baosey.* These culturally defined works segregate and restrict men and women to perform such tasks as exchange labourers and as hired labourers. However, at household level, these works are mostly flexible, with men performing women's task and women performing men's task, except for ploughing with the help of oxen, which is strictly considered as a man's work.

Unlike few strictly defined work for man and woman in cereal crop production, other agricultural work are culturally gender neutral. It is within this flexibility of work, that this chapter has portrayed how varied degrees of market orientation within a productivist/non-productivist spectrum of multi-functional agriculture has changed household labour, exchange labour and wage labour relationship. Three categories of households has been presented with each having a distinct feature — Category 1 households: no exchange labour practice with high citrus market orientation; Category 2 households: use of exchange labour with moderate to high citrus market orientation; Category 3: use of exchange labour and work as wage labourer with low to moderate citrus market orientation. Using these three categories of households, this chapter has highlighted how gender-based division of labour in agriculture changes with households' focus on productivism and non-productivism in a mixed-farming system. Despite the limited market orientation of cereal, cereal is still produced by many households with the objective of increasing the food productivity for home consumption. Thus, many households practice exchange labour as a result of their focus towards enhancing subsistence production. Only a small proportion of households were found to be decreasing subsistence-based food productivity, as a result, these households had stopped performing exchange labour. There were however many households under Category 2, who felt bounded to reciprocate labour due to shortage of wage labour. As a result, many such households had started to decrease the land for the cultivation of cereal crop through *thekka and/*or *adhiya*.

Women's role in different types of agricultural work, either at household or wage labour market, or in cereal or citrus crop production, showed higher concentration of women in manure application, carrying fertilizer, regular mulching and weeding. These activities were not new agricultural tasks, and were considered as an extension of traditional agricultural work that did not need much supervision nor did it require substantial instruction. Wage rate for these activities, either conducted in cereal or citrus production, was less than other agricultural work. Women were however entering labour market in citrus crop production, which required of news skills and techniques. Besides the regular work of weeding, and application of fertilizer, women were engaged in post-harvest of citrus. Women were mostly engaged in cleaning the trunk and applying Bordeaux paste, and cutting, trimming and pruning the citrus tree. Most of these women

wage labourers were new to the wage market. Attracted by the daily wage in these activities, those women who earlier worked only at household level and as exchange labourer, had started to work as wage labourers. However, many wage labourers who had been working as wage earners in cereal crop have not been able to benefit from the opportunity to earn high wage as the timing for harvest and post-harvest of paddy and millet coincides with that of harvest and post-harvest activity of citrus.

CHAPTER SIX

6. WOMEN'S EMPOWERMENT IN MULTI-FUNCTIONAL AGRICULTURE

This chapter begins by presenting broader rural employment opportunities available in the study site, along with diverse occupational opportunities available within the agricultural sector. It then highlights what men and women have been able to choose from various opportunities available to them, creating a gendered pattern of involvement in different employment opportunities. The chapter then focuses on four domains of agricultural production, and underlines 'who has more say' in each domain of production within the household by presenting men and women participation in decision-making. Intra-household decision-making regarding each production domain has been comprehended by considering the value of each crop/livestock within a broader agricultural space in the study site. Hence, gender hierarchy in decision-making of four domains of agricultural production is further analyzed to understand women's subordination in the citrus domain although there are an increased number of women in decision-making positions in other domains of production. Female to male ratio of decision-making in four domains of agricultural production provides a glimpse on how women are positioned within the decision-making of cereal, vegetable, citrus and livestock production and management. The chapter then analyses other resources such as land, labour, income, social networks and human mobility that are linked with production of these four domains in a mixed-farming system.

Using the three-interrelated dimensions of empowerment (Kabeer, 2001), each resource has been assessed to understand how women have or have not been able to use or have control over these resources by challenging the existing gender norms that subordinate women over men. Cases of both empowerment as well as disempowerment have been highlighted to present women's experience of challenging the gender norm, and often compliance to these norms through the process of decision-making for each selected resource. It also shows how values and choices of women are influenced by gendered structures as well as living conditions, as not every choice or every outcome have gender implications i.e. situation suggesting power relations that influences

women's behavior, action, motives in certain way under patriarchal norms. Thus, the chapter also presents what Kabeer (2001) suggested as the condition of choice — inequality versus differences in choices. Finally, the conditions that hinder or promote women's integration into food crop and cash crop is explored by analyzing deeply rooted gender-based inequalities in an agrarian society.

6.1 Expansion of Rural Employment Opportunities

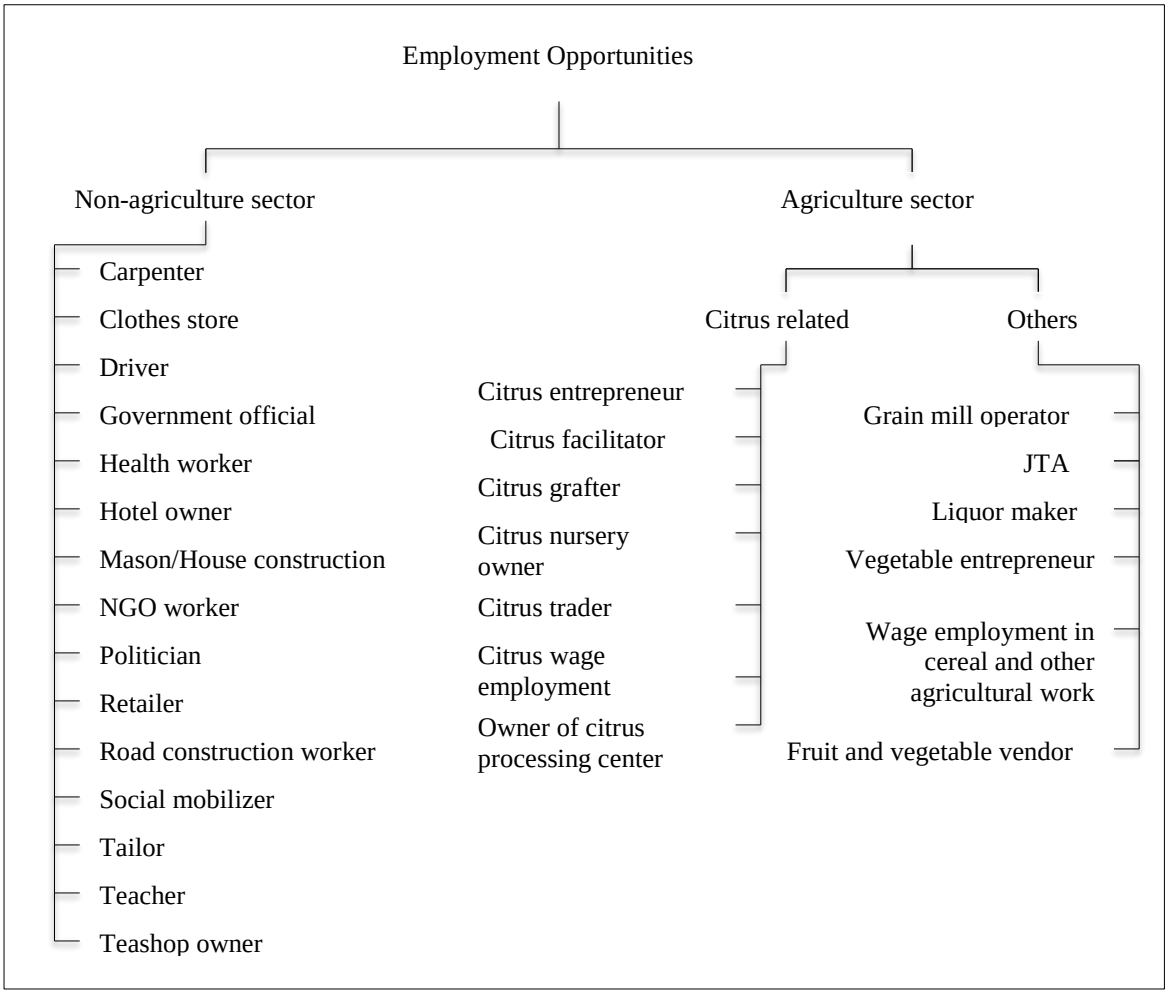
> Everybody is talking about *Bikas* these days. Everything is *Bikas*. This road is a *Bikas.* This fertiliser is a *Bikas.* There are new types of seed, which is a *Bikas.* They say cooperatives are *Bikas*. Now these *Junar* are also *Bikas.* Market creation is *Bikas.* Everything new is *Bikas*. There is *Bikas* everywhere. (Laughs) When we were young there was no *Bikas,* we had to do everything by ourselves. We had to work more than what we do today, but we still did not get enough to eat. Now, we have rice, vegetables, and these *Junar*. We can buy food in packets. We can say [aaaaaa] I don't want to cook today, and we can have *chaw chaw* [Packed noodles]. Life has become easy. But these young girls have not stopped complaining. They should have seen our life, and they would think how good their life is (Sixty-eight years old woman from Tinkanya).

> There was a time when we used to work during agricultural peak season, and after the work was complete, we would go to Calcutta, sometimes Darjeeling to work. We would earn *dui-char paisa* [a metaphor used to suggest small earning, rather than actual sum of money] and return back to the village either during harvest or next plantation. […] When we were young there wasn't any way of earning in the village. You produce food, eat, and sometimes take loan either in cash to buy more food, or take paddy from landlords. Your life was a struggle between managing to eat and working to produce enough food to feed the family (Sixty-two years old man from Baseshwor).

Both stories highlight changes in rural space as a determining factor shaping one's lives, by providing a comparison between the past and the present conditions of life. One such change has been regarding the way men and women are now provided with the opportunities to diversify their livelihood options and employment

opportunities. Except for narratives from very few farmers belonging to Brahmin and Chhetri caste, whose father or grandfather worked as *mukhiya* or chief of the village, or who served in government as a military officer, everybody else shared the story of hunger, food insecurity and struggle to meet daily food needs. Number of people migrated to India, Kathmandu or Terai on a seasonal basis, or for number of years to earn cash, only to return back and buy more land to start paddy, millet and maize cultivation after many years of struggle in non-farm sector. Unavailability of wage employment in rural space, and demand for men in military service was the main reason for migration of many families, and mostly of men member of the family. These men usually returned back to their village during agricultural peak season and left their families behind when agricultural work was lean. The context of rural employment has however changed in the past few decades.

Figure 6. 1: Employment Opportunities Available in the Study Site



Source: Field Study, 2016

As shown in Figure 6.1, at present there are many employment opportunities in both agricultural and non-agricultural sector, with creation of new forms of employment especially as a result of citrus market development. More than thirty percent of the household members living in rural area have multiple occupations, including of citrus related occupation. Although multiple opportunities for livelihood diversification exist, men and women have not been able to seize all the opportunities equally. Female represent only one-fourth of the total multiple occupation category. Stark differences in participation of women can be found in both agricultural and non-agricultural occupation categories. Men's occupational categories are more diverse than that of women, with men holding many non-farm occupations, as well as most agricultural employment categories including of grain-feed mill operator, and most citrus related occupations.

6.1.1 Citrus Entrepreneur

Citrus entrepreneur mainly includes of large-scale citrus farmers, nursery owners, and citrus traders. Usually both nursery owners and citrus traders are also large-scale citrus farmers. Thus, same household, or more so, same individual from the household is engaged in more than one citrus related occupation. Nevertheless, many large citrus farmers have only one citrus occupation, i.e. citrus farming. These large citrus farmers are also the owners of vehicles that operate in the study site. Road connectivity has resulted in large-scale citrus farmers and/or citrus nursery owners to invest in both trading and transportation. Trading and transportation until the development of roads was mainly handled by i) outside traders (male) who would normally come from Terai districts, ii) the household members (male or/and female) engaged in citrus farming would themselves trade citrus by hiring porters (male or/and female) to carry the fruits to the market; and iii) selling the fruit at farm gate price to group of porters (male or/and female), who would themselves carry citrus in *doko* or bamboo basket to the market. Group of porters living nearby the village would normally invest in citrus, and the same group would sell the commodity in the market, either by hiring more labourers or by pooling family labour. Trading and transportation at present is however not feasible for these porters as investment in vehicle for transportation of goods, and time investment in

building rapport with the citrus market clientele from Kathmandu, and Terai districts is much higher a risk. Given such heavy investment, citrus trading and investment in vehicle have become an extension of large-scale citrus farmers who are capable of capital and time investment. Large citrus farmers, either solely or jointly, own every vehicle operated in the study site, notwithstanding the ones closer to the highway. Vehicles that operate in the study sites are then used to transport citrus during citrus harvest season, starting as early as October to late February. These vehicles are used for commuting on a day-to-day basis for local villagers, and used as citrus transportation by local citrus traders. Besides the usual operation of vehicles in the study site, the number of vehicles escalates during citrus harvest season for *dhuwani* or transportation of citrus to the market. Driving profession in the study site is exclusively reserved for men, since driving in rural roads require long and lone travel in a difficult, slippery and bumpy road that need strength to control the grip of the wheel. Local transportation investors as well as outside vehicle operators show their reluctance to hire women drivers. Hiring a woman local driver is however not an option also because there aren't any women who have openly voiced their interest in becoming a driver. Neither is there a demand for women driver, which has resulted in men accumulating the skill of driving, while women don't see a possibility of livelihood diversification through becoming a local driver. Any inquiry regarding women drivers is easily mocked, with some suggesting that it's not easy for women to drive in rural roads. 'It's not Kathmandu city, not your city, where women can easily drive. These are tough roads' expressed one of the driver. Like the drivers, the owners of these vehicles are always men, and so are the local citrus traders. Unlike providing vehicles only for transportation of citrus, or for *dhuwani*, as a transportation owner, citrus trading requires more diligence.

On becoming a citrus trader, one local citrus trader from Tinkanya shared his experience as follows:

> Trading is not an easy task. It requires money, effort and time. I have been trading citrus since past eight to ten years. Earlier it was in small scale, but now I take around works of ten lakhs or more. Me and one brother from the village down below near Tallo Kubindey work together. He arranges local citrus farmers who are ready to sell their citrus to us, and I do the same. He does it in his own village and nearby localities. I do it in and around this area. Trading requires

> gaining trust from the people, from the village and also from those who buy citrus from us. Money is usually not paid on time, so there is lot of play in regard to holding and releasing money. Usually we have to give the money to the farmers immediately but we don't get the money from the traders from Kathmandu on time. They release the money slowly. But the amount for *baina* [small amount of advance payment made as an informal contract] is provided by the outside trader. So we can secure farmers and quantity of citrus that the trader demands. Trust is therefore very important.

The local citrus trader further added that they usually stick with same large citrus trader, although they do keep an open eye towards potential partners. Pointing towards the cost and benefit of sticking and shifting from one trader to the other, the local citrus trader further added:

> There will be conflict with the trader at times regarding the amount of money. So our work also includes of finding new traders and dealing with them. We have to do this work prior to citrus harvest, so that we can get the amount for *baina* from the trader and deal with farmers before citrus harvest season. But again, it's also safe to stick to same traders who are reliable and trustworthy. It's very tricky, because everybody wants more profit, and at the same time we don't want to risk too much.

Trading requires heavy capital investment, along with time and effort to mobilize citrus farmers. While the outside trader provides *baina* (booking fee) and *jyala* (wage) for labourers, local traders have to roll out their own money at times. Conflict and bargaining among and between the traders is a part and parcel of trading business. As asserted by one trader:

> It's not always a win-win situation. Sometimes our party wins and another loses. And at times another party wins and we lose. If the market is not favorable then both may lose. Thankfully, the market is going in a right direction, so we don't have to lose much. Its mostly about who earns more — they or us. Only in case of damaged and destroyed fruit, we will have to pay from our own pocket. Otherwise

if the *Saamaan* (referring to citrus as goods) are delivered in proper condition then we get the right price (Male citrus trader from Baseshwor).

Local traders always sell citrus based on its weight or unit of mass using kilogram (kg). But they buy citrus from local citrus farmers through the means of weight, per piece rate, and sometimes through *hundi* (preharvest contract). *Hundi* is a system of selling the entire harvest from the orchard before the actual harvest. Every piece of fruit harvested, regardless of its weight or quantity, is sold prior to harvest by speculating the market price of the commodity and estimated productivity for the season from a given orchard. Local traders thus play with these three means of buying citrus fruits from the farmers, which either increases their profit or results in loss, as they have to sell the fruit based on the system of weight to the outside trader. Therefore, traders are also not a homogenous group, as they tend to perform as traders in varying ways. Some traders are well experienced, and some are relatively new to the trading business. Some traders supply the goods to Sindhuli, Kathmandu and Terai districts, while some focus only on markets in Sindhuli, Kathmandu or Terai districts. Unlike outside traders who also invest in storage, these local traders normally pick up the fruits and load it in the vehicle, which is transported to the outside traders and wholesalers on the same day or next day without having to store it for number of days. Citrus traders vary in terms of their scale of work, area coverage and capital venture. However, whether small or large, all citrus traders were male. Small citrus traders were usually young male in their late twenties and thirties, while large-scale citrus traders were above forty years of age. Young male traders began working as a trader under or with large citrus traders, either locals or non-locals. Local citrus traders with whom the young traders start working are mostly relatives. Words used to describe their relationship included of *'kaka-bhatij', 'bua-chora-', 'dai-bhai',* meaning uncle-nephew, father-son, elder-younger brothers, respectively. Often times these relationships were not formed on a first cousin basis, but expanded through same ancestry. Working with experienced traders provides an opportunity to learn for young traders, while young traders are motivated and encouraged to become a trader by experienced traders in order to get hold of farmers closely associated with the young trader. Less experienced trader usually deal with the farmers and mobilize labourers during harvest, whereas experienced trader deal with outside trader or wholesaler regarding quantity, quality, timing and amount of payment.

The role of citrus nursery owner during earlier days was of putting seedbeds out of *biju* seeds and selling the sapling once it reached one foot. Eventually, citrus nursery owners were trained to graft *Junar* with trifoliate orange rootstock and other varieties of citrus. The technique of grafting resulted in cultivation of early fruit-producing trees unlike *biju* trees. Given the early return from grafted citrus trees, farmers started getting more dependent on nursery grown grafted saplings than *biju* saplings which many farmers grew by themselves by putting seedbeds. The role of nursery is therefore to provide healthy saplings that grow in size quickly, and is tolerant to citrus related diseases. In order to produce citrus that is not affected by disease, some citrus nursery owners have also started to construct screen houses that are insect proof. In total the study area has nine registered citrus nurseries, and few new nurseries, which are not registered. Old citrus nurseries belong to early generation, or the first generation of male citrus producers. The sons have inherited some of these nurseries, while some nurseries are still in operation under the older generation of citrus producers. The work of grafting and taking care of citrus saplings is however outsourced by some nurseries. Only one male salaried employee was found to be working in one of the nursery in the entire study area. The same male employee is hired along with another male labourer to perform tasks of grafting by other nursery owners as well. These two young men also own a nursery of their own and in the mean time work for other nursery owners during grafting season.

As a salaried employee, citrus grafters earn Rs. 8000 per month for working from 11 am to 5 pm. As a wage earner, these two boys earn Rs. 3 per grafted sapling. These boys are capable of grafting maximum of 600 saplings per day, which means that their daily earning could reach up to Rs 1800. Like these boys, there are other young males who have invested in developing a nursery. However, there aren't any women nursery owners, either young or old. This does not mean that women don't have any role in citrus nursery. Although men were more likely than women to perform most tasks in nursery, women were found doing almost every work that their husband did in citrus nursery at household level. However, except for two cases where the women provided their input in grafting and pruning, women's labour input in nursery was limited to weeding, mulching, clearing the waste, and holding the pipe used for irrigation. As shared by one of the wives of citrus nursery owner, her involvement in nursery was out of necessity:

> I do all the work that he does. I work alongside him, so I can do every task that is assigned to me. He has taught me the skill of grafting, cutting, pruning, and selection of rootstocks. I can work without him, but so far, I have always worked with him when he is around. We make sure that the work is completed once we start off. In case he has to leave home for some urgent work then we stop the work and continue it together later. […] I did not work in nursery before. There were enough labourers even two years back. But now it's difficult to find others who can come and work for us. No labourers, what can we do! That's why I learnt to graft. Now I assist him, otherwise he would have had to do the work all alone (Wife of nursery owner from Ratanchura).

Grafting of *Junar* with other citrus rootstock is considered as the most difficult and highly skilled task among all the activities under citrus cultivation. Precisely cutting of rootstocks and scions (budsticks), holding the two parts together, and carefully joining the scion on the rootstock using a plastic wrap is a task that needs meticulous observation skill, ability to firmly hold, and carefully yet quickly wrap the plastic without damaging either of the pieces of the plant. A skilled grafter can graft plants without resulting in much wastage during and after the plant has been grafted and with a high rate of success. Japanese first introduced grafting technique in Nepal during JICA initiated project on horticulture development. This technique was taught to early nursery owners who were all men, and through these old nursery owners, the technique was passed down to their children [sons], and some labourers [men], and more recently to nursery owners wife as a result of shortage of labour. The trend of wage labourers being trained to graft citrus was an effort made by the citrus nursery owners to share their work burden. Some new nursery owners learned to graft citrus by observing others perform the task of grafting and eventually mastered over the skill after months of practice. Given that men have mostly mastered over the skill of grafting, decision-making under citrus nursery is exclusively limited to men. There is absolute presence of men as nursery owners, citrus traders, and transportation owners. Thus, women's space within citrus market is limited to that of being either a large-scale citrus farmer or an aspiring citrus farmer capable of household decision-making regarding citrus production and trade.

Large-scale citrus farmers who don't consider themselves as local citrus traders usually sell citrus from their orchard to outside traders without having to rely on other local traders. Unlike local traders who buy citrus from small and medium farmers and sell the harvest to other traders, these large citrus farmers sell their own harvest but do not collect production of other farmers. These farmers have sufficient amount of citrus production, which results in traders coming to their orchard. These farmers nevertheless deal with both local and outside traders. In contrast to farmers having small citrus orchard, large citrus farmers can independently sell their product without having to rely on local traders. They can also hire a vehicle solely for the purpose of taking their citrus to the market, which is not possible for small farmers. Small citrus farmers who reside nearby the highway and market are also comparatively more independent as they can choose the buyers. These small citrus farmers sometimes turn into hawkers along roadside, and at times sell citrus to vegetable and fruit vendors. Occasionally they also sell citrus to tourists who come by their orchard while traveling through BP highway.

A paradoxical situation exists in regard to these small farmers, where they sell citrus by themselves to maximize their earning, but at the same time they sell it off when the price of citrus is not high enough. With price of citrus increasing every year, farmers have been able to sell citrus for maximum of Rs. 15 per piece in 2017. But not all farmers were able to get that price, with some selling citrus for as less as Rs. 5 per piece. Volatility of price of citrus is due to its seasonality, size and quality of the fruit, and supply and demand in the market. Even those farmers who had sold citrus for Rs. 5 per piece, expressed satisfaction for getting the price, which was not possible a year back. Small farmers consider selling the citrus before it is ripe, especially during *Dashain* and *Tihar* as appropriate, as they can meet immediate cash need for festive celebration. Given that they have less production, they prefer to sell it before the harvest time, in order to ensure that none of the *daana*, or pieces of citrus will be wasted due to citrus disease that causes citrus to fall prematurely. Rather than holding on to the price increase to sell the citrus that they have, these small farmers sell citrus out of festive need, and also out of their calculated benefit and risk caused by citrus disease and speculation of market price during festive season.

Like small farmers, other citrus farmers also sell some of their citrus prior to citrus harvest, with the same reasons of easing cash constraint prior to festival, and due

to higher risk of holding citrus with the speculation of price increase which may or may not come true. Given these two reasons, it's always the large citrus farmers who keep their harvest until the end of the season. Large citrus farmers, almost never sell citrus prematurely, while small and medium sized farmers, almost never keep citrus until the end of the season. With these two spectrums of choices made by citrus farmers, same large citrus farmer who kept citrus until the end of the season during one harvest may choose to sell citrus a bit earlier during the next harvest. Similar choices are made by small farmers who may choose to sell citrus a bit later, while they might have been the ones to sell citrus early on during previous harvest. Farmers may also choose to sell parcel of their harvest or all harvest at once. Besides price speculation, the reason for the choice made by the farmers, especially large citrus farmers also include of taking care of citrus trees.

> I did not keep citrus until the end of the harvest this year. Last year, I was the one to sell citrus in the end. Nobody had citrus in their orchard anymore. Only my orchard was orange [suggesting the coulour of the fruit, rather than referring to orange variety of citrus] then. Those *Junar* were this big [gesture used to show the size of citrus using one's hand]. 'A' class *Junar*. [Chuckles]. I received Rs 15 per piece. But this time I did not keep citrus for long. It's not good for the tree to hold on to fruits for a very long time. If the citrus stays in the tree for long, then the next harvest will be affected. It has to be left free, without any burden for next harvest. We have to think of long term as well and not of immediate profit all the time. This time I sold the citrus once I received a good price. I sold it for Rs 12 per piece, around Rs 40 per kg. In an average the profit is anyway the same. If fruits are kept longer, then people come and eat it. Some fall. Some are eaten by birds and monkeys. So I sold it earlier when I got a good price. (Large male citrus farmer cum trader from Baseshwor)

Citrus harvest was the only activity in which both men and women, especially from all generation, young and old, showed their presence. Referring to the citrus harvest period, a large [male] farmer cum trader suggested similarities between citrus harvest and *ropai* (referring to paddy transplantation). Like *ropai*, which is one of the most awaited agricultural works, farmers in citrus producing areas gather and enjoy citrus harvest:

> For few continuous days during citrus harvest, the village is vibrant with vehicles coming and going. People moving around, some picking *Junar* and *Suntala*, some loading it, some carrying it. There will be children counting the number of fruits being picked. It's a fun-filled event here in this village. Everyone is excited. Its like *ropai*, with everyone working at the same time. (Male citrus farmer cum trader)

Similar to male citrus trader and large male citrus farmers, female citrus farmers were also actively engaged during citrus harvest. Female citrus farmers were equally concerned about whether the citrus tree was properly handled while picking the fruits from the tree. Their constant observation and monitoring was necessary to ensure that the tree branches were not ruined during citrus harvest. However, it was the responsibility of the trader to gather labourers, usually those who are not heavily built, to pick the fruit from the trees. Since citrus harvest for large farmers included of selling the citrus to the trader without having to worry about managing the labourers necessary, or ensuring the provision of food for citrus labourers (in many cases), citrus owners work was limited to providing supervisory role needed for both the trader and the labourers. Moreover, since the experience of citrus harvest was considered a fun-filled event where almost every individual from the household participated, it was both women and men of the household who got engaged during citrus harvest.

Only in the absence of male member in the household, women solely got involved in citrus harvest. Otherwise, the role of women during citrus harvest was more or less equal to that of men, with the exception of only few households where women directly engaged with citrus trader as well as received the income from citrus harvest. In some households, women's distinct role during citrus harvest, was also of preparing food for the labourers, especially where the citrus trader was a household member or a close relative. Men's involvement during citrus harvest increased with the number of fruiting citrus trees. Men's active involvement during citrus harvest meant that the income from selling the citrus was to be kept as men's income. Women's active role during citrus harvest, more often resulted in women keeping the income from citrus. In households that had male citrus traders and nursery owners, it was always men who took

responsibility of citrus harvest and other activities associated with citrus, including of arranging wage labourers for citrus related work.

6.2 Gender based Decision-making in Multi-functional Agriculture

Intra-household decision-making has often been operationalized as who has more say in relation to the resource in question. The resources in question for the analysis in this section are the four domains of agricultural production – cereal, citrus, livestock and vegetables. Table 6.1 presents the percentage of participation of male decision-makers against total decision-makers for each production domain, and percentage of participation of female decision-makers against total decision-makers for each domain of production. The female to male LFPR in decision-making is higher for vegetables, followed by cereal, and livestock, with least say in decision-making of female in citrus production. The ratio of female to male labour participation rate in citrus related decision-making is notably low with the value of 69.35.

According to Table 6.2, the female to male LFPR in decision-making in four-production domain by household categories shows stark difference in the decision-making of citrus among households under Category 1. The involvement of men in decision-making of other production domain and citrus shows that decision-making in citrus has become male dominant. Women's involvement in decision-making is nevertheless substantial in other domains of production.

Table 6. 1:Decision-making in Four-Production Domain of Agriculture

Production / Sex	In Percentage		Female to Male Ratio
	Male	Female	
i. Cereal	49.38	50.61	102.50
ii. Vegetables	42.20	57.79	136.95
iii. Livestock	49.80	50.19	100.80
iv. Citrus Fruits	59.04	40.95	69.35

Source: Field Survey, 2015/16

Table 6. 2: Female to Male Ratio in Decision-making by Household Category

Production	Household Category 1	Household Category 2	Household Category 3
i. Cereal	111.76	100.00	104.00
ii. Vegetables	150.00	125.80	168.75
iii. Livestock	116.66	95.12	108.00
iv. Citrus fruits	52.63	66.67	88.89

Source: Field Survey, 2015/16

6.3 Inequality versus Difference in 'Resource Use' Choices

Measurable aspect of decision-making operationalized 'who has more say' as the basis on which gender-based differences in decision-making could be analyzed. However, such operationalization leaves many detailed information regarding how and why men or women become the decision-makers within each production domain. What made either men or women to participate in decision-making of each resource? Why is men's participation higher in decision-making of citrus? Why is women's participation higher in decision-making of cereal, vegetable and livestock? These questions need further exploration to understand the nuances behind differential participation of men and women in four-production domain of agriculture. Given that the study has disaggregated agricultural sector into four-production domain, each domain presents an availability of choices within agriculture. For each crop and livestock, the study participants have the ability to choose the degree of market-orientation, choose between productive and non-productive sphere, choose the scale of production, and choose between labour arrangements. Such choices at household level can sometimes be a result of resource pool available within the household, which may result in differences in their ability to choose. Thus, the differences in choices may not always be a result of gender. Both men and women from many households preferred food crop over citrus crop due to the condition of food insecurity, where gender-based inequality in decision-making regarding the resource use choice was not evident in every case. Rather than the differences in the resource choice, the process in which decisions are made is where the role of male and female, and their status within the decision-making has been presented. The process of decision-making thus highlights gender hierarchy. The differences in choices at intra-household level, nevertheless, present a situation where the household has more or less similar resource pool. Ideally, the men and the women within the

household have similar resources available to them, however as experienced by men and women of the same household, there is a difference in resource access, use and control by gender. Despite availability of choices, differences in participation and decision-making regarding each available resource presents a case of gender inequality.

In order to understand how and why men and women have been able to choose between four alternatives available within agriculture, the study has further assessed other resources. Using the three inter-related dimensions of empowerment, the study has analyzed five resources that were considered crucial for the analysis of women's empowerment in agriculture in the study site. The five other resources includes of land, labour, income, social network and human mobility. These resources have been presented as the conditions under which choices between four domains of production is made. The process of choosing to participate and make decisions between available alternatives shows how women exercise their agency. Behaviors that show decision-making and non-decision-making in each production domain in relation to other resources thus constitute women's agency. Finally, women's engagement either through labour input or decision-making in cereal, citrus, vegetable and livestock are considered as women's functioning achievements. Women's functioning achievements in these four domains of production presents a case in which women have either been able to make strategic life choices, or comply to the existing social arrangement which maintain the status quo between men and women.

6.3.1 Land

Land ownership or land titling is an important factor in agriculture. Legal transfer of land title is usually hereditary from father to son. Thus, land title in the study site is mostly in the name of male member of the family as part of land inheritance arrangement. However, in practice, although families considered themselves as a separate household, land title was still found to be in the name of father in many cases. Hence, neither of the household member had legal land ownership of parcel of lands that were being used. In some cases, the land was in the name of husband who had migrated, but wives were able to use the land that was in the name of their husband's. In some cases, land was also in the name of mother and/or wives. Few cases of women owning the land, with self-initiation to buy the land were also found. Except for buying and

selling of land, and access to credit due to land ownership, women and men who did not have legal land ownership were able to utilize the available land to produce what they valued. This section thus focuses on the use of land that is already accessible to men and women, despite land titling in the name of other (mostly senior male) member of the family. So how do women and men translate access to land (either with land title or without) into production of cereal, vegetables, citrus and livestock as valued achievements?

Issues regarding land use from women's experience in the study site:

> These lands here belong to us. It's my husband's land but paper work hasn't been done yet. The land has been distributed among brothers. Now we can use it the way we want. Although we had been using these lands [*bhogchalan*] for some time, proper distribution of land among the brothers was not done. Now, some wanted to plant citrus, some still wanted to focus on cereal. So, when there was a debate in the house, our father-in-law decided to properly distribute the land so that we can use it the way we want to (Bidhya Magar2).

> We have *Junar* and *Suntala* in our *bari*. Our father-in-law planted those fruits. He still takes care of these fruits. I don't know anything about *Junar Suntala*. In our *maita* (women's paternal home or birth home), we didn't have these fruits, so I am unaware of how to take care of them. Before, my husband used to look after these fruits. He used to work with his father. But now since he is not in the village, father-in-law takes care of all the *Junar*. […] He also takes the income from *Junar* sale. My husband used to argue with his father when he was here to give some share out of *Junar* sale since it's in our land. But now I don't even provide labour, so how can I ask money from him? (Tulasa Budhathoki).

> Those trees in our land belong to us, some belongs to our mother-in-law, and some of them belong to his brother. Only whatever cereal has been produced from the land belongs to us. Otherwise, those trees have been divided among different

[2] Please note that pseudonym has been used to respect the privacy of the study participants. However, names have been used to differentiate women and their experiences. Detailed characteristics of women and their household are provided in Appendices.

> family members. Our mother-in-law and father-in-law planted those trees; unfortunately, they planted more trees in our land. Now, maize and millet from these lands are less than that of his brothers. But we have to share the citrus trees. I don't know why my husband did not say anything when land was divided among brothers (Suntali Ale Magar).

Despite formal land titling, inheritance of land through patrilineal land distribution is a factor influencing land use. Although men and women had access to use of land prior to land distribution, the debate as presented in the case of Bidhya, suggests that households did not have control over the way they wanted to use the land, i.e. to produce either citrus or cereal crop. Formal land distribution (not necessarily formal land titling) thus provided more control over land use. Similar to land, citrus trees in the study site was also inherited. Thus, even when one had access and control over the land, the same household did not have complete control over the crop produced in that land. While cereal crops were completely under the control of household member, citrus crops were distributed among family members through patrilineal system if the citrus was already planted before land distribution. Suntali, who had felt like her family was in disadvantage as a result of equal distribution of citrus crop, shared her experience:

> I thought to myself, why should I be bad. It's ok even if we don't have enough land for cereal. […] My husband should have said something, but he did not. So why should I? It was about their family property. When everyone was discussing about which land should be theirs', I couldn't abruptly speak (Suntali Ale Magar).

Like Suntali, Tulasa also remained silent despite her dissatisfaction with the use of her land for the production of citrus that was benefitting her father-in-law but not herself. She further pointed out, that her husband would have argued and negotiated with his father to get the share out of citrus sale, but in the absence of her husband, Tulasa justified her father-in-law taking the entire earning, as she had not been able to provide enough labour in citrus production. Even though these women had access and control over the land, they did not have full control over what was being produced in the land. The difference in control over the crop was mainly regarding the inherited citrus trees. Besides partial control over the inherited citrus

trees, these women were able to use the land for production of cereal, citrus or vegetables. However, since the land that already had citrus could only be used to produce cereal and vegetables for few years until branches stretched out, the choices to produce cereal or vegetable was considerably low in areas where citrus had already been planted. But not all land had citrus trees, thus many lands were being used to cultivate cereal. Many such lands were potential land for citrus production, resulting in intra-household negotiation about how much land to use for cereal production and how much land for citrus production. Even though inter-cropping and multi-cropping potential in citrus producing land was practiced, the debate on the use of land was a major issue in every household, sometimes between husband and wife, and occasionally between the extended family members.

Maya Kumari Thakuri shares her story of involvement in citrus production as follows:

> It has already been thirty-five years that we planted citrus in our *bari*. Our daughters were small at that time. I was just seventeen when I gave birth to my first daughter. It was then that we planted few *Junar*. […] When I came here after marriage there was already one or two trees. My mother-in-law and I used to eat the fruit and keep the seeds. Then we planted it. Later both my mother and mother-in-law started thinking that it's not right to plant fruits in land where food is produced. Especially my mother was always worried that we might not get enough food to eat. But I told her that there is money in *Junar*. […] I always worked in these fields, take care of Junar, and ensure that they grow properly. I didn't even go to *maiti* during festival. My mother used to come over instead (Maya Kumari Thakuri).

> I was only twenty-eight years when my husband died, now I am sixty-eight. It's been exactly forty years. After my husband died it was really difficult for me to take care of my children. […] Taking care of children, and looking after *khet* and *bari* was too much work. So, I took my son to Sindhuli after few years of struggle trying to balance everything. Then, we got some loan by keeping some land as collateral. And we bought *Junar* saplings from nursery in Ratanchura. Slowly, we planted *Junar* [orchard] in *bari* (Ratna Kumari Thapa).

Both Maya and Ratna belong to early citrus adopters. Their experience of *Junar* plantation shows their own initiation in expanding citrus cultivation. Maya shares her active participation in citrus cultivation despite opposition from her mother and mother-in-law. Without hesitation, Maya continued to plant citrus and worked hard to sell citrus in the market. Ratna on the other hand pursued citrus plantation after her husband died. In her experience, absence of her husband resulted in additional work burden to her as well as her son. In order to avoid heavy work in cereal production, Ratna chose to plant citrus. In her opinion citrus plantation required one-time investment, after which the following years demanded less work. Unlike Maya, Ratna and few other women who took responsibility over citrus production, most of the early adopters of citrus referred to male member of their family as the decision-maker. However, the decision to plant citrus in the land that was currently produced maize, millet and paddy was a result of decision-making between individuals, and not only by one individual. With some discussion and debate regarding food or fruit, between family members, either the male member or the female member mostly had their final say:

> My husband used to work in district agriculture section of the government. So, he was close with *'sir'* working in agriculture. So he got influenced by them to plant *Junar*. I was scared that we might not get enough food to eat. We had many discussions over it. I wasn't ready. My mother-in-law and father-in-law weren't ready either. But he insisted. So we said do whatever you want to do. We even complained many times when there was less food production. But now these *Junar* trees are paying off (Sangita Karki).

> My husband had insisted that we plant *Junar* in *Bari*. But I said no. I didn't let him. I shouted at him saying that if we plant *Junar* then we might not get enough cereal. I feel stupid for saying that now. If we had planted citrus at that time, then our citrus orchard would also be like that of Arjun *dai*. Now we have started planting *Junar* and *Suntala* (Bimala Hayu).

> I had talked with my husband about planting *Junar* almost ten years back. He scolded me and beat me after that. He used foul language and threatened me to throw away from the house. He said that if we plant citrus then we wouldn't be

> able to feed our children. He blamed me for trying to keep him and his children into starvation (Sumana Bishwakarma).

> We had planted *Junar* long time back. But after there was no market, we decided to grow cereal again. Now we have decided to grow *Junar*. Decision to plant *Junar* wasn't easy before. Not like now. Now, everyone can plant *Junar* because there is more money. Earlier it was a question of whether you get to buy food after selling *Junar* (Geeta Thakuri).

Although production of food is considered important, production of citrus is currently valued over cereal crop production by most farmers in the study site, including of women farmers. But at one point of time, when market for citrus was not well developed, the question of who initiated the discussion rather than who made the decision provides how the negotiation process was between individuals within the household. With almost all families' negotiation process involved of debate on food crop or cash crop, whereby some individuals responded with retaliation towards the person who initiated the conversation. Like in the case of Bimala who shouted at her husband who initiated the conversation, and in the case of Sumana who got shouted at by her husband for bringing the topic of land use for production of *Junar*. Household conflict was and still is an integral part of citrus plantation decision-making as citrus production has direct link with the use of land that produced food crop. Conflict in decision-making was thus evident in households that struggled for food security, with either compliance or retaliation towards the decision of citrus cultivation. Despite household conflict and compliance, men were at a better position than that of women as presented in the case of Sumana. The use of threat to throw Sumana out of the house by her husband shows how women were positioned within the household arrangement in her husbands' home. Bargaining power of women was hence less than that of men. Despite opposition in choice, men on the other hand, could pursue their interest more easily as shown in the case of Sangita. Choice between cereal crop and citrus crop was a matter of cooperation by all or domination by one or more individual over the choice of others. Household arrangement in which women were relatively weaker in bargaining, due to what they had to lose, resulted in men being the major decision-maker despite joint decision-making in most cases. When women firmly stood with the decision to plant citrus, women usually also suggested alternative ways of providing food for the family*:*

> When we decided to plant Junar in our *bari*, we had to think of alternative ways of feeding our family. We thought of taking loan, but that was too risky. Then I asked my husband if I could request my father to send us grains. My *maiti* does not have large *bari* land but we have *khet*. So, when we were discussing about planting *Junar*, I thought I should speak to my father. I wasn't sure if my husband, more than that, my mother-in-law would like that idea. But when my husband agreed, everyone agreed too (Sharada Koirala).

> When I came to this place after marriage, for few years I thought what kind of place is this. There is no food to eat. There is only hard work and misery. I then thought of my home, my *maiti*. But I couldn't ask for help from my parents, so I asked my sister who was better off. I took Rs. 1000 as loan from her and promised her to pay back with interest. If not for her, it would have been difficult for us to plant these fruits that you see in our *bari* (Geeta Thakuri).

Women used support from their *maiti* (women's birth home or premarital home) as a solution to mitigate problem of food insecurity. Although women took help from their *maiti*, receiving support from wives or daughter-in-law's family was not an acceptable practice. As asserted by Sharada, she was reluctant to suggest the idea of asking for help from *maiti*. Likewise, in the case of Geeta, the husband was not comfortable to talk about the past when they had to ask for help from Geeta's *maiti*. During the conversation, Geeta's husband tried to divert the topic many times, and suggested that he doesn't like to talk about how they took help from Geeta's *maiti*. Taking help from *maiti* meant that the husband or husband's family was not able to provide the basic necessities, which could then raise the question of the status of male as a provider of the house. Despite such social norms, some women used their fall back position to argue in favor of citrus plantation by risking to face the situation if the suggestion was taken as offensive. This shows that decision-making not only included of who decides and who initiates the discussion, but also the factors that influenced decision-making throughout the process of choosing between alternative resources. The process of decision-making between individuals on land use thus included of layers of gender-based norms and practices that may hinder or promote the valued decision to transition from cereal to citrus crop.

6.3.2 Labour Use

All three types of labour arrangement in the study site is a resource having gendered pattern of division of labour as highlighted in Chapter Five. Each type of labour has its own value with distinct features as shown in Table 6.3. The value of labour is also different for men and women. Based on the type of activity under crop and livestock, man labour is valued differently than that of women. In cereal crop production, except for *'ropai'* which is socio-culturally considered as women's task, most work conducted by women can integrate man labour. Similarly, except for ploughing, most work in agriculture can integrate women labour into men's work. However, the concentration of labour in certain tasks at household as well as labour market shows patterns of engagement by gender and value given to each type of labour, which suggests gender inequality in the way labour is being used in the study site. The most striking difference in labour arrangement between man and woman is regarding cereal crop production. Labour arrangement practice within the study site demands four female labour days for one *hal, which* includes of one *hali* with an oxen pair, if not for an exchange of another *hal*.

The practice of exchange labour, which is prominent in cereal crop production stresses on return of man labour with that of another man labour, while either a man or a woman could return one woman's labour. However, given that man labour is valued more than that of woman's, the situation in which man provides labour in return for woman's labour hardly arises. Women on the other hand have to provide either double or sometimes three or four-fold labour provision for women in return for one-man labour. According to women's experiences of labour arrangement, unless the household is capable of hiring man labour, there is an increase in the burden of work among female as a result of the 'absence of' or 'less number of' male in the household, especially in cereal crop production.

Table 6. 3: Categories and Features of Labour

Categories of Labour	**Features of different types of labour**			
1. Household Labour	Unpaid Labour	Permanent, Seasonal or Temporary Labour	Skilled, Semi-skilled, Unskilled labour	Physical or/and Mental Labour (Managerial/Supervisory)
2. Exchange Labour	Reciprocal Labour			
3. Wage Labour	Paid Labour: daily wage or salaried			

Source: Field Study, 2016

Like Ratna Kumari Thapa who shared her experience of choosing to plant citrus trees over production of cereal crop after her husband's death, many women have felt the constraint within the exchange labour practice in cereal crop production that benefitted households with more male members. Maya Kumari Thakuri, who is an early adopter of citrus also expressed her concern over labour arrangement:

> I had five daughters, with no son. Before planting *Junar*, we used to pool our labour in the village, with households nearby. We worked really hard to grow food. Others had many sons, and brothers so they didn't have to worry about workload. But for us, we had to work a lot more. With only one man in the house, we could provide one-man labour in return. But when it came to working in our field, then we needed more men. How could we manage time to work so much? That's when I focused on planting *Junar*. Even when nobody was ready to plant fruits, I thought to myself, […] there is no value in working so hard to fill our stomach, if we need change then we have to change (Maya Kumari Thakuri).

Like Maya and Ratna, there were few other women who realized the difference between the values of labour, which was discriminated against by gender. Likewise, it wasn't only the women who felt the burden of work as a result of less male member in the family. Few early adopters of citrus, mostly male, also shared their experience of transition from cereal to citrus crop, as a means to reduce the work burden:

> I had only one son, so the land that belonged to me after my parents died, was not divided among brothers. He could use all the land like he wanted to. But having land is not enough, if there isn't enough labour to work. […] Daughters get

married, so even when I had five daughters, they weren't going to provide their labour. They belong to others. So, I thought of planting *Junar* (Mohan Ale Magar).

Despite the debate regarding food or cash crop, many families considered planting citrus also as a means of saving household labour input. Both men and women thus valued reduction in workload of family members in a system of labour arrangement where families with more men benefitted over those with fewer men. Transition to citrus crop to some extent supported in tackling gender unequal labour arrangement, which was prevalent in cereal crop production that used exchange labour as the dominant form of labour practice. Citrus plantation was one of the means to minimize household labour input on one hand, and on the other, it also created an opportunity for wage labourers to get engaged in citrus production. Citrus production thus includes of household labour and wage labour with various features of each type of labour as shown in Table 6.3. Women's labor contribution in citrus production can therefore be understood at two levels, one at intra-household labour arrangement, and another at market economy as wage labourers.

Intra-household labour arrangement in citrus and integration of women in citrus production as wage labourers was highlighted in Chapter five. As presented in chapter five, few activities under citrus production, mainly the tasks of mulching, weeding and application of manure fertilizer was mostly done by women in citrus crop. These tasks were the traditional work that women used to do even in cereal crop production, which did not require any new skills or technical know-how. Despite variation in women's contribution in citrus production between women from three Categories of Household, these activities were part of the collective lived experience of every farmwoman, whether they belonged to large citrus farming household or those who had recently begun citrus farming. Women's day-to-day experience of their labour contribution thus included of:

These *Junar* once planted, does not need to be planted again the next year. Unless you want to plant new saplings, the old trees only needs regular nurturing. Apply water, fertilizer, insecticides, weed out unnecessary plants and time-to-time mulching, then pick the fruit during harvest, and after harvest, you cut and trim the trees then apply Bordeaux paste. You keep doing these works. […] Mostly *dai*

decides which work should be done, and how many labourers should be hired. He arranges the labourers. Then we [with the labourers] work together (Suku Maya Ale Magar).

I don't have to do anything in *Junar Suntala*, *dai* takes care of everything. What needs to be done at what time, whether to apply paste or not, whether insecticides should be applied, everything is decided by him. I sometimes assist during weeding and fertilizer application. But I hardly get time. It takes around half an hour to come here [referring to the livestock shed cum hut]. Every morning I start my day by cleaning the shed and feeding animals. Then by the time we drink tea, its time to cook food. Then wash utensils, sometimes clothes. The day just passes by. I also make *gheu* (clarified butter) or *mohi* (buttermilk) sometimes. So, when there is work, *dai* (referring to her husband) handles everything. I mostly cook for the labourers (Ranjana Koirala).

I do everything by myself. *Bua* also does it. But he does not like to constantly work in the field. He doesn't like to clean the fields. He thinks the labourers would do everything. But that's not true. Even when labourers are hired, I work along with them to pull out weeds. Labourers don't care much about properly finishing the work. They just come around One O'clock in the afternoon, and keep waiting for the time to tick five to six in the evening. If I don't oversee their work, then there are always left over weeds everywhere. After weeds are taken out I also apply *chuna* (Agricultural lime powder) on the soil (Maya Kumari Thakuri).

Unlike Maya who takes control of the decision's regarding every activity under citrus by providing both supervision as well as labour input, most women provide their assistance under the guidance of their husband. Their role in citrus is limited to works that has been assigned to them by their husband. In many cases it's the labourers who conduct most tasks.

I sometimes look around during citrus plantation and harvesting, but only when *dai* has to leave for some emergency work [...] when he gets back he tells me that I can leave as he will take care of it (Ranjana Koirala).

While sharing this experience, Ranjana further suggested that she could then feed the buffaloes that were left hungry for hours due to her need to be present at the citrus orchard site. Since her husband was more actively involved in citrus crop and took control over almost all activities in citrus farm, Ranjana felt more comfortable referring her husband as a knowledgable citrus farmer. At one hand Ranjanas' narration shows her reluctance to identify herself as a citrus farmer, but on the other she proudly tells her story of acquiring the skills of cutting grass, and her struggle to learn farming techniques after her marriage:

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

Based on Ranjanas' narrative, it can be interpreted that even cutting grass, which is considered as one of the easiest and simplest work by every farmer, was not simple for her at one time in her life. Ranjana's determination and hard work in learning ways of traditional farming, while her reluctance to own citrus farming as her work, posits question regarding socio-cultural mindset and expectation of women's integration into citrus farming. After working and living for years in Kathmandu, her husband came back to the village and started getting engaged in citrus farming. First, he earned from the inherited citrus orchard, and then started planting new saplings in land that was earlier used to cultivate maize and millet. While learning traditional farming was considered as a skill necessary for women to survive in rural areas, neither Ranjana nor her family members considered it crucial for her to learn the techniques of citrus farming. Citrus farming was considered as an additional agricultural task that was initiated first by her father-in-law and later by her husband who inherited the citrus trees. Socially, it was acceptable for women not to know the skills and techniques necessary to grow and harvest citrus. Skills regarding traditional farming were, however, considered as an asset of women living in rural areas. Not knowing traditional farming skills resulted in day-to-day pressure as experienced by Ranjana. Son on the other hand was not pressurized to learn traditional agricultural skills:

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

Ranjana recalls that the orchard was looked after by her father/mother-in-law. At that time, taking care of the orchard was not difficult once planted, as a modern scientific way of managing the orchard was not practiced. 'Six to seven years back, many fruits used to get wasted as there was less market, and labour costs for portering was much higher' explains Ranjana. Ranjana's narration reiterates generational inheritance of citrus farm by the son once citrus market expanded. The farm that was once developed by her father-in-law was later enlarged by her husband. Number of women shared similar story of inheritance of citrus orchard by their husband, and their relatively minimal involvement in citrus plantation related decision-making. While other agricultural activities became an inherited responsibility of women in farm families, citrus responsibility was taken over by men who returned back into agriculture after seeing the prospect of earning high income. Given their husbands significant presence in citrus farming, despite labour contribution, women tend to undervalue their work in the domain of citrus production.

Maya's involvement in citrus is an exceptional case in the study site:

> After I had already given birth to five daughters, I went for Junar training in Kirtipur. My youngest daughter was only 15 months old. Villagers used to question me then, saying why is she leaving her infant behind, what if she dies? But I left, *nani* (female child: referring to the researcher). I told my husband to take care of the child. My mother-in-law was also alive then so I left. After the training, I realized that the way we had planted trees were not right. That's why so many trees died earlier. Then we started planting it like we were trained [...] Nani,

> during the training, those Japanese and Nepali women asked us whether we had done family planning. She made us think about our reproductive role. She said if a family wants a child, it's the woman who has to take the responsibility for nine months and more. Then I told my husband to do family planning. But he did not agree. So I thought I should do it myself […] I already had a good number of children, five daughters, why would I want another child. We were told that many people don't even have more than two children. We being a frog in the pond didn't know about life that existed outside of the village. Then I thought deeply and told myself 'even if people mistreat me, I won't try to have a son anymore'. So, I did it. Without telling anyone. Then I started realizing more that women should not confine themselves in the household. I started working in citrus production more than ever before. […] If we could earn more money, we could educate our children. So I never let my daughters cut grass, I took the burden myself. And constantly asked my daughters to focus on study, while I worked to earn money for their education (Maya Kumari Thakuri).

Maya's narration of the critical incident in her life brings forth the issues of negotiation of reproductive norms and societal expectation of her as a mother in opposition to her aspiration to travel and learn. The way she managed to take decisions of mobility despite opposition from villagers, or lack of consent from her husband regarding her reproductive role shows Maya's individual willingness to do something that she valued. With five daughters, and not a single son, Maya constantly feared being sidelined by other women who may bear a son to her husband as she recalled her past memory. This fear was turned into an asset by Maya, leading her to convince her husband to transfer land in her name as she had already borne five daughters. This transformation in her behaviour was due to her increased consciousness and awareness after she had the opportunity to go to Kirtipur for training. After returning back, she also tried to convince her husband to do family planning, but his reluctance led her to take control of her own body. Without informing her husband, she went through the birth control procedure. Challenging the dominant societal and family norms over son preference, and the status given to women who bear a son, she persisted on enhancing her economic status, and focused on her daughter's education. Comparing her life with that of other women in the village, she further asserted that unlike other women who complies with what others have to say, she relied on her own will to change her life for a

better future. Despite undergoing through both societal as well as family pressures, Maya persisted on her endeavour to become an agricultural entrepreneur. Unlike most women in the study site, Maya conducted every task under citrus production including of land preparation, preparing Bordeaux paste, cutting and trimming, and harvesting. She either did these works alongside her husband or conducted these activities without having to rely on her husband for guidance.

Like Maya, there were few other women who conducted almost every activity under citrus production at household level. Depending upon whether the women had skill and knowledge about citrus farming, women were able to perform every task. However, the tasks for wage labourers had gradually become more fixated with boys and men involvement in land preparation, which included of strength and precision to dig the pit according to minimum of 3 by 3 feet measurement. Women's presence was stark in regular works of weeding, mulching and fertilizer application, while men involvement was higher in citrus harvest, with young boys working as fruit-pickers under the supervision of men citrus traders. Women and girls involvement in citrus harvest was mostly limited to small-scale harvesting, especially at household level, and also during portering of citrus from citrus orchard to the roadside. Another work that included of both men and women wage labourers was during the application of Bordeaux paste, and cutting, trimming and pruning of the trees after harvest. Women's experience of their engagement in citrus labour market and of hiring citrus labourers includes of:

> There aren't many people in this village that can work for others. Most people work in their own farm. They earn from citrus, so they don't look out for income earning opportunities in agriculture. Especially male, they work in their own land, then go out to work in construction, or make furniture. They build houses, especially after the earthquake, […] and also the road. Men have other works to do. Women are usually available. But with money from their own farm, they too don't prefer to work. So, I usually travel to Landrang to get labourers. There they don't have *Junar Suntala*, so we find many labourers from there (Maya Kumari Thakuri).

> We have to plead to labourers sometimes. We have to say 'Please come, help me with some weeding, or to carry fertilizer'. Even when they come, they come after finishing their work. The timing is very flexible here. Without labourers we cannot do all the work by ourselves (Suntali Ale Magar).

In order to reduce the work burden, women farmers who typically have the role of weeding, mulching and fertilizer application, search for labourers to assist them with these tasks. Women farmers use persuasion, sometimes in-kind support, and sometimes go to further villages where there is surplus labour. Labour that they typically gather for such works includes of group of women who come to work in their field for a day or couple of days. Women labourers often used the term *'mela pat'* to denote agricultural work that included of regular agricultural tasks such as weeding, fertilizer application, and other cereal crop-based activities. However, for the women labourers, there is always a struggle between household labour arrangement and their engagement in market labour opportunities:

> We usually go to work after finishing our household work. Sometimes when there is someone else to take care of livestock at home, then I can easily leave for *mela pat*. Sometimes I send my daughter to work. Since we have been providing labour from before, they expect us to help them (Ratna Ramtel).

> When we go for *mela pat*. We don't go alone. We form a group of three-four, so that we can finish work quickly. We, *mahilaharu* (females) decide on the time to leave, usually around midafternoon, and we come back together. Sometimes work is far, so we travel in-group. […] It's not that I don't travel all alone. But when we are going for same work, from the same village then it's always easier to go together (Sumana Bishwakarma).

These women however didn't provide their labour during post-harvest activities under citrus. Their labour input was limited to cereal plantation and similar tasks under citrus production.

> Interviewer: How do you know when there is work in the village? Is there any mechanism in which labourers are mobilized?

Group of women labourers: Somebody from the village where there is labour need comes to our village, and asks us if we can come to their field on so-and-so day. Sometimes, we hear from somebody else from our own village that had been informed. Then we decide the time and date. Sometimes we go exactly when they had asked, and sometimes after few days.

Interviewer: How do you know the kind of work for which you have been called for?

Group of women labourers: They call us for *mela pat*. When they say *mela pat*, we know they want women. […] *Mela pat* means regular works such as carrying fertilizer, applying fertilizer, and pluck unnecessary plants (weeding).

Labourers, mostly women, were constantly moving from one place to the other to perform tasks considered as *'mela pat'.* 'We have been called for' and 'we were told that there is work' were some references that women labourers provided. They were either called using a mobile phone [recently] or an individual from the village would pass the message to spread it around the village about work availability in the next village. Word-of-mouth thus became the tool through which one key messenger informed about the labour demand. Similar procedures were practiced in mobilizing labourers for citrus related work, but often the word of labour need did not reach these traditional labourers. 'They don't come to call us', 'we only come to know about the work after the work has been done', 'there are other labourers who do those work', was often expressed by women labourers who did regular agricultural work. These labourers were usually not called upon by citrus farmers or citrus traders for other citrus related work. Mainly during post-harvest activities, women labourers living closer to large citrus farmers were employed for application of Bordeaux paste, and for cutting, trimming and pruning.

Although it's difficult to find labour, we can still find some labourers from the village during post-harvest activities. Once they are trained, they can easily perform the tasks of cleaning the trunk, and applying Bordeaux paste. They can also help in cutting, trimming and pruning (Rammaya Ale Magar).

> We received training on *Junar* orchard management. Two days training to learn how to pick fruits, how to apply Bordeaux paste, how to make the paste, and other works. Since, we had received training, we are called for work when there is a need for wage labourers (Nirmala Basyal).

> I never worked for wage. But I heard there is lot of money in citrus wage work. So even though I haven't been trained, I came for work. I told *dai*, that I wanted to learn. So I am working for Rs. 300, while others are working for Rs. 500 per day. They are trained so that can perform the tasks faster (Suntali Purbachane).

Both men and women citrus farmers gave preference to labourers living nearby for few works in citrus farming. While citrus market had created new wage labourers, availability of skilled labourers within the village had prevented entry of women wage labourers who provided their labour input in traditional works. Training on citrus related work had differentiated labourers as skilled and unskilled labourers. Thus, selection of labourers living nearby for training was the first step, which encouraged some women's participation in citrus labour market, whereas the same process marginalized some women labourers living at a distant location. Creation of skilled and unskilled labourer as a result of access to participation in training and information reach about the training as well as labour availability promoted some women's integration into citrus labour market, and at the same time hindered some women's participation. Accordingly, confining those women labourers labour input in cereal crop production and works that includes of typical agricultural tasks such as weeding and carrying manure for which the wage rate had hardly increased.

The opportunity to earn Rs. 300 to Rs 500 in citrus related works has recently attracted many households, especially women who previously never worked as wage labourers. These new citrus wage labourers however struggle with time and workload, juggling through household agricultural work and market opportunity to earn. Although women living nearby large citrus farmers were more at advantage in citrus labour market than wage labourers living in other villages, these women had additional burden of work as post-harvest work in citrus overlaps with harvest and post-harvest of paddy and millet.

6.3.3 Income

This section includes of income dimension of empowerment. How do men and women accumulate income in agriculture? Who has control over the income from each production domain? How do men and women use their income? What does women's income from crop/livestock with varying degree of market orientation say about women's empowerment in multi-functional agriculture? Income is definitely the most important factor in agricultural transition, motivating both men and women to utilize their available land to produce citrus crop over cereal crop. Despite households' engagement in citrus production, and its contribution in household income generation, income from citrus, as well as from other crop/livestock shows individualized pattern of use and control over income from each production domain. Depending upon the degree of market orientation of citrus, cereal, vegetable and livestock, along with the amount of transaction in each case, the involvement of men and women in the decision-making of income generating opportunities in agriculture varies.

The degree of vegetable farming was higher than that of citrus in some households. Few women living closer to the highway, mainly from Ratanchura earned substantial amount of income from vegetable sales. They even used their income to buy additional land, besides accumulating jewelries, gas cylinder, cooking utensils and providing basic necessities in the household as well as other goods such as television and mobile phone. In such areas, the number of male farmers involved in vegetable farming was however higher than that of women, with women's input in agricultural production at household level but no control over income use from vegetables sale. Rukumaya Thapa, on the other hand, demonstrate how she has changed her life through hard-work in vegetable farming:

> My life completely changed since past seven to eight years. Before that it was only about feeding oneself. Plant some vegetables for consumption, and then focus on cereal. But after the road, many organizations came to the village. They provided us with training on vegetable farming. The village also started having better access to water supply. So it was easier to do farming. Earlier for one *hal goru* we had to provide four to five days of labour. But now since we earn, we can also pay in cash. They come work for us if we pay 700 - 800 rupees. Earlier we used to work

> in others field; now others come work for us. Just imagine, how much life has changed. […] It's not that our work has decreased. Although household work has become less than before, I engage myself in other work. I have also recently bought *thela* (Push-cart). I sell my vegetables and sometimes buy citrus from local farmers (Rukkumaya Thapa).

Rukkumaya suggests reduction in drudgery related to exchange labour practice in cereal crop, as more valuable than the overall amount of workload that she still has. Her ability to free herself from exchange labour as a result of her capability to earn from vegetables sale, has provided her with a choice to get engaged in other work that she values. Maya Kumari Thakuri had also provided similar meaning when she suggested that transition to citrus crop was also a means of household labour utilization. She referred to cereal crop work as 'work that killed enthusiasm'. Her reluctance to provide her labour in cereal crop which benefitted households with more men over women, motivated her to engage and invest in citrus farming. 'Even when there was no road, and no women, except for porter class women who would travel to distant places, I used to gather porters, walk for a whole night to get porters from another village, then come back to the village to collect citrus. Then early morning we would move to Sindhuli. I didn't carry the load, but I used to go with them' asserts Maya. She interprets her involvement as a move to rectify her husbands less enthusiastic involvement. She recalled that her husband would rather sell citrus with farm-gate price, than go to the market and sell it in higher price. She, however, did not agree with his views, and decided to take the lead by herself. 'I decided to go although it was not usual for a woman to travel long distances, and he said ok. We didn't have much argument about it' shared Maya.

The process of decision-making in Maya's case shows her ability to take control of every decision regarding citrus sale. Regardless of additional workload, she insisted on enhancing her economic status by thinking over the profit margin between two alternative ways of selling the citrus, one at farm-gate price, and another by going to the market. Unlike most women in the study site, she kept income from citrus sale as her own income. She had a bank account in her name where she kept all her savings, including of sales from vegetables, and livestock. Most women in the study site however relied upon their husband or other elderly member of their family, either mother-in-law

or father-in-law to deal with citrus traders. In some cases, mother-in-law kept the income from citrus, but in most cases it was the male member of the family who had total control over the use of citrus income. As shown earlier, despite control over land, few households did not have control over the income from citrus that was planted in their land. Having citrus orchard thus did not translate into control over the use of income. Women farmers experience on the use and control of income from four domains of agriculture was as follows:

> We earn from citrus sale, some from vegetables. And my husband also gets some *thekka-patta*. I wouldn't know what he does, but he says he has other work too. He usually deals with the citrus traders, and keeps the *baina*, and final sale amount. […] But he told me that I could keep whatever amount I earn from vegetable sale. So whatever amount of hard work I put into vegetable is mine (Suntali Thapa).

> I take milk to the market every day. Per litre we get fifty-five rupees. So, I keep some milk for home, and then sell the rest in the market. I sometimes sell some vegetables too. But I don't always plant vegetables. We also have *Junar Suntala*, but I don't sell it. My husband does (Bina Karki).

The pattern in which the income from agriculture was used and controlled by men and women includes of men having more control over citrus income, while women took control over dairy products and vegetables. Although women were making income out of dairy products, the sale of livestock was still not under the control of women in many cases.

> How can I sell buffaloes and goats, that includes lots of money, so *dai* handles selling and buying of livestock although I tell him when and why we should sell it (Ranjana Koirala).

Similar experience was shared by many women, who told that selling of large livestock and citrus that includes of transaction of large sum of money is usually handled by men. Although men mostly handled large transactions, women also occasionally sold agricultural products as expressed by Ranjana Koirala:

> I sometimes sell a small amount of citrus or milk products when I need immediate money, especially when my husband is not around (Ranjana Koirala).

As shared by some women, only a small amount that is negligible is obtained by selling agricultural products. Such amount is then used to recharge their cell phones, buy sweets or snack for young kids and guests, or provide pocket money to their children. Although small in amount, the money that women manage to acquire provides them a sense of independence as they are capable of performing day-to-day behavior that is not constrained by financial measures. The term that is often used by women to suggest their day-to-day lifestyle includes of '*ghar-byawahar'* or household affairs which not only includes of daily agricultural task and food preparation, but also social networking and relationship building for which at least a minimal flow of cash is a necessity. Despite acknowledging the importance of cash in maintaining day-to-day lifestyle, the entrepreneurial tendency in agriculture was however not found among women in many cases. Especially, when it came to expanding vegetable farming, some women even feared that once the earning is high, the work will be noticeable and the income will then not remain in their own hands.

> I am happy with the money that I am making by selling few vegetables. It helps me to buy things that I want. If my husband sees that I earn more, then he would ask me to spend my money, instead of giving his money to purchase household goods (Bidhya Magar).

> We shouldn't tell how much we are earning. These are small earning compared to citrus. But if he thinks that I earn a lot by selling vegetables, and sometimes *gheu*, then he would expect me to use my own money to recharge my phone, or to buy salt when its over. If he earns more than me, then he should be the one to spend on every household item. I wouldn't spend my money on things that he would buy (Sukumaya Ale Magar).

While most women suggested that men mostly take hold of agricultural domain that has large earning, and leave income earned from other agricultural domain to women, some women used the argument of 'small' earning and 'large' earning as a

concept that determined control over the household income and expenditure. During such argument, some women also used the phrase, *'Akha napare samma afno',* which means that the amount, which is not large and is not noticeable, belongs to them. Such a reasoning suggested lack of motivation among few women farmers in expanding vegetable production. By comparing their income with that of their husbands, women showed concern over how men might save their income by making them invest in household expenditure that was earlier provided by men. Instead of spending in household goods, these women aspired to spend their earning in other things that they valued. Most women suggested buying recharge card for cellphone as an expense that they did not feel comfortable asking their husband. Thus, by keeping their income low, these women felt more secure as they could make their husband more responsible towards providing the basic household necessities. Men in these households usually purchased both big and small items that were necessary in the house, including of food items like salt, oil, spices, rice, and other goods such as clothes, shoes, soap, shampoo, toothpaste and so on. Women thus valued the amount of earning based on how much control they could exercise. Some women were found to be working hard to increase their income and make large-scale investment even in buying land, while some women were found to be creating a boundary in how much they earn given their anxiety over whether they could control the income and expenditure as per their will if the earning is highly noticeable.

6.3.4 Social Network and Membership

Social network is a major resource in agriculture as market actors, organizations and individuals' work as a catalyst by providing support in agricultural development of each production domain as well as by influencing participation of men and women in agriculture. Social networks in the study site includes of institutions and groups related to health, education, road, water, sanitation, community forestry, credit and various other sectors. It also includes of regular participation and meetings of group of people in the programmes organized under Poverty Alleviation Fund, Earthquake Relief Project, Citizen Awareness Center and many other programmes that were active in the study site. However, not all social networking and membership opportunities available in the study site had relevance for the current study. The most important social networks related to agriculture included of Junar Central Cooperative Union Ltd. and Junar Producer

District Cooperative Union Ltd. These two organizations were actively engaged in citrus market development. While Junar Producer District Cooperative Union Ltd. consists of Junar cooperatives active in Sindhuli district, Junar Central Cooperative Union Ltd. consists of membership of *Junar* cooperatives active in Nepal. Both of these organizations are located nearby the central market and well-known bus park in Kamalamai municipality of Sindhuli district. The location in which these two organizations operate is a hub for both *Junar* and non-*Junar* producing people. With a local teashop adjacent to citrus cooperatives, along with fruit vendor store, and a fruit juice and fresh fruit shop operated by the citrus cooperatives, the locality is crucial in understanding citrus related activities. It isn't unusual to meet citrus trader, citrus farmer, nursery operator or a transportation owner engaged in citrus market, nearby this locality. District Chamber of Commerce and Industries (DCCI) Sindhuli is also located adjacent to these organizations office. This area was thus a platform for social networking among and between citrus stakeholders. Especially, this junction was more vibrant prior and during citrus harvest every year. Important meetings, discussions, information sharing, and trainings related to citrus, mainly *Junar,* was handled in this area, after which the programme or project activity would move to the localities considered as citrus producing areas. Thus, occasional meetings were often called for, which resulted in representatives from each village level *Junar* cooperative to participate. Often times, such meetings were also held in Khaniyakharka in Ratanchura VDC, rather than in Kamalamai municipality, in order to ensure more participation by *Junar* farmers. Occasionally, in association with Junar Producer District Cooperative Union Ltd., DADO, DCCI, and other actors including of I/NGOs, local Junar cooperative would organize meetings and trainings at local level in each VDC. These networks have also resulted in selection of the best candidate for the national level award bestowed to farmers. Two male large citrus farmers from Sindhuli district had received the title of The President Excellent Farmer Award. The identity of large citrus farmer thus holds respectable status within the society, where farmers are also competing to increase the scale of production with proper orchard management practice.

The role of local Junar cooperative is imperative in mobilizing local farmers, calling occasional meetings at local level, information dissemination about government programmes and other projects, and selection of participants for trainings. The local cooperative also facilitated distribution of agricultural inputs, mostly related to Junar,

but also other inputs such as vegetable seeds, spray tanks, *kuto-kodalo*, fertilizer, Bordeaux paste, ladder used during citrus harvest. They also facilitated government subsidies for buying *Junar* saplings from the nursery, advocated at district level for citrus development as a means for local development, and co-organized trainings, workshops, and meetings. In addition, *Junar* Cooperative also collects citrus fruits from the farmers and works like a citrus trader. One of the objectives of citrus cooperative is to ensure that the farmers' product will reach the market, and that the farmers will receive fair price for their goods. A large male citrus farmer and Chairman of one of the local citrus cooperative, who is also a representative of central citrus cooperative, shared the motivation behind forming a farmers group and eventually a cooperative as follows:

> We registered the group in 2065 BS [AD 2008]. The group was formed four to five years before registration that means the group was formed around 2060-61 BS [AD 2003-04] for protection of farmers' rights. We formed a group after one incident happened in Sindhuli market. We took *Junar* to Sindhuli market one day. When we took *Junar* from here to Sindhuli, there used to be *Sanibare haat* [Saturday weekly market]. On Thursday we used to pick all Junar, and on Friday we used to leave around 9 am. May be around 150-200 people used to go from here. We used to sell Junar in the *haat*. Whatever was left behind, we would just throw it away. […] Then one day, when we went to sell Junar like that, some *dalal (*a derogatory term given to small traders; *dalal* is a commission agent*)* started to call us *dhakrey* (a derogatory term to refer to porters), and insulted us. Those people from the market mistreated us and one day we could not resist it. We got angry when they pulled our *doko* (traditional bamboo basket), and threw our *Junar*. So there was a fight. At that time only 40-50 of us used to go to the market. But we decided not to leave those people [referring to *dalal*], so we formed a group, and registered it in District Administration Office. Then we formed another organization, which was later named as *Junar Bikash Sangh* (Junar Development Association) (Male citrus farmer from Tinkanya).

Formation of groups and cooperatives was thus initiated with the idea of uniting farmers and creating a legitimate space for farmers within the market and the government. Farmers struggle for fair price had led farmers to occupy the market by themselves at Sindhuli. In a context where the traders [or *dalal*] motive was to

demoralize farmers in order to buy citrus from farmers in lower price, and thereby occupy the market by themselves, the creation of farmers group was justified as a means to unite farmers and promote farmers rights. The resistance as shown by the farmers, by fighting back, and forming farmers group and cooperative was an initiation towards developing a mechanism that could create a space for local *Junar* farmers to bypass middlemen. The difference in collecting, portering and selling *Junar* at market was however the same, whether it was after or before the formation of group or cooperative. The only difference after forming a legitimate group or cooperative was that of market space for local traders, where farmers could become traders themselves, and buy *Junar* from other farmers in the village. Male farmers as mentioned earlier took advantage of the possibility of becoming traders after formation of cooperative that protected farmers' rights over their produce. The number of farmers that went to the market after the conflict at Sindhuli Saturday market substantially decreased the number of female farmers. Given the scenario of physical fight where farmers and traders started using bamboo sticks and fists to fight, female farmers discontinued their participation in the market as a result of future threat. Earlier if both husband and wife would go to the market, only one person from the household, always the male member, decided to go to the market. Moreover, many families stopped risking their lives, and instead considered traditional cereal crop as an appropriate crop over *Junar*. The percentage of male share in *Junar* cooperative is 71.5 percent and that of female is 28.47 percent. Table 6.4 shows sex-disaggregated data regarding the shareholders in agriculture-related cooperatives of selected three VDCs. Table 6.4 shows a huge difference in the number of male and female participation in citrus cooperatives, with only 39.80 female to every 100 male participation in citrus cooperative.

Table 6. 4: Male and Female Participation in Agricultural Cooperatives

S.no	Organization's name	Share-holders		Total	Female to Male Ratio
		Female	Male		
1.	Junar cooperatives	166	417	583	39.80
2.	Bee-keeping cooperative	3	24	27	12.50
3.	Other agriculture related cooperatives	48	55	103	87.27

Source: Yearly Agriculture Development Program and Statistics, DADO (2070/071)

Amidst the conflict in the market that created tension, organized farmer's group and cooperative assisted men farmer's engagement in the market while discouraged

female participation in the name of safety. More emphasis on the importance of long-distance travel and struggle with the people in the market thus became a social criterion to enhance men's share in *Junar* cooperative in already male dominant crop production sector.

> I used to carry *Junar* on my back. Our entire family used to go, except for my mother-in-law, who stayed back to take care of children, and livestock. […] But after the fight broke, everyone was worried. Many people stopped going to the market. Both men and women stopped, but mostly women stayed behind while men still risked their lives (Women farmer from Tinkanya).

Many farmers considered the conflict in the market as a threat, as a result many farmers stopped going to the market to trade *Junar*. Some farmers on the other hand saw opportunity within the conflicting situation, and thus mobilized farmers, mostly men to stand strong against the outside traders. Formation of group and unity among farmers, which consisted mostly of men, was a process through which some *Junar* farmers gradually became local *Junar* traders. The condition of men mobilizing men as *Junar* traders is still apparent even today with the existence of only male traders. Social network of men in citrus trading as earlier presented also shows how men mobilize younger men for coordination. Young traders are motivated and encouraged to become a trader by experienced male traders in order to get hold of farmers closely associated with the young trader. Young male trader thus had the opportunity to work and learn from experienced trader, while females were not encouraged or motivated to participate as traders by the existing male traders.

Women's participation and representation in citrus cooperative is nevertheless encouraged. According to Maya Kumari Thakuri's experience she keeps getting letters from the cooperative to rejoin as District Junar Cooperative chairperson. Resonating her brief residency in Sindhuli, she further adds:

> When I was a chairperson in the cooperative, I used to live in Sindhuli [...] for about two years. We have a house there too. Earlier our children lived there while they were in school. At that time, I used to sell Junar from there. But goats and cattle were in dire condition here. Nobody looked after it properly. I then came

back. *Bua* (refering to her husband) could not manage it all alone, so who else could help him. Labourers don't do such work. These household works need to be done by ourselves. There is no choice otherwise. We need manure. Farmers cannot do without it. So, I came back. That cooperative still sends me letters, and asks me to join the cooperative. Whenever I go there, they ask me for advice. They consider me as a lead Junar farmer. But we need to work for ourselves, in our own farms, isnt it? […] if we take care of livestock and manage urine and dung properly then the trees will grow faster and it will give more fruit. People here ask me sometimes […] how did your trees grow so fast? (Maya Kumari Thakuri).

Nirmal *bhai*, keeps asking me to join the cooperative meeting. He encourages me to participate and speak infront of other people, and to say what we farmers need. I try to participate when I am called for. But I don't always get to manage time. Its difficult to manage home responsibilities with that of other social responsibilities. They say there is a need for women participation, so they call me because not many females in this village can freely speak. They have fear, fear of something. May be their husband, maybe it's the society in which they live. Speaking in public is not easy for many women. So, they call me as I speak whatever comes to my mind (Laxmi Hayu).

Contemporary women's movement, which has emphasized on the need for thirty-three percent representation of women in every group, organization and institution, has resulted in such structures to promote women's participation. Hence, selected few women farmers have been encouraged to participate in cooperative's executive committee and working committee. They are also encouraged to attend meetings and workshops held at district and local level. Despite such influence, women's participation in citrus is significantly lower than that of men as shown in Table 6.3. Three preliminary workshops organized by PMAMP to brief about the objective of the program, had called men and women farmers to participate in the workshop. Dissemination of information about such programmes is conducted through the channel of cooperative network, using representatives of the cooperatives as the medium to spread the information at village level. The representatives then either inform face-to-face or with the use of telephone to inform mostly another member of the same cooperative. Using these mediums, the information is then assumed to reach larger village population, but is often limited to

few farmers who are actively engaged in the cooperative activities. The number of women participants in one of such workshops at district level, organized at Khaniyakharka, was 10 women for every 100 men. Out of the women participants, half of them were JTA being trained by DADO. Thus, the real representation of women citrus farmer from the village was even less. Other two workshops that were organized at village level had more or less equal participation. The difference in the participation of women at district level workshop and local level workshop can be interpreted in two ways. First, the district level workshop was conducted with the objective of bringing the representatives from each *Junar* cooperative that was active in the study site. Call for a limited number of participants might have resulted in men to take the responsibility over women to represent the cooperative. Second, the district level workshop was organized two to three hours away from the village, in order to ensure participation from different localities. Selection of central locality to ease farmers' participation however resulted in only one female farmer from Khaniyakharka to participate in the workshop that was held at Khaniyakharka. In contrast, the participation of women in local level workshop was higher as a result of call for unrestricted participation, and also because the workshop locality was closer to the residency of most farmers. Non-participation by women citrus farmers, especially at District level workshop, suggests that even those women who are encouraged to participate in cooperative meetings, are bypassed by men when participation of limited number of people is expected. Interview with the women who participated in the District level workshop:

Interviewer: How did you come to know about the workshop?

Interviewee: I was in the *bazaar* (market) yesterday, when I heard men talk about the workshop. They said that the workshop would be held tomorrow at 11:00 am. So, I finished my work at home and came to find out what was going on.

Interviewer: I heard only few people from the cooperative will be attending the meeting. Which cooperative do you represent?

Interviewee: I am not in the cooperative, not in *Junar* cooperative. I am a member in other agriculture cooperative. Although I have *Junar*, which my husband

planted many years back. I just came to attend the meeting, to see what is going on. I attend these types of meetings to find out about the activities in the village.

The women who participated in the district level workshop did not speak a single word. While most men in the workshop asked questions, and inquired more about the program, she sat quietly in the room until the end of the session. In the end, she took Rs. 500 that was given by the organizers to every participant as a travel allowance. Given that she wasn't even representing any of the cooperative, nor was she informed about the workshop by the organizers, the motivation for this woman to participate in the workshop was the money. Her participation initially looked like at least one-woman farmer was present in the workshop, but the participation did not have any meaningful significance. On the other hand, women's participation at local level workshop consisted of more women participation than in the district level workshop. Irrespective of whether women cooperative members had been communicated about district level workshop, women stressed their preference to participate in activities that are closer to their home than in activities that are further away. Local level activities save time as well as uncertainties related with travel. Participation at local level does not require two to three hours of travel time, and any participant can easily leave the workshop premise to go back to their home without having to wait for irregular and uncertain mode of commuting. Women participants at local level were often seen moving in and out of the workshop room. Some women carried their infants with them, thus whenever the child cried, those women had to leave the room. Disturbance created by infants resulted in men questioning, 'why women with babies need to attend the workshop?' Despite such remarks, women continued to participate in the workshop, by occasionally leaving the room to comfort the baby, and re-entering the room. Women's participation at local level thus showed their interest and motivation to learn about the programmes related with citrus farming.

Women's participation at local level cooperative meeting was also remarkable, with almost equal number of men and women during monthly meeting in one of the cooperatives in the study site. The local level cooperative meeting was held on a monthly basis with the objective to collect savings from the farmers and to disperse the collected money as loan to other farmers. Local farmers thus interacted, negotiated, and planned about how the credit should be dispersed and who should get it. Participation of

men and women in local cooperative meeting was imperative in how the cooperative made decisions regarding the accumulated cash, and also about citrus related activities as well as other local level decisions when necessary. During one of such regular meetings of the local cooperative, the agenda of the meeting was to collect the regular savings from the farmers, and disperse the savings to the farmers as loan amount. However, the group decided to use the collected savings of that day as well as previous savings amount into on-going road construction and maintenance. The meeting which normally lasted for about an hour, took almost three hours as the discussion process to finalize the use of the accumulated resource within the cooperative included of debate between whether the money should be used to spend on road or should the money be dispersed to local farmers who were expecting to receive the loan. The negotiation was thus between farmers who stressed on the actual objective of the cooperative, i.e. to support citrus farmers to mobilize cash, and utilize the cash for agricultural purpose, mainly citrus, and those who suggested that expenditure on road is also a means of supporting farmers, as road connection is necessary to enhance citrus sale. The discussion was held in the month of October, which is the pre-harvest season for citrus, and post-monsoon period. Therefore, citrus farmers were concerned about the condition of road, which could hamper citrus sale if the road is not cleared.

Although all the members in *Junar* cooperative were citrus farmers, as the membership criterion for Junar cooperative included of farmers having more than ten citrus trees, citrus farmers were however not a homogenous group as each farmer had varying degree of market orientation. The pattern in which citrus was sold also differentiates farmers as some farmers relied on local traders for sale, thus securing their sale without much concern for how the trader would transport the citrus. Large citrus owners and citrus traders however were more worried about the means of transport and the condition of road, without which they would not be able to sell the citrus. The debate was thus between large citrus owners/traders and small citrus farmers. Despite lack of agreement between these two groups of farmers in the cooperative, the collected sum of Rs. Sixty thousand was decided to spend on road maintenance, leaving both men and women who belong as small citrus farmers more vulnerable.

> I kept saying that the money should not be used for road. But nobody listens. Our voices are never heard. So why [to] speak? I don't even understand why we are

never heard. It's always like this (Women member from the Cooperative, Small Citrus Farmer).

I was expecting to receive the loan this time. I was planning to buy some chickens or baby goat. But now I can't get the money. They expect us to give the regular savings, but when it comes to receiving the money, there is always some reason. It's for everyone. It's for the good of every one. That's what they keep saying. How can road help us? It's not going to benefit us, it's only going to benefit them (Women member from the Cooperative, Small Citrus Farmer).

Group of women who showed disagreement with the decision to spend the money on road provided their opinion, and negotiated with other members of the cooperative. But after their voices were not listened to, they left the indoor premise where the meeting was being held, and went outside to discontinue their active participation in the meeting. They entered the room only when their name was called for to sign the account book and provide their regular savings in the cooperative. While a group of women were showing their disapproval, few women who belonged to large citrus farmers were comfortably sitting inside discussing about citrus trade. A conversation between Rammaya Ale Magar and a village trader during citrus meeting that occurred every month in Tinkanya included of:

Village trader: I heard that you sold some of your citrus.
Rammaya: [umm]
Village trader: I had asked you to sell some citrus to me. You didn't. I heard you didn't get the right price for it. You sold it for Rs. 7 per piece. I would have given you Rs. 8. I talked to you earlier. But you did not respond. I had told you earlier.
Rammaya: I sold it for good price. I am happy with it.
Village trader: But you didn't get the right price. You could have earned more.
Rammaya: I am fine with what I earned. I have other citrus, which I will sell it later for more. For now, I am fine with what I got.
Village trader: But you should have given it to me.

A detailed conversation with Rammaya after witnessing this conversation included of Rammaya being cautious of new village traders who are trying to enter the citrus trading business. She suggested that 'men, almost every man in the village think that they could become a trader. But not everyone is capable of becoming one, and that such traders often take the goods but never pay back on time'. Rammaya considered reliability of trader more important than the price that she could receive out of the citrus sold. The citrus that she sold to the trader for seven rupees was also a new citrus trader who was her own relative – young trader who was aspiring to become a large-scale trader. She reflected on her experience and articulated that selling citrus was much more than receiving a bulk of money. During each harvest she manages to sell the citrus to large traders, new traders and also the cooperative and new fruit factory in which each farmer has a share. Like Rammaya, most citrus farmers sell citrus to traders, cooperative and fruit factory. Farmers tend to sell certain portion of their harvest to cooperative and fruit factory not for financial gain but because of their social responsibility and perceived long-term gain. Unlike women who refer to their husband to get detail on every account of citrus production and its trade, women who took ownership of citrus were out-spoken about their engagement. As much as they acknowledged their husband's role in citrus, they also affirmed their participation in citrus production. From identifying the plot where citrus can be planted, to the number of citrus to be planted, and providing cash for citrus sapling, some women like Rammaya claimed their active participation from citrus plantation to citrus harvesting.

Unlike other women who raised their voice, women like Rammaya who belonged to large citrus farmer, did not have to show her active participation as men were already advocating for a cause that benefitted her. Rammaya silently listened and preferred not to give her opinion on any matters being discussed in the cooperative meeting. Although Rammaya chose not to speak, her interest was being met, as her interest was similar to that of most male members belonging to large citrus farmers and citrus traders in the cooperative. The voices of group of women who belonged to small citrus farmers were however negligible in the cooperative which was created for the benefit of citrus farmers. Large citrus farmers that included of more men were more influential in the decision-making within the citrus cooperative, than small citrus farmers that had more female representatives.

Mothers Group and Women Empowerment Group (WEG) are two women's group that is actively working to promote women's economic and social status. Women Development Office, Sindhuli, facilitates these groups. Mother's group includes of women who are either pregnant or have children under five years. The main objective of mother's group is to ensure health of mother and children, by providing them with necessary information and facilities in the village regarding nutrition, regular check up, awareness about health and hygiene. Besides these provisions, mother's group is also involved in raising social awareness related to women's issues and in tackling social concerns mainly associated with the problem of domestic violence, gambling and alcoholism. Similarly, WEG also works with similar agenda of raising social awareness and engage in collective action to tackle women's issues for the common goal of women's development. In addition, WEG also supports women's economic empowerment, with major focus on vegetable farming, and recently also *Junar* plantation by providing *Junar* saplings to less affluent women farmers. These two networks of women bring together women of different age and life stages together to create social conditions that work in their favor. These networks provide women with platform to share their problems, and discuss about how their problems could be resolved, either individually or collectively.

Women's lived-experience about their individual participation and collective action through these groups includes of women becoming a force to challenge the existing social norms and practices that negatively affects their lives. Women's collective action to resolve the problem of domestic violence, gambling and alcoholism were most noticeable prior to the festival season during the month of October and November. Women's group advocated for 'no drinking and no gambling rule' and pasted the warning poster in the notice board outside of the VDC office. With support from the authoritative government body including of VDC and WDO, these women's plea was legitimized. Women's group also spread the word of 'no drinking and no gambling rule' through word-of-mouth in their village. Any action against the rule implied monetary charges of Rs 5000. The effort made by women to limit the practice had resulted in reduction in both drinking and gambling in the village. But the effort had resulted in men moving out of the village settlement areas, to form a group and play cards in distant places. The effort had thus resulted in men moving away from the settlement area, but did not have a real impact on the reduction of excessive drinking

and gambling. Such activities were narrated by the respondents as well as observed by the researcher. Group interview with women to understand women's experience of working collectively for the common good of the society included of:

> We have monthly meeting where we discuss about women's lives. We talk about our problems related to home, farming, children, husband, and also politics. […] We try to understand each other's problem. So, when we shared our common problem, we came with these issues of gambling and excessive drinking as a problem. The problem was mostly the men who drink too much. They are the ones to fight, use abusive language and hit their children and wives (Member of Women's group).

> There are few castes where alcohol is necessary in every occasion. So, we couldn't even say that they shouldn't use it. What we are advocating for is not to drink too much. It's ok to use alcohol, its ok for them to drink. But it's not ok when men drink and gamble, and then start troubling other people. […] Everybody easily says that he did this because he was drunk. If somebody acts wrong, then shouldn't we all work together to stop it? (Member of Women's group).

The effort of women's group was however doubly questioned by both men who had to leave their village premise, and by women whose husband returned back to their home late at night. Women's collective action was thereby questioned, and other villagers targeted individual woman who were considered as '*baathi'* or 'smart' for influencing other women to go against their husband. Although, women's effort was to limit men's involvement in drinking and gambling, men's effort to continue their practice resulted in men moving away from village premise to hide away from women. Thus, according to few women, their husbands were more at risk, as they had to walk back home at night from distant places. They felt more at ease when their husbands were drinking and gambling within the village area, in one's own neighborhood. These women complained about the rule imposed by member of the women's group. Some women asserted that those women who could not control their husband had made the rule. Some women even complained that women belonging to non-drinking caste were trying to ruin their business of local liquor. Women's collective action towards

improving women's lives by tackling the problems that women faced in their day-to-day lives thus created more rift between women.

> My husband doesn't even drink much. It's not the problem that I am facing. But most women complain about their husband's drinking habit, which results in men wasting their money. Sometime they even take credit and lose money. So women are suffering in the village. […] I was working to improve the society that we live in. Our children are growing and when they see their elders drinking, fighting, gambling, then they also feel like doing the same. It's a social problem that we have here. But if I am against it, people think I am being *baathi*. […] One day when I went to call my husband, who doesn't even gamble, but he accompanies those men. It's also like a men's gathering. So, when I called my husband, other men, called me with names (using Nepali slang words). It isn't just about husband's abuse, its also about how men treat women. My husband did not say anything when he abused me. He later said its best to avoid conflict (Geeta Thakuri).

Women's experience of working towards improving lives of women hence resulted in more conflict between women as well as men. According to Geeta's experience, men even avoided conflict between men to maintain their social relationship that can be jeopardized by supporting his wife. Maintaining social relationships with men was considered more important by her husband, than overtly supporting the social issue that his wife was advocating for. Rammaya Ale Magar who was a chairperson in WEG shared similar experience:

> I am planning to leave WEG. I had been active in this group for about two years, but now I don't think I should be in the group. People in the village think I am *'baathi'* the smart one, who is brainwashing other women. Not just men, but women also think that I am being *'baathi'.* If I give my suggestion and opinion, they don't like it. […] If I ask women to get engaged in vegetable farming, to work hard, then they think I am wrong. This work does not give any credit. It only ruins relationship (Rammaya Ale Magar, chairperson in WEG).

Rammaya also shared that she did not feel like participating in vegetable farming at first, but after the encouragement from WDO, she started vegetable farming. Despite workload, Rammaya who had initially resisted vegetable farming continued pursuing vegetable farming. Similarly, many women resisted vegetable farming and continued to resist their involvement in vegetable farming. Increase in workload was the major reason behind women's non-involvement in vegetable farming which was considered as a crucial means to enhance women's economic empowerment by the WDO. Unlike Rammaya who got engaged in vegetable farming, and hence started sharing her experience and advocated for vegetable farming among women farmers, many women farmers complained about their increasing workload. The women who advocated for vegetable farming was considered as '*batthi'*, which means smart woman, but within the context, the word is used as a derogatory term. The woman was considered *'batthi'* for being able to manage the time and effort to get engaged in commercial vegetable farming despite day-to-day work overload. Although the term '*batthi'* does not imply negative sense, the meaning of the word as experienced by the women who are called *'batthi',* suggest that these women feel demoralized by the way the term has been used. Women who knew they were being called '*batthi'* in the village, felt like they were being unpopular. On the other hand, those disgruntled women who resisted vegetable farming in commercial way emphasized on their inability to engage themselves in vegetable farming as they were already burdened by household work. These women stressed on the differences between women who are capable and women who are not capable enough to manage their time, work and also the channel in which vegetable can be sold. These women suggested that '*batthi'* women approved of any suggestions made by the outsiders, and tried too hard to satisfy outsiders demand. In both the cases, the term *'batthi'* was used to describe women who actively supported the agenda that the group was advocating for. Since, the group was being facilitated by WDO, some women who did not participate in the group considered the groups' agenda as being influenced by people who don't belong to the village. In their opinion, outsiders who do not fully understand the context in which women's lives are embedded have imposed these activities.

> People these days keep repeating that there is a need for women's development, and women's empowerment. They bring programmes that they think will support women. But how can they support us by increasing our workload. They give us

seeds, and ask us to plant vegetables. They are just increasing our workload. How does growing vegetable improve our lives? I can grow some vegetables for home consumption, but why do I have to focus on more production? In the name of women's development, they say we should increase vegetable production (Suntali Ale Magar).

When there is no market for vegetable, why should we produce vegetables? This area does not have proper market channel for vegetable. But some women say that we women should work together to produce vegetable in large scale, so that we can collectively send the vegetables to the market (Sumana Bishwakarma).

Organizations as well as women's group has promoted vegetable farming as a means towards women's empowerment. Unlike *Junar* production, which was initially considered as a household crop, that eventually became man's domain of agricultural production, women more than men have been encouraged to grow vegetable for home and market production. With the objective of diversifying nutrition through vegetable consumption, vegetable farming has become an additional work of women in the study site. However, irrespective of the motivation and support by the outsiders, there is pre-dominance of male commercial vegetable farmer than female commercial vegetable farmer. Many women especially living closer to the road and market have engaged in commercial farming, while most women show reluctance to scale-up vegetable farming, despite their engagement in production of vegetables for home consumption. Different social network nevertheless mobilize men and women differently. Men's social network in the study site mostly facilitated men to get engaged in citrus production, whereas women's social network encouraged women's participation in vegetable production.

6.3.5 Human Mobility

Travel, mobility and migration are an important factor influencing lives of men and women in the study site. Human movement had been necessary to search for work during agricultural off-season, to sell citrus in the market, to buy *Junar* saplings, to attend trainings, workshops and meetings, and to maintain social networking. Travel has also been necessary to mobilize labourers, as well as to perform wage labour work. Human movement was also the factor that resulted in plantation of *Junar* in the first

place, and also in spreading *Junar* plantation. Human movement either for short travel, or long-term migration, includes of possible ways in which men and women could utilize the opportunity to be mobile either for work, leisure or in social relationship building. Human mobility is hence considered as a resource, which affects men and women differently. Different conditions in life result in human mobility, out of which the institution of marriage in a patriarchal society results in women moving away from their birth home to the home of their husband. Except for few women who had been married within the same locality, most women had to travel from distant places that did not share similar landscape suitable for citrus plantation. Women's mobility after marriage thus resulted in women being introduced to *Junar* plantation for the very first time in their lives. Given that *Junar* was a new crop, many women did not feel comfortable to emphasize on *Junar* plantation. Without support from their husband, many women could not ascertain whether investing in *Junar* plantation was worth their time and effort. Many women thus did not show interest in *Junar* farming during earlier days when *Junar* itself had not been established as a high value cash crop.

Certainty of women's mobility after marriage also affected involvement of women born in the study site. Daughters were engaged in agricultural works but few citrus related works that needed skill was not taught to daughters. While most large citrus farmers hired labourers rather than utilizing their own family labour (sons and daughters), citrus nursery owners mostly transferred their skills to sons, but not their daughters. One of the citrus nursery owners also emphasized on encouraging his son to study agricultural science, but was liberal in terms of his daughters' choice to study any subject that she preferred. Most citrus farmers also tried to engage their sons in citrus farming, as sons are the ones to inherit the citrus orchard. The discussion on training the daughters and/or daughter-in-law was also crucial during one of the informal group discussions. Women as well as men emphasized on providing skill to women that they could take wherever they go after marriage, which included of tailoring, knitting, pottery-making, while daughter-in-law could be provided with agricultural training that was suitable in the study site. Given the certainty of daughter's mobility, investing in daughters were thus not considered as a future resource in citrus farming, probably also in citrus trading where young males were mobilized but not young females. Teaching traditional agricultural skill to daughters was nevertheless deemed necessary, as the skill of traditional agriculture is more commonly applied than the skill of citrus farming.

The importance of mobility has also been mentioned as a resource that supports livelihood diversification. People holding multiple occupations either in agriculture or non-agriculture sector usually travel from one place to the other, within the village or beyond. With increasing road connectivity and the availability of the means of personal and public transportation, both men and women in the study site have an opportunity for day-to-day travel. Men exclusively hold the means of personal transportation including of motorbikes. The number of households owning motorbikes is minimal, with most people relying on public transportation vehicles, including of jeep, commonly referred to as Sumo and Bolero. Availability of personal vehicle has resulted in men being able to travel at any time, without having to depend upon the timing of public transportation, which is often unreliable. Women too travel with men in motorbikes, but given that women don't have the skill of driving a motorbike, women are dependent on men to use the personal means of travel. Most people, including of both men and women, either walk long distances or use public transportation. Travel through any means nevertheless requires time. Since travel requires time, understanding how the men and women spend their day-to-day time in agriculture is essential, as travel implies trade-off between activities that one values as important. Such activities may include of household work, agricultural work, socialization and networking, cultural events, community work, taking care of children and elderly, attending meetings and workshops, and so on.

Trade-off related with mobility includes of decision-making between at least two available alternative work arrangements. Given the socio-cultural expectation from women, mostly women choose child care and elderly care, along with household work of cooking and cleaning, over other alternative works. Exception of women leaving behind their infant to attend training in the case of Maya Kumari Thakuri, and some women carrying their infants to the workshop shows possible ways in which women have tried to participate in activities that they value. Some women have also participated in market activity to sell citrus by leaving behind their children to the care of mother-in-laws. Availability of another women in the household have sometimes supported women's mobility, as availability of another women can result in transfer of women's work to another women. Yet, the availability of man in the household may not result in efficient transfer of work that is socio-culturally considered as women's work. The current social arrangement has resulted in gendered division of work, where the

household responsibilities of women mostly includes of cooking, dish cleaning, washing clothes, preparing feed and fodder, milking cattle, dung management, carrying manure, vegetable farming, managing water for daily use, and the use of cow dung paste to clean the house. Although men in most households contributed their labour in almost all of the mentioned household activities performed by women, men were found to be leaving these works more easily than that of women whenever there was an opportunity to participate in alternative work. On the other hand, even when women had the ability to leave the household sphere of work, they were constantly worrying about the conditions at home. As asserted by Ranjana Koirala, 'If I leave home for a few days, then there will be chaos'. In her experience of leaving home for couple of days, the work that was left unattended was the work of cleaning the cowshed. Even when she was living with her children in Sindhuli municipality, she had to travel back to the village to ensure time-to-time cleanliness of the cowshed. Similarly, Maya Kumari Thakuri also pointed towards her husbands' inefficiency in taking care of the livestock. Although Maya had the possibility to live in Sindhuli municipality and engage herself in Citrus Cooperative, she chose to live in rural household. Similarly, Suku Maya Ale Magar also stressed about her responsibility of cattle rearing and manure management:

> *Dai* proposed to live in Sindhuli, with our children. But I myself decided not to. What can I do in Sindhuli? Besides sitting idle, and getting bored watching Television […] I go with Dai, and live for few days with our daughters. They keep on asking me to come live with them so that I can help them in cooking. But whenever I am there, I am more worried about home. I am constantly thinking about whether the buffaloes have been fed or not, whether they have been milked or not. The only thing that I know well is to cut grass, so I keep thinking about cutting grass. If I don't do it for a day then I feel incomplete. Now we don't have as much cattle as we used to before. But one cattle is important [...] We are farmers so we need cattle manure. Fertilizer that we get from the market is not good. But if I leave then who will look after the cattle? And manure is needed even for Junar. Without proper manure the fruits will not grow properly, then how can we sustain? (Suku Maya Ale Magar).

Many women suggested that the daily work of collecting fodder, watering the livestock, cleaning the cowshed, milking the cows and buffaloes were their

responsibility. The expression '*maile nagare kosle garne?'*, 'if I don't do it, then who will?', was often repeated by women. Women emphasized that they don't have anybody else to hand over their work, like men do. In many cases, replacement for women's agricultural work at household level was possible because of their mother-in-law and/or father-in-law in the past. However, at present, men easily leave day-to-day agricultural work, completely trusting their wives to look after household and agricultural work, but when women have to make choices and leave behind their responsibilities and obligations, it is more challenging.

Day-to-day occupation of male in the past included of tending large animals. Denoted by the term *'gothalo',* herding of animals was considered as a male occupation. When women performed activities associated with food preparation, men ensured that the livestock were provided with water and better pastures. Except for few occupational *gothalos* who worked for others, most men themselves performed most of the household activities associated with livestock including of cutting grass, which at present is mostly done by women. Women often assisted men in collecting fodder. Otherwise, women's role in livestock was limited to that of milking and cleaning the shed by removing the cow dung. Livestock, at present, is however raised within the periphery of one's own household, with some families who are seen with goats and young cattle that are left to graze around in the open pasture land. With limited communal pasture land, cultivation of fodder and forage crop on one's own land is also practiced. Usually, grass is available in and around nearby areas during monsoon, but during dry season, cereal crop residues and fodder trees, leaves and shrubs from the forest are used. Given the diminishing number of large cattle, female farmers, and often times, young girls and boys, were seen herding animals. Occupational *gothalos* were however not found in the study area. At present, there has been a change in agricultural practice with less focus on livestock than in the past. The change in the agricultural practice has resulted in changes in gender relations related to livestock practices, with shift in responsibilities of livestock management from men to women. Many women also suggested that their husbands are not involved in tending livestock like their father-in-law did. Changes in the engagement of male member of the household in day-to-day livestock management is interpreted as follows:

> Carrying [fetching] manure [from animal shed to farm] is considered as the dirtiest job in agriculture. When you clean the cowshed or when you carry the manure, then you cannot expect to have a clean hand. Your clothes are dirty, and your shoes are dirty. […] If you have to keep moving from one place to another then you cannot engage in these works. My husband says that he can do any work in the house, but not this. Carrying load and manure is the last of his priority (Ranjana Koirala).

> When you have to work with livestock on a daily basis, you cannot wear clean clothes. Even if you wear clean clothes, your clothes will be dirty soon. We don't have the privilege to wear nice clothes. It's only during festival, that we manage to keep ourselves clean. But you can see men wearing new clothes, and clean clothes. They wear nice clothes because they have to travel long distance. Sometimes they have meetings, sometimes training; recently he also went for exposure visit to Darjeeling (Suntali Thapa).

Trade-off between participation in off-farm and non-agricultural work over day-to-day engagement in livestock management has been suggested as the major reason for non-participation of male in livestock care. According to women farmers, livestock care that requires carrying and cleaning cow-dung is considered as the dirtiest job. Men thus escape from performing activities that ruin their clothes, which according to women farmers is clean and new as compared to their own clothes. Men's commitment for other works including of community work, attending trainings, workshops and meetings, and social networking in distant places is considered as a reason for men's reluctance to engage in dirty work of livestock care. According to many women, their husbands are constantly on the move. *'Hid-dul garirakhnu huncha'* is a phrase often used to suggest their husbands' circular mobility — physical movement from one place to another, mostly from their village to Sindhuli municipality. Their husband's involvement in local citrus cooperative, district level citrus cooperative association and their extended social networks were considered as a major reason for their mobility.

> Livestock is not like trees or crops, as it is more living than any other agricultural product. They need to be taken care of like humans. Giving food, water and time-to-time cleanliness is as necessary as that for humans (Ranjana Koirala).

The trade-off between livestock care and participation in other available opportunities shows different choices made by men and women. Trade-off between livestock related work resulted in men leaving behind the work to participate in other available alternative opportunities, whereas even those women who had the opportunity to leave, decided to chose livestock care over other alternatives. Women rationalized that most work in agriculture could be preponed or postponed for at least few days, but day-today work of feeding livestock, and taking care of livestock cannot be delayed. Daily care of livestock is more important than everyday nurturing of other crops. Women have nevertheless influenced household decision-making regarding the reduction of the number of large livestock. Many women shared that they convinced their husband as well as their in-laws to reduce the number of cows and buffaloes. However, since livestock not only provides daily nutrition but also manure necessary for other agricultural crop production, livestock is considered as an important resource in a mixed farming system.

6.4 Conclusion

At present, the rural agrarian space constitutes of various employment opportunities and possibilities of diversification of livelihood. The expansion of market and road connectivity had further resulted in availability of citrus related employment opportunities. In a multi-functional agrarian context, the expansion of opportunities had resulted in men and women holding multiple occupations including of various agricultural and non-agricultural professions. But only one-fourth of the total multiple occupation holding individuals were female farmers. Whereas, men's occupational categories were more diverse, with absolute representation of men as citrus traders, citrus nursery owner, and citrus facilitators. Women's representation in citrus, on the other hand, was limited to that of a large citrus farmer, wage labourer in citrus related work, and household labourer under the supervision of male citrus farmer and male nursery owner. Women's role in citrus was mostly found to be within the confines of the households than in the broader employment opportunities available within the study site. Although women's role in citrus was mainly confined to that of household level than in the broader employment categories, women's involvement in the intra-household decision-making in the four-production domain of agriculture also showed women's

relatively less involvement in citrus related decision-making. Female to male ratio in decision-making showed wide gap between male and female participation in citrus related decision-making, while women's participation in livestock, cereal and vegetables was considerably better.

Differences in the involvement of men and women in the decision-making of each agricultural domain is a result of the degree of market orientation of crops and livestock. With citrus crop having the highest market value over other crop and livestock, gender-based differences in decision-making participation in a mixed-farming system, presents gender hierarchy in decision-making within the multi-functional agriculture. Women's participation in decision-making is lower in households that have more focus on citrus production than those with less citrus production. Except for few cases where women had complete control over the decision-making in commercial vegetable farming, the degree of market orientation of each crop has resulted in men having the decision-making power in vegetable farming in most households. Nevertheless, women's participation in decision-making in vegetable farming is higher than that of men, given that vegetable is still not produced with high degree of market-orientation, but is limited to household consumption and sale of surplus production.

Irrespective of land ownership or land titling, the provision of patrilineal land distribution and land inheritance rights were found to be influencing women's access to land, as well as its use and control. Similar provision of inheritance of citrus trees benefitted men farmers over female farmers, as men could inherit the citrus trees planted by their parents. Although women too had access to the inherited citrus trees due to their married status, inability of few women to contribute their labour in citrus production often limited women's control over the use of income from inherited citrus sale. Inherited citrus tree resulted in men having the ability to earn high income from agriculture, thus attracting men to engage in citrus farming by scaling up the existing citrus orchard. Large-scale inheritance of citrus mostly resulted in men's control over the citrus orchard, restraining their wife's participation in citrus only in terms of labour contribution. Women's control over the land use decision-making was however observed among few women, especially belonging to early adopters of citrus. Although decision-making on land use at present also includes of women being actively engaged in the decision-making of land transition from cereal to citrus crop, the present context

shows friendlier or enabling environment in which the transition could take place, as citrus crop has already been established as a high value cash crop. At one point of time, the process of decision-making on land use for citrus crop production included of intra-household negotiation and conflict in the choice between cultivation of food crop or cash crop. The differences in choice was not always a result of gender-based inequality but the condition of food insecurity that resulted in decision-making process between individuals within the household to choose food crop over cash crop. However, there were several cases where the gender-based norms and practices, and women's position within the social arrangement of a household was apparent during the process of decision-making on land use. Rather than who made the decision, the question of who initiated the discussion and what factors influenced the negotiation process showed how women were positioned within the decision-making process. Women's ability to argue in favor of citrus plantation has been presented as a result of women's fall back position, and their ability to use alternative means of securing food, especially from the support of their *maiti*. On the other hand, those women who had initiated the conversation, but did not have enough alternative resource pool were more at risk than men who had initiated the conversation. In the extreme end of the conflict, men could in fact claim use and control of property including of land and house, where by women could only affirm their claim to the land through their marital status with their husband.

Labour as a resource presents gendered pattern of the value of labour, with men's contribution of labour being valued differently than that of women's in each production domain of agriculture. Gender inequality in labour use is stark in cereal crop production where few works conducted by male labour demands three to four female labour days for one day of male labour. Recognition of the unequal labour arrangement in the study site has further resulted in some women and some men with less male member in the household to choose citrus crop over cereal crop production as a means to reduce workload during cereal crop production and to search for alternative means of livelihood besides traditional farming. Gender based-inequalities in labour use can be interpreted as having the power to reinforce and intensify the existing gender roles, with women being encouraged to participate in traditional work, while mostly men being integrated into the new works in the labour market created by citrus. Few women had, however, entered the wage labour market in citrus, as a result of access to training and information regarding labour demand to perform skilled work in citrus such as application of Bordeaux paste,

cutting, trimming and pruning of citrus. Creation of skilled labourers had nevertheless marginalized other women labourers who performed traditional work, thus confining their labour contribution in less lucrative work.

Income dimension of empowerment presents how women use and control income. Comparing the way in which women earn, and the way they provide meaning to the amount of income and expenditure, income as a resource has been presented as having the ability to either challenge or conform to the existing gender role of men as a provider of the household. Some women have actively participated in income generating opportunities from citrus as well as vegetable farming, while some women show reluctance to engage in commercial vegetable farming with the fear that the visibility of their earning might result in less control over their income. These women express unwillingness to provide additional work in commercial vegetable farming, as they expect their husband who earns significant income from citrus sale to contribute in household expenditure. These women share anxiety over their husband's demand to share household expenditure if their earning is noticeable. These women conform to the existing gender role of men as a provider of the household, but at the same time, question the way in which women's control over their own income and saving weakens relative to that of men.

Social networks of men and women included of groups, platforms, and shared spaces for collaboration to reach common goal or to fulfill common purpose. The goal of citrus market development was found to be facilitated mostly by men citrus farmers, with little input from women citrus farmers. Given the involvement of men's network in citrus, citrus related occupations and wage-earning opportunities were mostly influenced by men mobilizing men and boys, and men mobilizing women living nearby their own location. Women's role in the network of citrus development was limited to that of representation in working committee and executive committee of citrus cooperatives, with only occasional participation in meetings, and workshops at district level. Another network included of women only groups that worked with the purpose of improving women's lives. Despite women working for the cause of women issues, women's network was creating more rifts between women who took leadership role and those for whom the work was actually being conducted. Women's collective action was often interpreted as individualized effort made by *'baathi'* women, whereby men and women

targeted individual women who worked hard to fulfill the agenda of the group, mainly related to alcoholism and gambling induced domestic violence, and scaling up of vegetable farming.

The lived experience of women farmers showed that the social arrangement within the agricultural work promoted, facilitated and encouraged men's mobility in one hand, and on the other hindered women's mobility to participate in activities other than agricultural work at home and alternative opportunities available within the village. While men were relatively free from livestock related day-to-day tasks, women were found to be more responsible towards livestock care. Obligation towards livestock care resulted in women being engaged in cutting grass, collection of fodder, watering the livestock, cleaning the animal shed, and so on, while men could easily free themselves from day-to-day agricultural work of livestock care. Men's ability to secure flexible time from agriculture has resulted in their ability to be mobile and participate in multiple occupation opportunities and prospects of social networking.

Depending upon the pattern in which data from the field emerged to analyze resource dimension of empowerment, more emphasis has been given to respective production domain of agriculture, without equal focus on each domain of agricultural production. Access, use and control over five resources — land, labour, income, social network, and human mobility have been presented by highlighting gender-based norms and practices, and social arrangement that influenced choice and values of each production domain. Women's agency or their involvement in the process of decision-making in regard to the resource in question shows how women's involvement in each four-production domain of agriculture shape gender status quo, either by reinforcing existing gender roles or by challenging it.

CHAPTER SEVEN

7. CONCLUSION

This chapter highlights some of the major debates and arguments regarding the three inter-related phenomena under study by presenting both empirical and conceptual discussions. It presents an overall understanding of gender-based inequalities in a multi-functional agriculture that is induced as a result of change in productive and non-productive sphere within contemporary agricultural context. Gender-based inequalities mainly related to labour use, decision-making, and occupational participation in four-production domain of agriculture, i.e. cereal, citrus, livestock, and vegetable, is presented as the major findings of the study. The phenomenon of women empowerment is further presented under the light of decision-making regarding, the access, use, and control over the five resource domains, i.e. land, labour, income, social network, and human mobility. Using conceptual debates and methodological arguments to comprehend feminization and empowerment in contemporary agricultural transition characterized by multi-functional values, this chapter presents major findings and discussions of the study. It also dwells upon some of the limitations of the study and suggests some future research areas.

7.1 Discussions and Summary of Major Findings

7.1.1 Agricultural Transition

'Transition' as presented in the current study signifies 'change' in agriculture, thus the study focuses on contemporary agricultural change in the study site as a context for further exploring the phenomenon of feminization and women's empowerment in agriculture. The contemporary agricultural change is characterized by multi-functional transition model that is best understood by the Deleuzian transition model that emphasizes on the structure-agency inconsistency in agrarian transition with an emphasis on political economy on one hand, and individual decision-making as agency on the other. The spectrum of decision-making regarding productivism and non-productivism by farm households as suggested by Wilson (2007), provides a space in

which farmers choose to bring about changes in their lives, in agricultural landscapes, and more broadly in the rural area in which they live. Agricultural multi-functionality characterized in the study site is associated with the choices of farmers to incorporate multiple values in agricultural production. Such functions include activities beyond the direct production of food and fiber, and beyond increasing the productivity of agricultural product as the sole function of farmers. The study presents a case of farmers' effort to enhance crop productivity, mostly cereal at one point of time, and more recently citrus by many farmers. Although farmers were engaged in citrus production, they still produced cereal crops such as maize and millet in the uplands, and paddy mostly in the lowlands. The practice of inter-cropping with cereal and citrus shows a combination of transition whereby farmers value both crops, but for differing functions, namely cereal for subsistence food consumption, and citrus for income-generation. Production of vegetable as a multi-crop in the same land is also found to have varying functions, with legumes being planted to enhance soil nutrients mainly along side cereal crops, and seasonal vegetables being produced mostly for food and often cash, especially in areas closer to the market and with proper road connectivity. Changes in livestock on the other hand is found to be in terms of decreasing number of large livestock, with increasing focus on small livestock and poultry. Livestock mainly serves the purpose of dietary provision, supplementary cash and fertilizer (through animal manure) to enhance soil nutrient. Multi-functionality of agriculture with inter-relationships between different domains of agricultural production was thus found to exist in the study area.

In addition, multiple functions of agriculture relate to food, nutrition, cash, animal feed, liquor-making as well as with the aspects of cultural significance, soil nutrient, visual landscape, seed storage for the future, organic manure as fertilizer, and use of animals as draught animals. Although the concept of multi-functional agriculture includes much broader issues on environment conservation, sustainability, agro-tourism, occupational diversification, the study limits its focus on functions of four domains of production, and how these domains ultimately enhance sustenance of agricultural productivity by valuing non-productive functions. Furthermore, the study has also focused on how these four-domains of production have enhanced occupational diversification in the study area. Thus, multi-functional agriculture is used as a concept for setting the context of the study, by also using political economy of *Junar* production

as a structural basis on which decision-making by farmers to plant citrus were influenced at changing time and space. As argued by Byres (1995), Wilson (2007) and many other scholars, the multi-functional agricultural transition context has been considered essential in the study, as it has helped in understanding farmers' behavior, their choices, and decisions based on multiple pathways in which farmers give value to different agricultural activities. Rather than considering food crop and cash crop as binary categories with two values associated with agriculture, one for food and another for cash, the study has used a postmodern perspective on agricultural transition, and has instead argued that even food crops such as paddy, maize and millet may have productivist orientation regardless of their limited integration into the market economy. Although cash-oriented farming, mainly associated with citrus farming, has brought about contemporary agricultural change, the broader agricultural context, which also includes cereal, livestock and more recently vegetables, is formulated as domains of agricultural production that has a distinct nature of feminization that has a distinct nature of feminization.

Despite multi-functional nature of agricultural transition, productivity enhancing transition characterized by economic growth and capital accumulation is still the most significant aspect of transition. The study site, which consists of dense citrus farming areas, may be interpreted as having a new formation of class structure based on accumulation of citrus production as a means of production. Two distinct categories of farmers, early adopters of citrus and late adopters of citrus, and its further categories into those practicing exchange labour and those who have left behind traditional labour pooling but have instead promoted wage labour group, are closely linked with the formation of these categories of farmers based on citrus production. Large citrus producers have become the providers of wage labour opportunities that employ large number of men and women during different phases of citrus related work. Citrus farming, which mainly serves the purpose of income generation, has further resulted in differences in labour use, decision-making, and occupational participation in agriculture.

7.1.2 Feminization of Agriculture

The study has mainly focused on two aspects of feminization of agriculture. First is the nature of feminization, and second, the conditions that promote or hinder women's

entry and integration into food crop and cash crop. Rather than the incidence or increasing number of women in agriculture (Bieri, 2014), both of these research aspects seek to address 'meaning-making' of the term feminization by focusing on women's experiences. Women's lived experience has been considered as the evidence to comprehend the phenomenon under study. Survey data on the other hand has provided a glimpse of the pattern in which men and women are involved in different types of agricultural production. Percentage and ratio of men and women's involvement in different agricultural production domain and labour use has been used to comprehend feminization of agriculture from a numerical perspective. Labour arrangement at household level shows women domination in livestock and vegetable farming, with less difference in participation by male and female member of the household in cereal and citrus crop production. Further analysis of feminization has been conducted by gathering detailed information on task-based division of labour, along with the meaning associated with lived-experiences of women in agriculture. The study shows that the tasks of ploughing and other activities associated with land preparation mostly for cereal crop production that is conducted by men as *hali, lathey or baosey* and as *ropar* by women, are the only socio-culturally distinct roles of men and women in agriculture. The task-based gendered division of labour however presents few works distinctly conducted by men and women. Women were mostly involved in weeding, carrying manure and manure application in all production domains. Men on the other hand were engaged in works that needed strength such as digging pits, or work that required more skill and knowledge such as preparation of Bordeaux paste, in case of citrus farming. Men were also mostly engaged in tending large male animals such as oxen and bulls; with exclusive role of men in livestock management found especially during ploughing, and breeding operation, with day-to-day task of feeding, watering and other activities shared by both men and women.

The practice of exchange labour is found to be significant in cereal crop production, with high female to male ratio in exchange labour practice. Such practice of reciprocal labour is however not present in households under category 1 (mostly large citrus farmers, and early adopters of citrus). From gender perspective, the practice of exchange labour is exploitative in nature. The practice of exchange labour had two gender implications: i) Exchange labour arrangements in most of the study sites had misconstructed women's surplus labour as compared to that of men, as a result of either

double or sometimes three or four-fold labour provision for women in return for one man labour; ii) Work of male household member in cereal crop was significant in determining household women's labour as part of labour pooling, since few women also did not perform exchange labour, as their husband's and other male family member's labour as *hali, lathey, baosey*, was enough to get women labourers needed to work in their plot. Thus, the practice of exchange labour benefitted those women who had more men at home, but disfavored those who did not.

Wage labour practice is another aspect of labour arrangement that has been influenced by contemporary agricultural change. Huge number of hired labourers have been mobilized in citrus crop than in other domains of agricultural production. While the practice of exchange labour help rural farm households to meet labour demand in cereal crop, non-existence of such practice in citrus production has resulted in large number of hired labourers. Due to cash-oriented nature of citrus production, and farmers' capability to earn high-income, the practice of exchange labour is not promoted in citrus activities. Comparison of female to male ratio in cereal and citrus shows more men labourers being mobilized in citrus than in cereal, although both sectors have more women labourers than men. While women labourers in both cereal and citrus are local labourers coming from nearby areas, many men labourers, especially during citrus harvest season are mobilized by citrus traders from other areas. In addition, there has been a formation of new wage-earning households, which has been created due to high earning potential in citrus harvest and post-harvest activities. Households that would otherwise limit their labour at household level and exchange labour are now providing wage labour. Attracted by the high wage, few women have been eager to participate in citrus activities, but their participation is often hindered due to their other responsibilities at household level. Since the timing for harvest and post-harvest of paddy and millet coincides with that of harvest and post-harvest activity of citrus, many women have not been able to benefit from the opportunity to earn higher wage available in the citrus market.

7.1.3 Women Empowerment in Agriculture

Given the complexities surrounding operationalization of the term 'empowerment', the study has built the argument regarding women's empowerment in agriculture by borrowing the conceptual and methodological aspects of empowerment from Kabeer (2001). According to Kabeer, the indicators of empowerment should

merely indicate the direction of change rather than provide an accurate measurement of it. Kabeer's arguments suggest that the direction of change from women's empowerment perspective should include a change towards creating equal access and equal opportunities that was previously denied to them. In line with Kabeer's notion of empowerment, the study considers empowerment as 'a process whereby women use agency over resources that they value, to transform existing gender norms, practices, and social arrangement in agriculture, that creates gender hierarchy, and hence results in gender inequality'.

Focusing on the phenomenon of agricultural transition as multi-functional, the study first concludes that the occupational diversification and employment opportunities in agriculture has not been able to bring women in the forefront of agricultural development. Most of the agriculture related occupations and employment opportunities such as citrus trader, citrus nursery owner, citrus facilitator, citrus grafter, and mill operator, are exclusively held by men. Three factors, namely, capital investment, skill-oriented work, and mobility or travel, are the main features of these employment opportunities. Besides these factors, availability of trainings to men in case of citrus nursery owner, citrus grafter and citrus facilitator are other reasons for male integration into these occupations. Group formation is another aspect that has supported local men to turn into local citrus traders by bypassing outside traders. Women's narratives however do not provide enough evidences on why and how they are not involved in certain employment activities, as they are mostly associated with intra-household decision-making. What is clear, however, is that availability of opportunities along with personal choice to participate in a multi-functional agrarian context has resulted in women using their agency to use the resources that they value, namely, land, labour, income, social network and human mobility. The study builds on the argument that women are empowered when they are able to choose resources that they value, and only when such resource choice is not a result of adaptive preferences. If so, then such adaptive preferences presents a social structure in which women are making the choice, thus highlighting on the gender based norms and practices that limit their ability to freely choose and participate in wider activities available in the rural agrarian space. Thus, the underlying objective of the study has been to unravel practices that stem out of gender biased norms and values. 'Why do women choose what they choose?' is a question that has been constantly asked throughout the research to comprehend

inequality versus differences in choices. Since not every choice or every outcome have gender implications i.e. situation suggesting power relations that influence women's behavior, action, motives in certain ways especially under patriarchal norms, the study has carefully presented cases that show women's experiences of empowerment and disempowerment.

Women's narratives primarily suggest that the decision to plant or not to plant citrus is a critical incident in one's life. The negotiation, conflict and final outcome of the process of decision-making highlight how women's ability to use of, access and control over land is promoted or curtailed. Irrespective of gender, both male and female who voiced to plant citrus during food insufficiency debate at household level led to greater conflict within the household (also see Kabeer, 2001). However, irrespective of the conflict, men stood by their decisions to plant citrus, while except for very few women, most women avoided conflict, and in many cases, women did not voice their opinion. Women mostly internalized their own subordinate status by rationalizing that the 'land' and 'inherited citrus' belong to their husband through patriarchal property distribution, but they themselves have limited say in decisions regarding land use, especially for citrus plantation. However, such practice of extreme conflict is changing, as people in the study site are found to be more open to citrus farming. Nevertheless, men still have more decision-making power regarding citrus farming than in other production domain of agriculture.

As presented in the feminization debate, women's concentration in labour use suggests more female involvement in all four domains of production at household level. However, when female to male ratio in labour force participation is compared, there is less difference in participation by men in citrus farming. Men's higher participation in citrus farming as opposed to cereal, vegetable and livestock can be interpreted as men occupying the new market-oriented space in agriculture. Women, on the other hand, provide their labour in citrus, and carry on more responsibility in production of vegetable, livestock, and cereal. In case of exchange labour that is predominant in cereal crop production, men are found to be moving out of exchange labour practice as they are found to hold multiple occupations than female. In addition, men are hired in case of unavailability of household men members to provide exchange labour. However, in a situation where hired male labourers are not mobilized, women have to bear additional burden of providing exchange labour that benefit men over women in traditional labour

exchange practice. Women may be regarded as disempowered when they are concentrated in work that are considered as least preferred work by men, especially work such as weeding, mulching, and carrying manure fertilizer. Women nevertheless still value such work as they feel obliged to perform these duties, as they don't have anybody else to handover the work at household realm. Another such work is regarding livestock care. Despite diversity among women based on labour use practice, commonalities in each case included of livestock responsibility. Although livestock care has multi-functional value such as providing daily diet, using manure for fertilizer, enhancing and maintaining soil nutrient, the current social arrangement has resulted in mostly women conducting such activities. Such intra-household agricultural work that is arranged based on gender based social norms is what Chant (2010) has termed as the 'feminization of responsibility and obligations'

Income dimension of empowerment not only shows how income provides economic empowerment to women, and ability to exercise and assert their choices, but also points to how women influence income earning opportunities based on their household living arrangement. In households that provide enough space for women to utilize their income in what they value, women tend to be more active in pursing economic activities, but in households where women feel confined to freely use the income from their work tend to create and set boundaries in accumulation of income, even though there were possibilities to enhance income generation. The reluctance shown by these women to increase income suggests two things: i) Higher share of income equals higher share of contribution in household expenditure. i.e. higher earning by women through their own hard work in vegetable farming, may result in women having to contribute more in household expenditure; and ii) Women are reluctant to share their income from vegetable farming where the workload is hardly shared by men especially when men's share of income from citrus is much higher; resulting in women's expectation of men to take the burden of household expenditure. Further, men might be able to save their income as a result of women's contribution, but as argued by women, women's saving would be lower; and men's role of providing for the family would be reduced, making men more capable of using the extra money for what he values rather than for household benefit. These women suggest the capability to utilize the income as they value and the necessity of male members of the family to be more materially responsible towards family obligations as crucial more than the actual amount of income

earned by themselves. The lived experiences of these women also suggests their ability to free themselves from time consuming labour work by partially shifting from cereal crop production to citrus crop or even vegetable farming as empowering. Women's ability to hire labour, or leave exchange labour practice in order to utilize their time to engage in something that they value demonstrate women's struggle to cope up with the existing agricultural responsibilities and to create space for both agricultural and non-agricultural responsibilities that they value.

Social network and human mobility dimensions of empowerment draw attention to the necessity of trade off between various activities that are considered valuable either at individual, household or community level. The study argues that gender mobility is being affected by day-to-day agricultural engagement, and is further influencing women's social network and participation. Women's work burden is an aspect that has affected their participation in social networking and income generating activities, such as market-oriented vegetable farming or wage employment opportunities. As claimed by number of women, the emphasis to promote vegetable farming as a means of women's empowerment can be contested if women's existing work burden is not shared or reduced. Participation, especially in agriculture related social networking platforms such as *Junar* cooperatives, DCCI, DADO, and workshops arranged by such organizations and establishment of *Junar* facilitators, show more male participation than female. Although women seem to be encouraged to participate due to the contemporary women's movement that has resulted in enabling environment for women's participation, the study shows that unlike men, women are still not able to fully participate in many wider opportunities that are available. Women's limited participation is presented as a result of their day-to-day responsibilities, including domestic work, childcare and more importantly their work related with daily livestock care. Moreover, in case of participation in vegetable farming, while some women consider vegetable farming as life changing, some women's narratives question the social structure in which they are encouraged to increase vegetable production for market purpose. Irrespective of the opportunity to earn through vegetable farming, women problematize work burden and suggest unavailability of time to engage in income generating work. Women farmers' group facilitated by WDO to produce vegetables, and mostly men farmers being facilitated by citrus cooperatives present structural gender-based mobilization that sustains gender hierarchy within agrarian context.

7.2 Contribution to the Existing Debate

The review of literature in Chapter Two had proposed two ways in which feminization and empowerment could be understood: i) The increased number of women in certain sector is considered as feminization, and such type of feminization is often placed as bad quality work as interpreted within the broader context (Jütting et al., 2010). However, given the context in which the study is being conducted, despite large number of women, the work may not be considered as of bad quality (McMurry, 1992); and ii) The increased number of women in better positions such as that of decision-making as a proxy for empowerment and managerial feminization may provide a partial understanding of empowerment, if the aspect of decision-making is not comprehended within the larger domain of gender hierarchy that places women and men within a broader agricultural space that is constantly changing (Gartaula et al., 2010). These two propositions suggest that if feminization in one or more aspects of agriculture is a result of women subordination, then the concept of empowerment provides better understanding of both feminization as well as conditions in which women are situated within multi-functional agricultural structure. Building on these arguments, the current study has used empowerment concept to understand the deeply embedded gender hierarchies in a multi-functional agriculture.

Primarily, the study concludes that the broader agricultural space in the study site includes of a moderately multi-functional agriculture with households having varying degrees of market orientation for each crop and livestock. In general, the agricultural context includes farmers' decision to cultivate cereal crop over *Junar* and *Junar* over cereal, large-scale and intensive vegetable farming in areas with better access to the road and market, and decreasing number of large livestock. Households tend to fluctuate their market orientation for crops and livestock depending upon the market value, geographical location and market proximity. Diversity of study area, based on localities closer to the market and connectivity with the road, along with variation in household's integration into citrus, cereal, vegetable and livestock shows multitude of realities in which women's life has been embedded. Women's lives have been largely understood based on labour arrangement in four domains of agricultural production and by segregating women into three categories of households. The categories of households

show women who don't practice exchange labour anymore [belong to Household Category 1: mostly large citrus farmers who are also early adopters of citrus], women who practice exchange labour but do not work as wage labourers [belong to household Category 2], and women who practice exchange labour and also work as wage labourers [belong to household Category 3: mostly late adopters of citrus]. These categories of households highlight how different women are benefitting from the changing agricultural context, with some working as large-scale citrus farmers who hire [both men and women] labourers to work in their field, while some women providing their labour in the agricultural labour market by managing time from their household agriculture work and other responsibilities.

From a broader agricultural context, although the study may conclude that there is feminization in the decision-making within agriculture, irrespective of male out-migration as pointed out by many studies (Gartaula et al, 2010; Adhikari and Hobley, 2011), it shows less decision-making in citrus production by women, especially from Household Category 1; implying that larger the orchard, higher is the decision-making role of men. Even at household level, higher the market orientation of citrus, more distinct is the role of men and women, but as the market orientation diminishes the work conducted by men and women is more blurred, with less structured gender-based division of labour. Similar situation exists in the case of vegetable farming. Although vegetable is not produced with high market orientation, women sometimes fear men interference in their income from vegetable, if the income earned is highly noticeable. The study thus shows that numerical presence of women alone does not provide an understanding towards women's status in larger societal context. Meaning making of the agricultural context through women's subjective reality further shows how women's practical need of income generation, and market participation is being encouraged by the current structure through vegetable farming irrespective of whether all women themselves want to be part of such programs or not. On the other hand, despite women's desire to be a part of agricultural labourer during harvest and post-harvesting of citrus crop, most women are unable to participate due to their pre-occupation in household agricultural activities related with cereal crop harvest. Multi-functionality of agriculture could then be compared to that of diverse production profile (Malapit et al., 2015) that increases diverse diet within the household but nevertheless affects labour use and work intensity of women's work. Such varied lived-experiences of women suggest the need to

provide attention to the strategic gender need of reducing agricultural work related distress, encourage women's participation in mostly men involved agricultural crop (citrus) [depending upon whether women value such work or not, along with identifying what constraints such values], and to redistribute the day-to-day agricultural and household work. It is within the understanding of the multitude reality associated with the concept of value, that the present study has provided arguments related with what women truly value, and what women value due to their existing social arrangement. By using value judgement to comprehend the concept of empowerment, with its three dimensions — resources, agency and achievement, the current study has contributed to the understanding of how women's status within the larger agricultural context is maintained and transformed to either create gender hierarchy or to move towards gender equal society.

7.3 Way Forward

The study shows complex nature of gender hierarchies in an equally complex agricultural context characterized by multi-functionality. The argument that the researcher makes throughout the dissertation is not on what empowers women in agriculture, nor is it to stress blatantly that women's engagement in citrus farming or women's control over income from citrus empowers them. Neither does the study suggest women's identity as citrus entrepreneurs, citrus farmers, citrus nursery owners or citrus traders to be factors that empower women, or their ability to hold leadership position in citrus cooperatives as an empowering factor. What empowers women as presented through women's narratives is their ability to achieve what they themselves value at a given time and space. Nevertheless, what one-woman value, might be equally valued by other women, their husbands, their extended family, and also the community at large, but that same value may equally be challenged. Given that values are normative, the importance of the process of decision-making (regarding four production domains and each resource dimensions) rather than just the outcome (achievement in tackling perceived gender inequality) should be further analyzed as to whether women farmers' choices and values have been made based on social arrangement, norms and practices that leaves women with the option of adaptive preferences or cooperative conflict, thus resulting in gender inequality rather than mere differences in choices.

Other suggestions for future research on similar topic are as follows:

i. It is within the broader moderately inclined multi-functionality of agriculture that the researcher has argued that men more than women have been able to benefit from the market economy. With men being able to perform as citrus traders, nursery owners, and citrus facilitators, besides being able to identify themselves as large citrus farmers, the study suggests future researchers to focus on social psychology of farmers' identity. Farmers' identity might include singular or multiple identities such as citrus farmer, vegetable farmer, livestock farmer, cereal crop farmer and so on. Farmers' identity in a mixed-farming system is a potential research area that provides insights of women's status in multi-functional agricultural.

ii. Human mobility as a dimension of women's empowerment has shown inter-linkages of mobility with multiple-occupation in farming. But the study has not been able to provide enough evidence on mobility related with other purposes that results in men and women being able to leave their household. Men's ability to leave house, according to the study, suggests their ability to free themselves from day-to-day agricultural work especially related with livestock care. However, further exploration could be made on agriculture related mobility and non-mobility in addition to mobility for other purposes to understand how one's freedom to move could change one's involvement in agriculture.

Finally, given that the study has identified arenas of hidden social norms, practices and structures that hinder women's ability to make decisions or fully participate in the access, use and control of five inductively selected resource dimensions in agriculture, the study stresses on the need to break such socio-cultural structures. Researchers, practitioners and policy makers should further explore ways in which such constraints faced by diverse women farmers can be tackled to uplift women's lives based on value judgement, that is, however, not bound by adaptive preferences, in a multi-functional agriculture. There is still a need to create conducive environment in a multi-functional agricultural context, where women can freely take part in and make decisions, without falling into the trap of existing gender binaries.

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APPENDICES

A. Survey Interview Questionnaire Format in English

HH Identification Code: _____ Date: _____

Household Profile for the study

SECTION A: STUDY AREA

A01. VDC: _____ **A02.**Ward:_____ **A03.**Village name/detail: ___

SECTION B: PRIMARY RESPONDENTS BACKGROUND

B01. Respondents Full Name: _____ **B02.** Occupation (s): _____

B03. Age:_____ **B04.** Gender: M/F **B05.** Education:___ **B06.** Marital status: _____

B07. Mobile number:

SECTION C: HOUSEHOLD DEMOGRAPHIC BACKGROUND

C01. Total number of family members: _ **C02.** Total number of household members: ___

C03. Total children: **a.** Below 5 ___ **b.** Below 10____ **c.** Total HH member above 65:___

[Gather information of two household members (one male and one female) most active in agriculture]

Male (Same as above = yes/no)	**Female** (Same as above = yes/no)
C04. Name:	**C12.** Name:
C05. Occupations:	**C13.** Occupations:
C06. Age:	**C14.** Age:
C07. Education:	**C15.** Education:
C08. Marital Status:	**C16.** Marital Status:
C09. Migration history:	**C17.** Migration history:
C10. Group membership detail:	**C18.** Group membership detail:
C11: Year of marriage:	**C19:** Year of marriage:

SECTION D: LAND USE AND AGRICULTURAL DATA

D01. Total land used for agriculture purpose: ___a. Khet:_____b.Bari:_____

D02. How did you or members of your household acquire this land? (Select all that apply)

a. Inheritance
b. Renting from landlord
c. Sharecropping
d. Bought from private person
e. Others (specify)

D03. When did you start planting citrus fruit? _____ **D04** Was it inherited from parents?

_____

D05. Year (s) of major plantations and number of trees planted:

_____

D06. Total number of fruiting and non-fruiting trees: _____

D07: Detail of livestock ownership: _____

D08: List of crops planted: _____

D09: Total income from citrus sale in past /current year: _____

SECTION E: LABOUR USE AND DECISION-MAKING DATA

Provide number of household members involved in following activities:

Labour input by male HH members in:				**Labour input by female HH members in:**			
Production	Household labour	Exchange labour	Wage labour	Production	Household labour	Exchange labour	Wage labour
E01. Cereal crop:				**E05.** Cereal crop:			
E02. Vegetable:				**E06.** Vegetable:			
E03. Livestock:				**E07.** Livestock:			
E04. Citrus:				**E08.** Citrus:			

Note: _____

_____

Provide number of hired labourers in each production sector during past cultivation cycle (including of all activities from production to harvest): Specify different activity based labour input as suggested by respondents

Male labourers:	**Female Labourers:**
E09. Cereal crop:	**E13.** Cereal crop:
E10. Vegetable:	**E14.** Vegetable:
E11. Livestock:	**E15.** Livestock:
E12. Citrus:	**E16.** Citrus:

Note: _____

E17. Who makes major decisions (…..) in following production activities?

E09. Cereal crop:
E10. Vegetable:
E11. Livestock:
E12. Citrus:

[Detail decision-making questions is given in Nepali]

B. Decision-making Related Questions in Nepali

कोड १ हजुरबुवा, बुवा, छोरा, नाति, ज्वाँइ, पनाति वा अन्य पुरुष.....१ हजुरआमा, आमा, छोरी, नातिनी, बुहारी, पनातिनी वा अन्य महिला....२ पुरुष महिला दुवैको लगभग उस्तै.....३ धेरै जसो पुरुषको तर महिलापनि सहभागि.....४ धेरै जसो महिलाको तर पुरुषपनि सहभागि.....५		सामान्यतया निम्न कार्यहरुको निर्णय कसले लिन्छ ? कोड १							
निम्न कार्यमा निर्णय		खाद्यान्न बाली	जुनारे बाली	अन्य बाली	निम्न कार्यमा निर्णय		खाद्यान्न बाली	जुनार बाली	अन्य बाली
		०१ क	०१ ख	०१ ग			०१ क	०१ ख	०१ ग
क	घरायसी परियोजनको लागि के कस्तो बाली लगाउने ?				ण	व्यापारी?सहकारी? थोक व्यापारी ? कन्ट्राक्टर? इत्यादि सँग कसले सम्पर्क राख्छ ?			
ख	बजारमुखी उत्पादनको लागि के कस्तो बाली लगाउने ?				त	बजार लानु परेमा कसले लग्छ ?			
ग	कुन प्रकारको बिउँ वा विरुवा लगाउने भनि छनौट कसले गर्छ ?				थ	बिक्री गरेको आम्दानी वा कन्ट्राक्ट गर्दा बैना गरेको हिसाब किताब कसले राख्छ ?			
घ	कता रोप्ने ? कुन कित्तामा ?				द	बाली लगाउन ऋण लिनुपरेमा कसले लिन्छ? कसको नाममा लिइएको छ ?			
ङ	कसरी लगाउने ? अन्तरबाली ? एकलबाली ? कति ठाउँ छाड्ने?				ध	ऋण लिनुपर्दा यस सहकारी वा व्यक्ति वा बैंकसगँ लिने निर्णय कस्को हुन्छ ?			
च	कहिले लगाउने ? कुन दिन? दिन कसले तोक्छ ?				न	ऋण लिएको पैसा कसरी र के मा खर्च गर्ने निर्णय कस्को हुन्छ ?			
छ	के कस्तो मल लगाउने? रासायनिक? प्राङ्गारिक?				प	जिल्ला कृषि कार्यालय, वा अन्य संगसंस्थाले कृषि तालिम वा अन्य सेवा दिएको खण्डमा को जान्छ ? वा गएको थियो ?			
ज	कुन समयमा गोडमेल गर्ने? झारपात हटाउने? काटछाट गर्ने ? मल हाल्ने ?				फ	जे टि ए, कृषि विज्ञ, जस्ता व्यक्ति गाँउ आएमा घरको को व्यक्ति भेट्न जानुहुन्छ ?			
झ	कति जना मान्छे, कामदार, मजदुर लगाउने नलगाउने ? कति महिला कति पुरुष ?				१	हाल बजारमुखि जुनार उत्पादनमा लागौ नलागौ भन्ने निर्णय कस्को थियो ?			
ञ	कहिले वा कुन दिन काट्ने ? टिप्ने? भित्र्याउने ?				२	दैनिक घरायसी खर्च जस्तै नुन तेल कपडा किन्ने जस्ता निर्णय कसले लिन्छ ?			
ट	के कस्तो सामाग्री औजार प्रयोग गर्ने ? किन्ने ?				३	ठुलो घरायसी खर्च जस्तै औषधि उपचार, शिक्षा, जग्गा किन बेच जस्तो निर्णय कसले लिन्छ ?			
ठ	बाली बेच्ने नबेच्ने निर्णय ? कहिले बेच्ने?				४	आकस्मिक खर्च चाहिएमा के गर्ने, कस्तो काम गर्ने, ऋण लिने, ज्याला मजदुरी गर्ने वा घरायसी सामान, गरगहना, गाईवस्तु बेच्ने निर्णय कसको हुन्छ ?			
ड	कस्लाइ बेच्ने ? स्थानिय वा बाहिरको व्यापारी?सहकारी? थोक व्यापारी ? कन्ट्राक्टर?				५	चाडपर्वमा कति खर्च गर्ने नगर्ने निर्णय कसले लिन्छ ?			
ढ	कन्ट्राक्ट गर्दा कसले गर्छ? वा गत वर्ष कसले गर्यो ?				६	मोबाइल को को परिवार सदस्य सँग छ?			
०८	बच्चाहरुको स्कुलको, पढाईलेखाइमा कस्को बढि प्रभाव छ? निर्णय लिनुपरेमा?				७	घरमा साइकल मोटरसाइकल वा अन्य साधन छन भने धेरै जसो कसले चलाउछ ?			

** Later used as a checklist during ethnographic conversations*

C. Key Informant Interview Checklist in Nepali and English

१. जुनार खेति सिन्धुलीमा कसरी र कहिले देखि सुरु भयो ? जुनार खेतिसुरु भएको इतिहास के होला ? (History of Junar in Sindhuli)

- किन सुरु भयो ? फाइदा ? (why plant Junar)
- कुन गाविस देखि सुरु भयो ? (VDC)
- नेपाल सरकार तर्फवाट सहयोग ? वा अरु कसै को ? के कस्तो सहयोग ? तालिम ? ज्ञान ? औजार ? (support)

२. जुनार खेति बजारमुखी भएर शुरु भएको हो वा घरायसी उपभोगको लागि ? (household consumption or market)

- जुनार खेतिको बजारिकरण कहिले देखी शुरु भएको हो ? (start of citrus market orientation)
- अन्न बाली र जुनार खेतिमा कुन कतिको फाइदा जनक हुन्छ ? बेफाइदा ? प्रयोग ? प्रशेधित ? खर्च ? श्रम ? मल ? भण्डारण ? क्षति ? (profitability)
- उत्पादन भएको जुनार बजारमा कसरी लगिन्छ ? खरिदकर्ता गाउँ गाउँ आउछन् कि खरिदकर्ता कहा पुर्याउन पर्छ ? खरिदकर्ता को हुन् ? यहि जिल्लाको हो कि वाहिर ? खरिदकर्ताले कुन समयमा र कुन रुपमा खरिद गर्छ वा गर्न चाहन्छ? ताजा ? पहिलो लटको? प्रशोधित,अर्ध प्रशोधित ? (supply to the market)

३. समुह गठन गरेर जुनार वा अन्न बाली खेतिको शुरु कहिले भएको हो ? (Group formation)

- समुह गठन कसरी गरीयो ? चरणहरु ? कसले शुरुवात ? √ पहिलो समुह कुन हो ? (first group)
- समुहको काम र कर्तव्यहरु के के हुन् ? (work and responsibilities)

४. मूल्य कसरी तोकिन्छ ? निश्चित मूल्य तिर्न स्विकार नगरेमा कसरी मूल्यको लेखाजोखा हुन्छ ? (Product pricing)

- यो वर्ष मूल्य ? अघिल्लो वर्ष ? (past price ranges)
- आगामी वर्ष कति होला जस्तो लाग्छ? (price speculation)
- बजारमा मूल्य कति भन्ने कसरी थाहा पाउनुहुन्छ ? स्रोत ? (source of market price)
- मौसमि वा वेमौसमि मूल्य भिन्नता कति छ ? (seasonal and non-seasonal price)
- मूल्यमा उतार चडाउ कृषकहरुको लागि कतिको खतरा हो ? किन ? मूल्यमा उतार चडाउ वेहोर्न वा सामना गर्न कति को तयार हुनुहुन्छ ? (price fluctuation)

D. Checklist for Semi-structured and In-depth Interview in Nepali and English

१. यस गाउँको मूख्य आय स्रोत के हो ? यहा के कस्ता रोजगारका अवसरहरु छन ? (choices in rural employment)

- तत्काल रोजगारका अवसरहरुमा के कस्ता परिवर्तनहरु आएका छन ? (changes in employment)
- कृषि क्षेत्रमा संलग्न नभएका कुनै परिवार छन यस गाउँमा ? छन भने के मा संलग्न छन ? (families in non-agriculture sector)
- ज्यालामा मात्र निर्भर भएका घर परिवार कति छन ? (wage employment)

२. यहाँ के कस्ता अन्न बालीहरु लगाइन्छ ? (About agricultural production for home and market)

- अन्न बाली वा खाधान्न बालीहरु वाहेक अरु कस्ता बाली लगाइन्छ ? धान (paddy), कोदो (Millet), जौ (Barley), गहुँ (Wheat), मकै (maize), फापर (buckwheat)
- सिंचाइको अवस्था कस्तो छ ? पानिको समस्या छ कि छैन? (Irrigation)
- कून बाली घरायसि प्रयोगको लागि र कून बजार व्यवसायको लागि उत्पादन गरिन्छ ? (home and market production)
- जुनारसगँ अन्तरबाली के लगाइन्छ ? (inter-cropping)

३. उत्पादनको, खर्चको, विक्रीको, श्रमको हिसाब किताब कसले राख्छ ? (labour related information)

- घर परिवारको वा ज्यालाको श्रमको हिसाब किताब (family labour); महिला र पूरुषको ज्याला दर ? (labour wage by gender) बिहान देखि बेलुका ? बिहान मात्र ? काम अनुसार छ कि ? जस्तै गोड्ने? टिप्ने? हलो ?

४. समयमा विक्री नभए उपजको भण्डारण कसरी गरिन्छ ? (storage) प्रशेधनकेन्द्र कहिले देखि शुरु भएको हो ? उधोग ? (processing plants) कामको प्रकृति कस्तो छ ? (work conditions)

५. ऋणको व्यवस्था, सुविधा के कस्तो छ ? बैंक ? सहकारी ? समुह ? (financial support)

६. जुनार निर्यात गर्ने बारे तपाइको के विचार छ ? के कस्ता फाइदा वा वेफाइदा? समस्याहरु ? (export orientation) निर्यात गर्ने वातावरण को लागि के कस्ता पहलहरु भएरहेका छन् ? (export environment)

७. नयाँ प्रवृतिका औजार ?, उपकरण ? साधन? (Technologies and tools) महिलामैत्रि? महिलाले मात्र प्रयोग गर्ने ? औजार ?, उपकरण ? साधन? (women friendly)

८. कृषि क्षेत्रमा महिलाले मात्र गर्ने काम? वा पुरुषले मात्र ? (gender work division in agriculture) निर्णय वा फैसला (decision making)

९. बसाइ सराइ वा कामको लागि विदेश जाने क्रम कस्तो छ ? (migration and mobility)

- विदेश जाने क्रमले यहाको कृषिमा निर्भरित जिविको पारजनमा (agro-based livelihood) वा जनजिवनमा कस्तो प्रवाह पारेको छ? (Impact)
- कृषिमा काम गर्न युवा युवतिहरु कतिको इच्छा राख्छन् ? (Youth attraction to agriculture sector)

E. Checklist for Narrative Interview with Women

Single Question Inducing Narratives (SQIN) included of:

1. 'Tell me about your life as a farmer, mainly citrus farmer. How was your life before and how is it now?'
2. 'What is your role in citrus plantation and citrus commercialization?'
3. 'What is the reason behind you or your family not being involved in commercialization of citrus?'
4. 'What do you think women empowerment or women development is? How do you relate it with your life?'

F. List of Key Informants

S.N.	Name	Gender	Interview type	Remarks
1.	Bhairab Raj Kaini	Male	Phone Interview	Agriculture specialist; He has extensive experience on citrus farming in Nepal
2.	Bhoj Raj Sharma	Male	Face to face interview	Large citrus farmer and nursery owner, member of *Junar* cooperative
3.	Devi Kumari Thakuri	Female	Face to face interview	Large citrus farmer, member of *Junar* cooperative
4.	Jahan Bahadur Karki	Male	Face to face interview	District Agriculture Development Office, Sindhuli
5.	Laxmi Hayu	Female	Face to face interview	Citrus Farmer, member of *Junar* cooperative
6.	Lok Bahadur Ale Magar	Male	Face to face interview	Large citrus farmer, member of *Junar* cooperative
7.	Nirmal Ramtel	Male	Face to face interview	Chairperson of District *Junar* Producers Cooperative Association
8.	Prabhu Hayu	Male	Face to face interview	Descendent of first Hayu citrus cultivator
9.	Rana Bahadur Lungeli Magar	Male	Face to face interview	Early citrus producer, Owner of Junar nursery
10.	Shyam Ramtel	Male	Face to face interview	Junar facilitator, member of *Junar* cooperative
11.	Tilak Bahadur Thapa	Male	Face to face interview	Large citrus farmer, President of Sindhuli *Junar* Development Association

G. Schedule and Duration of Field Stay

S.N.	Schedule	Duration	Field work
1.	December 2014	15-26 December	Site selection; Qualitative interviews; conducted key informant interviews, and preliminary field visit; Collected secondary sources of information
2.	February 2015	8-21 February	Understand agricultural context through ethnographic field stay; Conducted key informant interviews, and in-depth interviews with few farmers
2.	August 2015	18 August- 25 October	Understand agricultural context through ethnographic field stay; Conducted key informant interviews, and in-depth interviews with few farmers
3.	January 2016	12 January- 15 February	Participant observation using ethnographic field stay; Survey
4.	September 2016	26 September- 10 December	Survey during ethnographic field stay; Narrative interview; participant observation

5.	February 2017	2 February -8 March	Narrative interview; Participant observation
6.	June 2017	22 June- 7 July	Follow up interviews; interviews for triangulation of data

H. General Characteristics of Narrative Participants and their Household[3]

Households	Narrative Participant and Household characteristics						
	Sex	**Occupation**	**Education**	**Migration**	**Circular Mobility**	**Age group**	**Exchange labour**
Households that don't practice exchange labour, and mostly hire wage labourers:							
Household 1	Female	2	Literate	No	Yes	55-65	No
	Male	1	Literate	No	Yes	55-65	No
	Maya Kumari Thakuri is a proud citrus farmer and a retail shop owner. She has been involved in citrus farming since 1980 AD. She and her husband jointly worked on the farm. They belong to the first generation of farmers who opted citrus production in a commercial manner. Maya is currently a member of Junar cooperative, and was a chairperson of district Junar association. She is eager to plant vegetables in addition to expanding her citrus orchard. She has recently bought land and added citrus saplings. She feels that household decisions can be made by her, but sometimes seeks consent from her husband. They have five daughters, but none is living with them in their rural household. She is one of the very few women farmers whose name is occasionally taken by both male and female citrus farmers in citrus producing areas. They have more than 500 fruiting citrus trees.						
Household 2	Female	1	4th	No	Yes	35-45	No
	Male	4	Bachelors	Yes	Yes	35-45	No
	Suku Maya Magar considers herself as a farmer, but is reluctant to call her a citrus farmer. She recollects memory of citrus plantation by exerting that the orchard was first developed by her father-in-law and later by her husband who added 400 more saplings. She feels like she is not capable of making major decisions, and is always looking for her husband's consent. Her husband is well educated and has a non-farming profession, but his involvement in citrus farming is tremendous, making him the winner of best farmer award in 2016. They have two daughters studying in Sindhuli district municipality. Her father-in-law also lives with them in their rural home. They have almost 500 fruiting citrus trees.						
Household 3	Female	1	10^{th}	No	Yes	35-45	No
	Male	3	Intermediate	Yes	Yes	35-45	No
	Ranjana Koirala is a daughter-in-law of a wealthy Brahmin family. Like Suku, Ranjana feels reluctant to talk about citrus farming. Her husband studied in Kathmandu, and lived there for several years post-education in order to establish a business. Later, after the business did not succeed as planned, her husband returned to the rural house and took over the inherited citrus orchard. He further engaged himself in scaling up citrus farming also in their Khet land. He was also awarded the best farmer award in 2015. Their two daughters and a son are currently studying in Sindhuli. Rural household consists only of husband and wife. They have almost 1200 citrus trees, with nearly 600 fruiting citrus trees.						
Household 4	Female	1	Nil	No	No	75-80	No
	Male	2	10^{th}	No	Yes	35-40	No
	Ratna Kumari Thakuri belongs to old generation of citrus farmer. She lives with her son and daughter-in-law. Although at present, her son has more decision-making role in the household, her decision to transition from cereal crop to citrus crop, and influence in decision-making within the household is substantial. The household consists of herself, her son and daughter-in-law. Her son is also a local school teacher. They have almost 400 fruiting citrus trees.						
Household 5	Female	2	4^{th}	No	Yes	50-55	No
	Male	1	7^{th}	No	Yes	55-60	No
	Rukkumaya Thapa is new to citrus farming but has established herself as a lead vegetable farmer. She has been engaged in vegetable farming since past eight years. She also works as a fruit/vegetable vendor. She is a member of local non-agriculture cooperative and represents women's group as a chairperson. She has also been involved in various committees (Water, road, community forestry)						

[3] Please note that pseudonym has been used to respect the privacy of the study participants. However, names have been used to differentiate women and their experiences.

	related to rural development. Her household includes of her husband and one son. They have less than 100 citrus trees.						
Households that practice exchange labour, and may/may not hire wage labourers:							
Household 6	Female	1	3rd	No	Yes	40-45	Yes
	Male	1	5th	No	Yes	40-45	Yes
	Bidhya Magar and her husband have inherited citrus trees planted from her father-in-law. They have recently planted fifty Junar saplings in their *Bari*. Their household consists of husband and wife, and two school going children. Both are member of local *Junar* cooperative. They have almost 300 citrus trees.						
Household 7	Female	1	2nd	No	Yes	40-45	Yes
	Male	1	6th	Yes	Yes	40-45	Yes
	Bimala Hayu and her husband have recently started planting citrus in their *Bari*. They have total of 240 *Junar* and *Suntala* in their orchard. Their household consists of husband and wife only. Their two sons' have migrated to Kathmandu for work. Both are member of local *Junar* cooperative.						
Household 8	Female	2	10th	No	Yes	35-40	Yes
	Male	2	9th	Yes	Yes	35-40	No
	Bina Karki and her husband have two school-going children. Bina's husband is a returnee migrant and was planning to go to Qatar once again. Bina works as a social mobilizer and supports NGO project related to sanitation. They have inherited citrus trees from their parents, and have recently planted 150 citrus trees in order to reduce their labour input in cereal crop production. Due to their engagement in non-agricultural occupation, they have been trying to reduce their work in agriculture. They have less than 100 fruit bearing trees.						
Household 9	Female	1	6th	No	No	40-45	Yes
	Male	2	10th	Yes	Yes	50-55	Yes
	Sharada Koirala is a citrus farmer who has been actively engaged in almost all decisions of her household. Her husband is an ex-army officer; hence his engagement in day-to-day decision-making was minimal in the past. However, since his retirement, his engagement in providing daily labour in agriculture as well as in decisions related with the household is gradually increasing. Nevertheless, decisions are made jointly. They have 3 children, 2 are school going and one has left local village to pursue study in Sindhuli municipality. They currently have around 300 citrus trees.						
Household 10	Female	2	2nd	No	Yes	35-40	Yes
	Male	1	3rd	No	No	40-45	No
	Laxmi Hayu and her husband have three children, who live away from their rural home. The husband and wife make their living through agriculture. Laxmi is also a tailor. They are gradually increasing the number of citrus trees. Laxmi is a member of citrus cooperative, and is often called for during meetings. They have around 200 citrus trees.						
Household 11	Female	1	Nil	No	Yes	55-60	Yes
	Male	1	Nil	No	Yes	55-60	Yes
	Rammaya Ale Magar has ten family members, but only seven reside in rural home. Household member include of her husband, one son, two daughter in-laws, and two grandchildren. One of her son and two grandsons have migrated to Dubai and Kathmandu respectively. They have around 600 citrus trees, out of which 400 are fruit bearing trees. Rammaya and her husband are members of citrus cooperative, but mostly Rammaya participates in the meetings.						
Household 12	Female	1	Nil	No	No	55-60	Yes
	Male	1	2nd	No	No	40-45	Yes
	Sangita Karki belongs to early citrus planters. She is a widow. But she lives with her sons and daughter-in-laws. Currently, fourteen people are considered as family members, as two families have started to live together since the earthquake destroyed the house. These two families earlier had separate kitchen, but labour and decision-making were always made jointly. Sangita has also received trainings on citrus farming as her husband worked in government agricultural office. They have around 500 citrus trees.						
Household 13	Female	1	nil	No	Yes	45-50	Yes
	Male	1	2nd	Yes	Yes	60-65	No
	Geeta Thakuri has two sons and one daughter. None of them live with their parents in rural area. Geeta and her husband handle day-to-day work in agriculture. Her husband is a returnee migrant. But ever since they have been married, her husband has lived in the village. Geeta's husband belongs to early adopters of citrus, but he did not continue citrus farming but rather left the village to work in India. He later returned to the village, and with Geeta's support and eagerness they started planting citrus.						

Household 14	Female	1	3rd	No	No	45-50	Yes
	Male	1	5th	No	No	45-50	Yes
	Suntali Ale Magar and her husband both are engaged in agriculture, including of citrus farming. They have almost 70 citrus plants, and are planning to increase the number of citrus trees in their orchard. Most of the citrus trees that they have are inherited. They have two children who live in Sindhuli.						
Household 15	Female	1	5th	Yes	Yes	45-50	Yes
	Male	1	8th	Yes	Yes	45-50	Yes
	Suntali Thapa and her husband once lived in India. Both of them returned back to rural household at the same time. They have three children, two daughters and a school going son. They live in a closely-knit family circle, hence although they feel that they don't need to provide hard work in agriculture, they are still engaged in reciprocal labour. They have inherited citrus trees, and have also engaged in expanding citrus orchard. They have around 400 fruiting citrus trees.						
Household 16	Female	1	Nil	No	Yes	50-55	Yes
	Male	1	8th	Yes	Yes	35-40	Yes
	Tulasa Budathoki and her husband have inherited citrus orchard. Her husband is currently in Qatar. They have almost 100 citrus trees. Her son lives in Sindhuli municipality and occasionally visits home. He comes back during agricultural peak season of plantation and harvest, but is mostly away from home. Tulasa is also eager in planting vegetables for market sale.						
Households that practice exchange labour and also work as wage labourers:							
Household 17	Female	1	2nd	No	Yes	50-55	Yes
	Male	1	1st	No	Yes	55-60	No
	Nirmala Basyal has two sons and two daughters. One son and one daughter have recently returned back to rural village, while one son is still making his living in Qatar. Her daughter is a tailor. Her husband is mostly engaged in cereal crop production and has recently insisted on buying more land for paddy production. Nirmala on the other hand is more interested in expanding citrus orchard. She along with her daughters also works as wage labourers. They have around 100 citrus trees.						
Household 18	Female	1	Nil	No	No	35-40	Yes
	Male	2	Nil	No	Yes	35-40	Yes
	Ratna Ramtel's husband is a carpenter. He is mostly busy with non-agricultural work, but provides his labour input during agricultural peak season. Day-to-day work in agriculture is mostly done by Ratna, with support from her daughters. She has two daughters. They are new to citrus farming, and have recently planted 40 citrus trees.						
Household 19	Female	1	Nil	No	No	40-45	Yes
	Male	1	5th	Yes	Yes	50-55	No
	Sumana Bishwakarma and her husband are new to citrus farming. They have almost 50 citrus trees. Her husband is a returnee migrant from India. They have two sons; one works in Kathmandu and another is a local school teacher. Sumana is a member of citrus cooperative.						
Household 20	Female	1	Nil	No	Yes	35-40	No
	Male	2	4th	No	Yes	45-50	Yes
	Suntali Purbachane is a new wage labourer. None of her family members work as wage labourer in agriculture. Her husband works in construction as daily wage earner, but does not work for wage in agriculture. She lives with her parents' in-laws, and has one school going son. They have less than 50 citrus trees.						

H. Land Conversion

Land Measurement					
1 ropani	= 16 aana	= 521 m2	= 5476 sq.ft	0.05087 ha	0.12571 acre
1 aana	= 4 paise	=31.79 m2	= 342.25 sq.ft		
1 paisa	= 4 dam	= 7.95 m2	= 85.56 sq.ft		
1 dam		= 98 m2	= 21.39 sq.ft		
1 hectare	=19 ropani, 2 aana, 2.65 dam				

Source: http://www.nepalhelp.dk/filer/Projecthelp/conversion.pdf

I. Volume and Weight Measurement

Volume Measurement			Weight Measurement		
1 muri	= 20 pathi		1 kg	= 4 pau	
1 pathi	= 8 mana	= 4.54596 litre	1 pau	= 19 tola	=199 gms
1 Kuruwa	= 2 mana		1 tola	= 100 lal	= 11.66 gm
1 mana	= 4 chouthai	= 10 muthi	1 seer	= 0.9331 kg	
1 liter	= 1.838 mana		1 dharni	= 12 pau	= 2.3934 kg
			1 maund	= 37.3242 kg	
			1 gm	= 8.573 lal	
			1 pound	= 0.4536 kg	

Source: http://www.nepalhelp.dk/filer/Projecthelp/conversion.pdf