



FOOD SECURITY IN RESOURCE SCARCE AREA: THE QUEST FOR INCLUSION
OF MARGINAL GROUPS IN THE FAR-WESTERN REGION OF NEPAL

Nirmala Kumar Bishokarma

A THESIS

Submitted to

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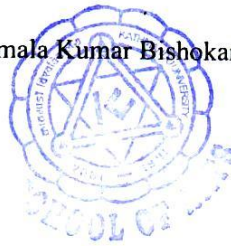
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AN ABSTRACT OF THE THESIS OF

Mr. Nirmala Kumar Bishokarma for the degree of Doctor of Philosophy in Development Studies presented on 29 May 2016. Title: Food Security in Resource Scarce Area : The Quest for Inclusion of Marginal Groups in Far-Western Region of Nepal.

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This PhD research looks at how marginal communities living in far-western region of Nepal gain access to food in the situation of resource scarcity and socio-economic inequality. By using the entitlement framework, the research explores the existing assets

and resource endowments, exchange entitlement, existing and alternative livelihoods options, focusing on both informal and formal institutions including the Government policies.

Many studies argue that production deficit is the major reason behind the situation of food insecurity among the people. These discussions assume that food security depends upon arable land and argue that the center of attention needs to be given on increase in food production. In contrast, other debates state that there is sufficient food available to feed the entire global population; supply constraint is the major cause of its deficiency. These opinions focus on promotion of efficient food supply mechanism through international trade, aid and public distributions, including improved governance, which secures that available food reaches to the needy people. With the groundbreaking work of Amartya Sen (1981), the issues of entitlement and access to food surpass the ongoing above-mentioned debates. His works argue that lack of people's capacity to demand food is major cause of its deficit among some section of them.

This research uses and builds on Sen's entitlement theory. His theory is relevant to analyze causes and factors of food shortage among marginal groups living in Nepal. The theory focuses on people's private ownership to resource endowments to produce food and their market based exchange entitlement to acquire food they need. However, it gives limited attention on broader aspects of people's resource endowments as well as the role of non-market institutions to gain the entitlement. This research looks at beyond the debates and discussions of entitlement framework of Sen to generate complete picture of

access to food. In this regard, this research has accommodated the issues of poverty, livelihoods and capability in Sen's framework. In addition to this, the research has incorporated the subjects of exclusions and inclusions adequately to understand food security in the context of society like Nepal. It discusses how these issues affect food production and exchange entitlement of different categories of people in resource scarce areas.

This study is descriptive as well as analytical and uses mixed methods research strategies. In quantitative method, it uses household survey (structured questionnaire). In qualitative method, it uses Key Informant Interview (KII) and Focus/ Group Discussions (F/GD) at a single point in time. For household survey, the study applies multistage sampling methods to locate sampling units. Survey of 370 households was done using structured questionnaire. The sample represents 52.7 percent Upper Caste, 16.7 percent Janjati and 30.5 percent Dalits households. Woman represents 43.2 percent of the total respondent. To generate qualitative information, 32 field-level Key Informant Interviews (KII) were conducted. In addition, the study carried out 21 Focus/Group Discussions (F/GD) using range of participatory tools such as resource mapping, ranking, market analysis, trend analysis, etc. To analyse the information, it used SPSS software for quantitative data while employed participatory tools for qualitative information. The research instruments such as survey questionnaire and checklists were tested in the field before its actual use to ensure its validity and reliability. In the study, special attempt has been made to capture the issues of gender and social inclusion perspective of different categories of people.

This study finds that almost all of the households in the study sites face food production deficit because of limited land, nominal use of agricultural inputs, inadequate harnessing of livestock and forest based food. These households depend on market, WFP food aid and Nepal Food Corporation (NFC) to fulfill their deficit food need. In this regard, market has been playing crucial role in recent time due to connection of hilly and mountain regions by the road networks and establishment of small markets along the road. However, the food security objective of the poor and marginalized households is still in vulnerable situation due to lack of targeting methods of these distributing agencies.

The state and pattern of food insecurity among different social group is diverse. Majority of Dalits are unable to produce sufficient food they need because their access to land and improved agricultural input is very limited. Most of them depend on market for deficit food, as their access to public and aid food is limited. Seasonal migration to India is major income source of them. They also face caste-based discrimination in consumption and utilization of food. Janjati have good access to land but have limited access to improved agricultural inputs. The farming practices of them mostly focus on cereal but have limited attentions on cash crop. Agriculture is the major source of income for them. Within households, women's entitlement to food production is limited because of their lack of ownership of land and practices of gender-based discrimination and structural violences against them. Gender-based discrimination in food distribution during menstruation is still practice among Upper Caste households while consumption of leftover still exists among Dalits. Women's access to 'cash for work' program run by NFC and WFP is also limited.

Many factors and trends influence the food entitlement ability of different categories of people living in the region. Construction of road and establishment of market is the key factor that provides opportunities to the people for commercialization of farming, diversification of income strategies, availability of cheap food and market-based consumerism. These infrastructures have also been breaking up traditional social structure such as relations of patron and clients between Upper Caste and Dalits. Now the Dalits purchase food in the market using remittances instead of going to work for patron. Seasonal migration to India continues as another important trend providing alternative coping strategy to the poor in the region. It is a major source of income among them. However, it has created many negative impacts in the regions including the problem HIV/AIDS. In recent days, trend of going to India among rich Upper Caste households from the region has been decreasing. Similarly, the social exclusion and discriminatory institutions are other trends, which are still functioning in the sites, which make Dalits vulnerable to food insecurity. In this regard, historical injustice with Dalits seems a major issue, which created barriers to get land and education for them. In addition to these, the ten years of Maoist conflicts is also important factor felt by the people living in the study-sites. This conflict has led to both positive and negative impacts; some of the positive impacts seen in the study sites are related to decline in food-based discrimination practices and untouchability, while negative impacts seen include growing fallowing of land due to forced migration of people and decline in alternative livelihood activities leading to food shortages. It has exerted positive impacts such as supported to end food based discrimination as well as negative impacts such as causing shortage of labor.

The review of the Government policies of Nepal shows that the objectives and targets of the policies have not achieved so far. The Government policies of Nepal have been continuously focusing on improvements in food production from its first five-year plan (1956/57-1960/61). Most important reason behind the situations is that these policies are directed towards land owning farmers and have given little attention to marginal cultivators. Regarding production entitlement, there are many policies dealing with land ownership and use of improved agricultural inputs. However, these policies are not helpful for small holders and their access to improved agricultural inputs is very limited. These policies have also not focussed on the production of local crops such as Millet, and Buckwheat. Regarding exchange entitlement, very limited households derive their income through off-farm strategies within the country. In spite of some potentialities, the access of the local people on non-farm based employment is negligible. The Government has no specific policies focusing on the marginal youth living in the sites. Regarding consumption entitlement, awareness about food safety is very limited. There is no mechanism to implement farm and animal-based safety rules in the region so far. However, awareness about consumption of nutritious food has increased in recent days due to effective health campaign of health posts.

In recent years, some alternative practices are emerging in the region that may improve the food entitlement of the marginal communities. The landless and small cultivators are using public land, contract farming and available forestland to produce food crops. Options of production for them include high value cash crops and organic farming. Similarly, new non-farm income opportunities are emerging in the sites. In this

regard, the possibilities of wage labor in construction sectors, migration to gulf and Malaysian countries, forest-product based entrepreneurships and tourism are becoming important. In recent days, people are also aware about the alternative consumption pattern. Instead of rice, some people have followed the alternative pattern of consumption of locally produced potato, maize and barely.

The study recommends that there is need of public support to the vulnerable communities even in food surplus areas. These mechanisms may be the provision of voucher, cheap shop, food cards or others. Similarly, access of the marginal people to land seems crucial because land still matters for food entitlement of the people living in resource scarce areas. Simultaneously, it is important to upgrade the labor skill of youth. Focus needs to be given to launch skill development programme based on the demands at Indian and abroad labor market. In addition, the Government policies dealing with food security need to be specific and strategic focusing on activities that address the issues of food insecure groups such as marginal cultivators of all caste groups, particularly Dalits and women. In these contexts, policies directed towards the production of high value cash crops may be important to increase the purchasing power of local people. More importantly, the alternative practices emerging in the region need to be institutionalized through appropriate policies, institutions and agricultural inputs.



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DECLARATION

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

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



Nirmala Kumar Bishokarma

May 2016

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Dedicated to

***The people who are living with hunger and
starvation; have been struggling to be out of
entitlement failure***

List of Abbreviation

ADB	Asian Development Bank
ADBN	Agricultural Development Bank Nepal
ADS	Agriculture Development Strategy
AIC	Agriculture Inputs Corporation
AICL	Agriculture Inputs Corporation Limited
APP	Agricultural Perspective Plan
ASPR	Agricultural Sector Performance Review
BMI	Body Mass Index
BISEP-ST	Biodiversity Sector Support Programme – Siwalik Terai
BS	Bikram Sambat (Nepali Calendar Year)
CBS	Central Bureau of Statistics
CDO	Chief District Officer
CFUG:	Community Forest User Group
CFSVA	Compressive Food Security and Vulnerability Analysis
CFW	Cash for Work
DADO	District Agriculture Development Office
DLDSO	District Livestock Development Support Office
DDC	District Development Committee
CFUGs	Community Forest User Groups
DADO	District Agriculture Development Office
DFID	Department for International Development of United Kingdoms
DFTQC	Department of Food Technology and Quality Control
D/HQ	District Head Quarter
DLS	Department of Livestock Services
DoA	Department of Agriculture
DoC	Department of Cooperatives
DoI	Department of Irrigation
DoLRM	Department of Land Reform and Management
DOR	Department of Road
DOH	Department of Health
EU	European Union
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
FIAN	Food-first Information & Action Network
FNCCI	Federation of Nepalese Chambers of Commerce and Industry
FFW	Food for Work
GDP	Gross Domestic Product
GHI	Global Hunger Index
GO(s)	Government Organizations
GoN	Government of Nepal
GTZ	German Development Cooperation
HH	Households
HDI	Human Development Index
Ha	Hectare
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IASC	Inter-Agency Standing Committee
IDMC	Internal Displacement Monitoring Centre

IIDS	Indian Institute of Dalit Studies
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IGA	Income Generating Activities
ISRC	Intensive Study and Research Centre
IPs	Indigenous Peoples
KII	Key Informant Interview
LFUG	Leasehold Forest User Groups
MoAC	Ministry of Agriculture and Cooperatives
MEDEP	Micro Enterprise Development Programme
MDG	Millennium Development Goal
MoF	Ministry of Forest
MOFALD	Ministry of Federal Affairs and Local Development
MoHP	Ministry of Health and Population
MOE	Ministry of Environment
MP	Member of Parliament
MSP	Minimum Support Price
MT	Metric Ton
NASDP	National Agriculture Sector Development Priority
NCCR	Swiss National Centre of Competency for Research
NFC	Nepal Food Cooperation
I/NGOs	International/Non Governmental Organization
NLSS	Nepal Living Standard Survey
NPC	National Planning Commission
NPR	Nepalese Rupees
NSC	National Seed Company
NTFPs	Non-Timber Forest Products
NTB	Nepal Tourism Board
No.	Number
RCIW	Rural Community Infrastructure Works Programme
SLC	School Leaving Certificate
SPSS	Statistical Package for Social System
TEPC	Trade and Export Promotion Centre
TYIP	Three-Year Interim Plan
UN	United Nations
ICESCR	UN International Covenant on Economic, Social and Cultural Rights
UNDP	United Nations Development Programme
USD	United States Dollar
USAID	United States Agency for International Development
VDC	Village Development Committee
WB	World Bank
WFP	UN World Food Programme

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Food Security in Resource Scarce Area: The Quest for Inclusion of Marginal Groups in the Far-Western Region of Nepal

CHAPTER ONE

INTRODUCTION

1.1 Context of Research

Why marginal people¹ suffer from food insecurity in Nepal is the major thrust that motivated me to conduct this study. There is evidence (Adhikari, 2010) that they face food shortage across the country in all regions². Even in the Terai - a relatively accessible and productive area in terms of food production – they face a shortage of food. Chronic food insecurity³ is evident in the Far and Mid-western regions, which are relatively known to be resource scarce areas (WFP/NPC, 2010).

This case study looks at how marginal communities gain access to food in the situation of resource scarcity and socio-economic inequality. It analyses and argues that institutions determine and affect food production, access and consumption entitlement of these people. It aims to understand how processes of exclusion and inclusion based on gender, ethnicity, and caste hinder or enable them to obtain food they need. Further, it

¹MOFALD (Ministry of Federal Affairs and Local Development) of the Government of Nepal has categorized the poor of all caste, ethnicity, location and gender and socially marginalized groups such as Women, Dalits, Adibasi Janajati, Madhesi, Muslims, people with disabilities and people of geographically remote areas as the economically marginalized groups (MOLD, 2009).

²The geography of Nepal is divided into three physiographic regions from South to north: the Terai (flat land area), the Hill and the Mountain. Politically, it is divided into five regions from East to West. These are: eastern, central, western, Mid-western and Far-western development regions.

³Chronic food insecurity describes the continuing inability of people to meet minimum nutrition and consumption needs over a sustained period. It often stems from extended periods of poverty, restricted resource access and from limited or no assets (WFP/NPC, 2010).

examines which alternative production and exchange entitlement options for them are suitable for an inclusive food security in Nepal. For this study, the far-western region of Nepal – the country’s most food insecure region - was selected.

Many studies to date discuss that production deficit is the major reason behind food insecurity among the people (Regmi, 2009; Brown, 2011). These studies assume that food security depend upon arable land and argue that the center of attention needs to be given on food production increase and availability. In contrast to these food availability arguments, other sources like (FAO, 2012; Rutten et al., 2013) state that there are sufficient food to feed the entire global population; supply constraint is the major cause of shortage. These opinions focus on efficient food supply through international trade, aid and public distributions, including an improved governance of food distribution, which secures that available food reaches to the needy people. With the groundbreaking work of A. Sen (1981), the issues of entitlement and access to food lead the debate, which is even relevant to analyze cause and factors of its scarcity. His works argue that lack of people’s capacity to demand food is major cause of its deficit among some section of them (Maxwell, 1996; Alcock, 2009).

However, there has been limited research done on how different social groups convert their resource endowment into food, and what factors and institutions affect this conversion. This PhD aims to close this research gap. By using the food (Sen, 1981) and environmental (Leach et al.1999) entitlement framework, the research explores the existing assets and resource endowments, exchange entitlement, existing and alternative livelihood options, with a focus on institutions and policies of the marginal communities in the contexts of resource scarcity and social iniquity.

1.2 Food Insecurity in the Far-Western Region of Nepal

The study is conducted in far western region that has the highest prevalence of food insecurity in Nepal⁴. The region is a resource scarce area in terms of per-capita availability of natural resources and food production, with a poverty rate and low human development index (CBS, 2005; 2011; 2011b). I will discuss about the state of resource scarcity in detail in chapter 3.1. The region is home to 76 percent of the highly food insecure people of the country (WFP, 2010). The WFP/NPC (2010) report points out that there is regular occurrence of hunger in its hill and mountain parts. Comparing it with the hunger indices, the severity of situation in these parts is similar to that in Ethiopia. The hunger indices⁵ report prepared by IFPRI indicates the index in these parts to be close to or above 30-index scale, pointing to an alarming situation.

In terms of food self-sufficiency, the region is a historically food deficit area. Local food production meets the needs for only three to six months of annual household consumption (WFP, 2008). Record shows that the production of food was double during the 1971–2001 periods in Nepal. While there was 30 percent increase in the eastern regions, there was only 20 percent in the far-western region; the lowest progress in production in the country (Gurung, 2005). While national level average productivity of Paddy and Maize is 1.1 tons/hectare, it is only 0.97 ton in the region; even decreasing in trend (FAO/WFP, 2007). Almost 90 percent of total households in the region have inadequate access to food (WFP, 2008).

⁴ Nepal is one of the food insecure countries in Asia (WFP, 2005; IFPRI, 2015). Global Hunger Index 2015 ranks the country in 44th position out of 76 nations (IFPRI, 2015). Its hunger index is 19.9, which illustrates the seriousness of hunger in severe situation.

⁵ The International Food Policy Research Institute (IFPRI) devises the Global Hunger Index. A higher index indicates a higher prevalence of hunger. The severity of hunger is indicated by following the indexes of threshold: GHI < 4.9 low, GHI: 5.00-9.9 moderate, GHI: 10-19.9 serious, GHI: 20-29.9 alarming and GHI > 30, extremely alarming.

The region is isolated in terms of geographical connections from the mainstream development. Total length of road in the region is only 1192 km; which is 13 percent of total length of nation (DOR, 2007). Development of market in the Hill and Mountain region is very limited. Regarding purchasing power, CBS (2011) report shows that per capita income of the people living in the region is 402 US dollar per year that is the lowest in comparison with other regions of the country. According to NLSS III (2010/11) report, poverty rate in the region is more severe than those of in other regions. Soliva, et al. (2003) state that the region is not only neglected by academic researcher, but also by the government and non-government agencies.

WFP food aid and the Government's public distribution mechanism have been involved in providing food to the food deficit people for the last 40 years. However, the issue remains that their support is insufficient with regard to the demands of local people. These support structures on the other hand have increased the dependency of local people on external food (Sapkota, 2011). People there have the lowest per capita mean dietary energy consumption (WFP, 2013) which stands at only 2250 kcal/per person/day in the region, while at the national level it is estimated to be 2405 kcal (MOHP, 2011). In addition, 60 percent of total children in the region are stunted and 50 percent are underweight (UNICEF, 2010). While 39.8 percent people live below calorie intake threshold in the national average, it is 44.9 percent for the region; the highest prevalent caloric deficit in the country (NPC, 2011).

NCCR (2009) report shows that at least one member of 70 percent of total households in the region migrates seasonally to India to cope with food shortage. There is a highest frequency of households headed by females, because almost all of the men tend to migrate during the resource scarce time (Lokshin et al., 2008; WFP, 2010). Müller-Böker and Thieme (2007) have stated that this migration has been playing supportive role for the poor to cope with their household food insecurity.

1.3 Drivers of Food insecurity

In the following lines, the global and national debate about the drivers of food in/security has been summarized /shown.

1.3.1 Limited Production

Before the World Food Summit of 1996, food availability concepts had influenced the discussions and debates on global food security. Following the Malthusian perspective, scholars and development professionals gave their attention to food production aspects. The Malthusian hypothesis argues that food production would grow at a linear level while human population will increase at an exponential rate (Schubert, 2005). The unchecked conditions of population increase inspired the scenarios of food availability decline. However, FAO statistical yearbook (2012) shows that the growth rate of world cereal production has increased to 2.3 percent since 2003 while the global population growth rate, according to world population prospects 2012, is 1.2 percent (FAO, 2012, p.130). Another report of USDA (2010) has shown that per head grain production in the year was 325 Kg. It was considerably more than the 219 Kg of grain annually needed to meet basic caloric requirements of 2100 calories per day per person in 2009/10 (USDA, 2010,p.5). In Nepal, the average food production per hectare in 1974-1980 was 1.7 metric ton, which increased to 2.3 metric ton per hectare in the period 2001-09, while the average population growth for the period 2001-09 was 2.3 percent. In addition, the production increments of rice and wheat for the period 1990- 2009 were 13 percent and 47 percent respectively (Paudel, et al. 2012).

Scherr (2000) and Hackett (2001) argue that food in/security depends upon per-capita availability of land, forest and water. It depends on land by which people produce food through farming, herding, and collection of forest product (Brown, 2011; Thulin and Allegrini, 2012). The people in resource scarce areas are compelled to adopt land based food security strategies (Banskota and Jodha, 1992; Khanal, 2001). Major factors for low

per capita production of food in such area are the fragile soil, low rainfall and fragmentation of land (Shane, et al., 2000). These discussions focus on the interventions that enhance the productivity of land. Sachs and Warner (1999) argued that investment in natural resources is precondition for anticipated growth. Many international organizations such as FAO and IFAD have given special attention to improve productivity of marginal land in such areas. The scholars who follow the land based food security concept also claim that the natural resources are not only important for food self-sufficiency but also play significant role to increase the income of farmers (Richardson, 2010). In the context of Nepal, the level of self-sufficiency in food for a year is known as a symbol of prosperity (Regmi, 1999). Surplus cereal crops among farmers are important source of income to purchase other nutritious food and non-food items they need (Regmi, 2009). These cereals also support the stabilization of local food price at a lower level (Kumar et al., 212).

Gadi and Mushtaq (2001) and Merton and Heller (2008) explore that unequal distribution of land and other natural resources limit the food production ability of marginalized communities. The production capability of people with limited land is lower than that of households with more land. UNDP (2004) Nepal Report shows that there are 25 percent landless households in the country. The number of landless or marginal cultivators among the Dalits and disadvantaged Janjatis is greater than the others (Singh, 2008). Only 19.7 percent of female own any land or a house (CBS, 2011). Bishwakarma (2010) has shown that the poor have limited land, less access to the existing natural resources and to other safety net programs such as lack of economic opportunities.

On the other hand, many scholars explain that the food security of the marginal groups in resource scarce areas is not dependent on land only (Bernstein 2005; Hussein and Nelson 1998). They argue that both the farm and non-farm income-generating activities matter in sustaining rural livelihoods. Livelihood security is the precondition for food security (Maxwell, 1988; Rajbhandari, 2002). There is evidence that the majority of people living in resource scare areas have highly diversified off-farm cash economic

strategies (Berry, 1993; Boehm, 2005; Krautkraemer, 2005) and non-farm income earning strategies (Thompson, 2001; Ellis, 2000). Müller-Böker and Thieme (2007) point out that remittance play an important role among them for purchasing food they require. Bishokarma (2012) identifies that a major livelihood source of rural people depends upon traditional occupations, wage earning, business, trade, and remittances. The NLSS (III) (2011) report shows that 28 percent of all household income comes from agriculture, 37 percent from nonfarm enterprises, 17 percent from remittances, and 16 percent from own house production consumption in Nepal (CBS, 2011).

1.3.2 Food Supply Failure

Another argument about the food security is around food supply debate. Allouche (2011) and Thulin and Allegrini (2012) argue that food insecurity is not the result of absolute scarcity of food. In purely quantitative terms, there is enough food available to feed the total global population of 7 billion people (WFP, 2010). A FAO report (2012) proves that 518 million tonnes of cereals are at stock comprising 22 percent of total production in that year. Alongside growth in agricultural output, food supply per capita in Asia rose from 2200 calories/person/day in 1970 to 2260 in 1980, to 2700 in 2001 and 2900 in 2010 (FAO, 2012, p.17). Despite this, the FAO (2013) estimates that about 870 million people, 12.5 percent of the global population, are undernourished. The vast majority of this population, 852 million, lives in developing countries. Among them, the share of under nourished people in South Asia has increased from 32.7 to 35.0 percent during 1990-92 to 2010-12.

Mancusi-Materi (2002) and Spring (2009) state that the effectiveness of governance of food supply-the effective transfer of surplus to undersupplied areas-is the major issue in this regard. How food can be available to the people in need is one of the key challenges (Maxwell, 1996; Webb et. al., 2006). Cormac (2011) and Rutten et al. (2013) have claimed that market mechanism is an appropriate method for effective supply of food. Globally, the role of food market is very important to dissolve the

problem of hunger. In the context of Nepal, the country has been reliant on imported food, specifically from India, to feed its growing population since the 1990s. It imports around 94000 metric ton of rice and 19000 metric ton of wheat annually (MAOC, 2011). The rice import accounted for 93 to 100 percent of the total food-import during 1996/97 to 2009/10 (TEPC, 2013). However, the question of access to market food by the poor has not clearly been answered yet (Attword, 2005; Barrett, et al., 2009). There is evidence that people who depend upon international food market are more vulnerable from food price hike crisis (Yang and Zehnder, 2002; Rao, 2009). During the crisis of food rise in 2007/08, the poorest of the rural families in Nepal had to cut the household budget, sell of their assets, and take loans that only led to are increase in the intensity of poverty amongst them (WFP, 2008a).

Considering these risks of import-based food supply; the concept of food sovereignty is now emerging in Nepal. This concept favors to promote the rights of people over land, agriculture production and to consumption (Khadka, 2005; Menezes, 2001). Rosset (2008) argues that individual countries must build their policies to protect domestic peasants from the global crisis such as food price hike through food production. The concept focuses on policies that substitute food import (Dupraz and Postolle, 2010). Recognizing the issue, the Government of Nepal has introduced the perspective of food sovereignty in its interim constitution 2007. It is also included in the Three Years Interim Periodic Plan (2007-10). However, much confusion exists among policy makers and researcher on how the Government would implement this concept in the context of rampant resource scarcity and inequality in the country.

Simultaneously, development practitioners, who support the perspective of right to food, emphasize that it is the Government's responsibility to feed their citizens (Adhikari and Ghimire, 2006). Food security is the crucial aspect of human rights under which everybody has the right to acquire adequate food he/she requires (Patrus, 2009). The UN International Covenant on Economic, Social and Cultural Rights (ICESCR), adopted in 1966, mentions that:

“the State parties to the present covenant recognize the right of everyone to an adequate standard of living including adequate food and that it is the fundamental right of everyone to be free from hunger” (FAO, 2007).

In this regard, Maluf (1998) and Cribb (2011) opine that public food distribution is a just mechanism of food supply because the state has to treat its citizens equally. Amaral and Peduto (2010) complement that Government is responsible not only for the provision of providing direct food but also responsible for conducting interventions that enhance production and purchasing power of its people. Many NGOs and INGOs today are advocating for the right to food approach in Nepal.

The Government of Nepal had started a public food distribution programme under the name of *rasad godam* centre as early as 1943, but only for those who could help the government, i.e., army and police. But, this was slowly changed and supply was focused on Kathmandu. During the 1972 famines in the Karnali region, its name was changed into Nepal Food Corporation (NFC) from which time it began supplying subsidized food on a continue basis to remote food deficit areas. Now the corporation sells food in subsidized price to 30 food scarce districts, majority of these districts being in far and mid western regions. However, Shahi (2013) and Shaha (2013) have criticized that despite it, the food fails to reach the needy people in these areas.

In addition, food aid is a crucial mechanism to supply food in case of emergency. In Nepal, official food aid started from 1979/80 while there was persistent crop loss from drought (Rawal, 1983). The quantity of food aid varied from 1982 mt. in 1994 to 24299 mt. in 1999/00 with an average of 8000mt in 2010/11 (WFP, 2013). This support works through the mechanism of food for work, cash for work, ration system, nutrition allowances and child meal. Scholars criticize the aid saying that it does not use appropriate targeting methods (Jayne et al., 2001; Barrett and Maxwell, 2005). However, Barraclough (1997) stated that the process of targeting depends upon the context and

governance of the receiving countries. Adhikari (2010) argues that food aid has increased the dependency of local people on external food. In contrast, Little (2008) states that the food aid itself does not create dependency and negative impacts on recipient countries, though, it can do so because of programmatic failure. Bishokarma (2012) discussed that Food for Work empowered local laborers to demand a higher than average wage,

There are also some issues around development of physical infrastructure services; especially those that are essential to supply food to remote areas. In order to have effective distribution of food, sufficient transportation services are necessary pre-conditions of it (Dillon, et al. 2011; Rahim, et al., 2011). In regions similar to the far western hills of Nepal, road can help transport food cheaply as compared to other means like portering, air-lifting, or using animal transport system (GTZ, 2006; Sharma, 2012). These scholars argue that the Government needs to promote cheap transportation system rather than direct distribution of food (Richardson, 2010). However, out of a total of 75 districts of Nepal, four district headquarters are still not linked by road and twenty-five districts have only seasonal road such as in Bajura and Achham. This factor is a major obstacle in food supply strategy in the region (Nanda, 2012).

1.3.3 People's Demand Capacities

After the work of Amartya Sen (1981) on famines, the importance of entitlement and access to food came to forefront in the debate to reduce food insecurity and hunger. Sen's argument gives special attention to the capability of the people to demand food they require. The concept considers food insecurity as the result of demand failure. The failure occurs when it is not possible for a person/group to acquire enough food, through different entitlements, they need to survive (Dreze and Sen, 1989, p.22). Many studies have shown that getting access to food has been a matter of income, wealth and purchasing power (Collier, 1999; Lang, 2002).

At national level, the proportion of the working-age and employed population is a good indicator of an economy's ability to generate income and improve purchasing power (Amsalu, 2012). In Nepal, large numbers of poor people work in low paid seasonal agricultural jobs regardless of the work quality. According to CBS report (2008), 74 percent of the total labor force is engaged in agriculture. In addition, this report shows that 30 percent of total labor force is underused. Limited growth of agriculture and possibilities of its commercialization are a consequence of it. Data demonstrates that per labor per day productivity in agriculture is below one Dollar per day, which is neither sufficient for subsistence nor enough to generate agricultural surplus to support the growth of agriculture based industries (Thapa, 2011). Average production of cash crops per hectare has, however, been increasing; as there was average production of 3.2 metric tonnes per hectare during 1974-1980, which increased to 10.7 metric ton per hectare in the period of 2001-09 (MOF, 2009).

The socio-economic and income inequality is an emerging issue in Nepal. UNDP (2009) human development report discloses the per capita income (PPP in \$US) of all Brahamin and Chhetri to be 2027, that of Janjati (excluding Newar) to be 1405, Newar's to be 3097 and that of Dalits to be 977 US Dollar in 2006. Simultaneously, CBS Nepal Living Standard Survey (2011) has shown that nominal average per capita income for all Nepal to be 41,659 NPR (416 US dollar @ exchange rate of 1\$=100). In this, the poorest 20 percent populations per capita income was 15,888 NPR (189 US dollar @ exchange rate of 100) while the richest 20 percent earned 94,149 NPR (941 US dollar @ 100). Region wise, the people living in the far-western regions earn 28,584 NPR (285 US dollar @ 100); which is the lowest average income for all Nepal's regions.

The Nepal Human Development Report (2009) shows that poverty among the agricultural wage laborers is the highest. Poverty among agricultural labor occurs at the rate of 55.9 percent in 1995/96, 53.8 percent in 2003/04 and 47 percent poor in 2010/11 (CBS, 2005; CBS, 2011). A trend of poverty among variable land holding groups is not

decreasing at rate of decreasing in national average. CBS report shows that 47.7 percent of the poor in 1995/96, 39.3 percent in 2003/04, and 32 percent in 2010/11 were from landless and marginal cultivators. On the other hand, poverty among farmers who own more than two hectare was 38.9% in 1995/96, 23.8% in 2003/04 and decreased to 7.68% in 2010/11. The disparity in the distribution of wealth is greater among different caste groups. Around 46 percent of Hill Dalits live at the bottom wealth quintiles, while it is 9.6 percent for the hill Brahmin and 22 percent for the Janjati (Bennett, et al., 2008). In addition, poverty trend among different caste groups reveals that poverty among Dalits is now decreasing though very slightly. Fifty seven percent of the Dalits population living under poverty line in 1995/96 has been reduced to 45.5 percent in 2003/04 and 42 percent in 2011 (CBS, 2006; CBS, 2011).

Nepal presents still a very limited opportunity of income generation within the country. The CBS (2011) report shows that at least one member from 25 percent of total household are out of country for jobs. The figure put out by the report shows that around 2 million people are going out in search of jobs. In the far western region, labor migration to India is a common practice for coping with household food insecurity (WFP, 2009; Thieme and Müller-Böker, 2010). According to an estimate by Poertner et al. (2011), more than a million Nepalese were working in India in 2011. In the recent years, the migration to Gulf countries and Malaysia is becoming the major source of employment among the majority of youth. However, the access of the poor to these jobs is limited because they are not able to raise the seed money to finance the recruiting and transfer process. Further, because of significant male migration, shortage of labor has raised another important issue in agriculture productivity in the rural areas (Carter and May 1999; Adhikari and Hobley, 2015).

1.3.4 Food Consumption Concerns

In addition to food production, supply and demand ratio, food consumption and food utilization are other important aspects regarding to food security. Inequality in the

consumption pattern has been a prominent issue in the recent days. This aspect is not only depending upon food supply and purchasing power of the people. It depends upon health and sanitation facilities available to the people (Coveney and Santich, 1997; Olowogbon, et al., 2011). Sharkey, et al. (2010) and Belachew, et al. (2011) opine that the level of education determines the level of consumption and utilization of food. However, there are many issues regarding access to these services. Officially, opportunities exist for the people to have equal access to schools, drinking water, health centers and other community facilities in Nepal. In practice, however, the access to these services for the poor and Dalits is less than equal (FAO, 2004). In addition, discrimination in the distribution of food based on caste, age and gender in the country has led to a poorer consumption pattern among them (NPC, 2007).

Due to an inequality in the consumption patterns, there is a persistent malnutrition among the marginal groups. The intensity of malnutrition is 39.5 percent among the boys and 39.7 percent among the girls (NPC, 2007). Bennett, et al., (2008) report has shown that stunting problem is highest among the Muslims and Hill Dalits (both 26 percent). It is quite high also among the Hill Janajati (25 percent). A low body mass index indicates a serious food utilization issues among the twenty-four percent of Nepalese women (WFP, 2010).

1.4 The debate on food (in) security in Nepal

In the context of Nepal, policy makers have assumed that food security of the people significantly depends upon food production and development intervention directed toward production increase. The Government has been continuously focusing on food production since its first five-year plan (1956/57-1960/61). Nevertheless, it has introduced one more crucial plan known, the Agricultural Perspective Plan (APP) in the Ninth Five Year Plan (1997-2002). This was a 20-year master plan formulated in 1995 with the support of the Asian Development Bank (ADB) for increasing food production

of the marginal cultivators (NPC, 1995). However, production of food has not increased as planned, nor has, the capacity of resource poor farmers (marginal and land less) improved as expected (Pyakurel, 2012).

The issue of food insecurity in Nepal has an important social dimension. In many instances, it can be seen that socially marginal groups are suffering more from hunger and malnutrition than other groups (WFP, 2005; NPC, 2007). The issues of caste, ethnicity and gender based exclusion and inclusions are pertinent to point out this situation (Bennett, et al., 2008). A report of Team Consult (1999) found out that members of the Dalit and Indigenous groups are suffering most from hunger (Table-1.1). Bishokarma (2012) has stated that only seven percent of Dalits are self sufficient in food (for non-Dalits it is around 42 percent). For, the households of the poor with women as head child girls, and elderly persons, the same situation can be said to prevail (Adhikari and Bohle, 1999; NDHS, 2006). A very limited number of studies exist to show the cause and factors of household food insecurity.

Table 1.1: Food insecurity among Indigenous group and Dalits (in %)

Region	Indigenous group	Dalits
Terai	43	53.6
Hills	47.3	56.7
Mountain	58.3	89.7

Source: Team Consult (1999.p.29)

As already discussed, the food security of the marginal groups in resource scarce areas is not depending only on land. Evans (2009) argues that land-based livelihood strategies are coming under stress due to the incidences of climate changes. Climate change has negative impacts on the productive capacity of land and production of food (FAO, 2008b; Heltberg, et al., 2009; Regmi et. al, 2009; Douglas, 2009; Folberth, et al. 2010). This study also discussed the issues of male out-migration, which has a crucial bearing on the production of food. Furthermore, marginal groups have limited access to land. Land tenure institutions and practices get rigid so that the historically marginalized communities are unable to maintain their claims over land (Dalby, 2002; Kabeer, 2010;

Kuku et al., 2011). Land scarcity increases conflicting claims and counter claim by different groups, which could further marginalize the vulnerable communities (Homer-Dixon, 1999; Ohlsson, 2000; Upreti, 2004).

The preceding discussion shows that the majority of marginal people living in scarcity diversify their livelihood strategies for acquiring food (Berry, 1993; Boehm, 2005; Ellis, 2000; Ellis and Allison, 2004). The market, the public food distribution and food aid play an important role in meeting their food demands. In this situation, there is a need for seeking suitable options by them. Some scholars have stated that alternative livelihood options are emerging in Nepal with new development interventions (Ligal, 2006; Sharma, 2008; Awasthi, 2009; Sharma, 2012). These livelihoods options require identifying and implementing for improving the living conditions of the people in the resource scare areas.

In addition, burgeoning opinions significantly focus on policies and institutions⁶ to be the limiting factors to gain food security and the availability of the food resources (Leach et al., 1999; Springate-Baginski and Blaikie, 2007). They argue that food insecurity isn't a matter of scarce or sufficient food resources; it is actually a problem of prevailing policy and institution governing distribution, entitlement, claim and access to the resources (Mearns, 1996; Kirkby and Moyo, 2001; Bulte, et al. 2005). Weak policies in this regard are the major factors of hunger and malnutrition (Backeberg, 1997; Rosegrant and Ringler, 1997). Not only the formal institution, but more importantly, even the informal institutions such as caste, gender and religion play a crucial role in determining the livelihoods of the people (Savoia et. al., 2005; Casson et al., 2010 and Shahbaz et al., 2010). Adhikari (2010) and Ghale (2011) argue that caste and gender based discrimination and exclusion are more important aspect of access to food.

⁶The term institution used in this study refers both rule of game (North, 1990) as well as a regularized pattern of behaviors (Leach et al., 1999)

1.5 Research Objectives and Research Questions

In order to analyse and understand the multi-dimensional food security conditions of the people in the resource-scarce districts of the far western region of Nepal, questions have been set keeping the following objectives in mind.

Objective-1: To examine the state and patterns of food security in the study sites

Questions

- What are the state of food entitlement (including at inter and intra-household level) patterns in the study region?
- What is the governance and distribution of food channels in the study region?

Objective-2: To analyse and assess the benefits, constraints and factors in food security in the past and present

Questions

- What are the social, economic and political factors affecting the food security in the region?
- What is the state of vulnerability and coping strategies that help the marginal people to overcome it?

Objective-3: To assess the policies and institutions relating to food security targeting the livelihood objectives of the marginal groups

Questions

- How past policies and institutions relating to food security have targeted the livelihood objectives of the marginal groups?
- Which existing national and regional policies are dealing with food security in the region?
- Who is entitled to and able to exploit the major development incentives of food security programme, why?

Objective-4: To examine the alternative food entitlement opportunities that enhances equitable access of marginal groups to various resources

Questions

- What are alternative and innovative food security opportunities and support structures in the study region?
- Which institutional innovations could enhance equal access to various food security opportunities?

1.6 Organization of Thesis

The thesis comprises nine chapters. The first chapter is the introduction. In the first section of this chapter, I have given an overview of the context regarding food insecurity in Nepal (particularly among the marginalized communities and in resource scarce areas). I have discussed the rationale of choosing the far-western region as an appropriate site for this research. I then highlight the drivers of food insecurity. I have discussed the production, supply, demand capacities and consumption issues of food. Subsequently, I have argued the rationale for the study in the multi-dimensional context of food insecurity in Nepal. In this context, I have outlined the objectives and framed the research questions of this study.

Chapter Two discusses the literature relevant to the entitlement theory. In the first section, I describe why I have chosen this theory. Then I introduce the concept of resource endowment, exchange entitlement and capability set of the people. Then in subsequent sections, I discuss the gaps inherent with the theory such as the issues of private property as well as market and legal based exchange entitlements. The chapter also illustrates the framework of livelihood and capabilities to cover a broader aspect of food entitlement. Then, I discuss the concepts of exclusion and inclusions, as previous frameworks in this regard do not address it adequately. In the end, based on these discussions, I put forward the conceptual framework of the study.

In Chapter Three, I explain the research methodology adopted for this study. In the first section, I present evidence that the far-western region, the study site of my research, is a resource scarce area in Nepal. Next, I elucidate how I have used a mixed method strategy, explanatory design and multistage sampling method in the research. I show how I have used the tools and techniques of household survey, focus group discussion and key informant interviews for collecting information. Further, I describe the data validation process. At the end of the chapter, I write my personal experience that I gained in the course of this study.

Chapter Four deals with the socio-economic characteristics of sample households. The first section describes the structure of caste and sex, family size, education of the households and their involvement in major community groups. In the second section, I discuss the economic status of the sample households such as types of their houses and their major occupations and use of mobile phones by them. In the last section, I compare the data of some of the samples with the national data.

In Chapter Five, I present the results of discussions related to Objective One of my research. In the first section, I discuss the state and patterns of food security. In the second, I assess the governance and targeting mechanisms of food distributing agencies such as the market, the World Food Programme and the Nepal Food Corporation. I have shown that the majority of households depend upon the market to meet household food deficit. I show that these agencies lack appropriate targeting approaches. Next, I present the caste and ethnicity dimensions of food entitlement. I have shown that Dalit households are more insecure in terms of food than other social groups. In the last section, I discuss the gender dimensions of food security, showing that gender-related institutions are major factors that affect women in terms of their food need.

Chapter Six presents the results of discussions on Objective Two of this study. It deals the economic factors such as development of market, construction of road and effects of male outmigration; with social factors such as caste and ethnicity based exclusion; and with the political factors such as conflicts arising from food entitlement to different categories of people. It analyzes how local people try to cope with the negative impacts of development and exploit these trends and factors to their advantage.

Chapter Seven presents the results and discussions laid down in Objective Three of this study. It concentrates with government policies on food security. In the first section, the past policies of the Government are reviewed. I have shown how the targets of these policies have not been achieved, as expected. Then I analyze the impacts that different policies have on food production, access to food and consumption entitlement,

and show that these policies have little impacts on the entitlement of the marginal communities.

Chapter Eight explores the innovative alternative food entitlement opportunities for the benefit of marginal communities in the area. In the first section, I explore the emerging alternative to food production possibilities through a new form of land tenure by leasing the public land, utilization of forestland, and contract farming. Similarly, opportunities exist for high value organic cash crops production by using organic manure. In the next section, I present some other alternative income opportunities for the poor through non-farm wage methods such as out migration, forest based entrepreneurship, and through tourism. The chapter ends with a discussion of the pattern of consumption of the local production.

The last chapter sums up the key messages and recommendations based on this research. It concludes that the food entitlement framework does address the issues of exclusion and inclusion. It shows that land still matters in gaining food security and that seasonal migration constitutes a major income source among the poor. Government policies and food security programs are not able to promote marginal cultivators, as they have limited targeting approach and insufficient interventions to help broader livelihood approach. Similarly, social inequities continue to exist in food security situation. In this regard, historic development has left Dalits still in a vulnerable position and gender and caste based institutions still function against them for their food security. However, social changes are happening in the region because of new roads that generate many opportunities enabling people to adopt multi-faceted strategies with potentialities. Similarly, this study has concluded that public interventions are still crucial for a condition of inclusive food security. There is need for evolving a policy of land redistribution and promotion of marginal people to strengthen their income sources. Government should formulate specific policies that are suitable to help poor Dalits and women. In addition, it should institutionalize the innovations that people are adopting to improve their economic status.

CHAPTER TWO

REVIEW OF LITERATURE

In Chapter One, I have discussed the situation of food in/security at global and national level. The chapter talked about the issues of food production, supply, entitlement, poverty, consumption and utilization. These topics have generated many debates regarding food in/security. Therefore, in this chapter I have reviewed pertinent literatures for framing this research.

This research employs the Entitlement Theory developed by Amartya Sen in 1981. This theory provides the framework for analyzing the issues of access to food. It focuses broadly on production and exchange entitlement of the people to acquire food they need. In this regard, it gives special attention on legal means and market mechanism to generate entitlement to food. However, it also gives modest interest to broader aspects of resource endowments as well as the role of non-market institutions.

In addition to that, it becomes necessary to look at beyond the debates and discussions of entitlement framework of Sen to generate a complete picture of how and what regulate access to food. In this regard, the issues of poverty, livelihoods and capability happen to be very crucial. More importantly, the abovementioned concepts and frameworks have not adequately addressed the subjects of exclusions and inclusions. To understand food security in the context of society like Nepal, it is relevant that the issues be looked at from a more holistic, people-centered perspective.

Therefore, I attempt to address these gaps by reviewing the pertinent literature on the subjects. Building on the entitlement theory of Sen, I have developed conceptual framework for the study at the end of this chapter.

2.1 Why Entitlement Theory

After the work of Sen (1981) on famines, the importance of entitlement and access to food leads the debate on food insecurity and hunger. Sen states in his book 'Poverty and Famine: An Essay on Entitlement and Deprivation' that:

Starvation is the characteristics of some people not having enough food to eat. It is not the characteristics of there being not enough food to eat. While the latter can be a cause of the former, it is but one of many possible causes (Sen, 1981, pp.1).

His theory mainly concerns on access to food instead of the broader questions of its production and supply to understand the situation of food in/security and hunger. He counters the Malthusian thesis of food production and population growth⁷. He posits evidence that there is sufficient food available in the globe to feed the entire population. Maxwell (1996) and Alcock (2009) articulate that after his agenda, the issues of food insecurity have shifted from the aggregate supply at the global/national level to the localized demand of food at the household/individual level.

In the case of Nepal, the issue of access to food is very important. Even in the time of surplus food in national food balance sheet, majority of households face regular shortage in a year. There are many evidences that many households are vulnerable to food insecurity even within surplus districts. The broader issues of access to resources are crucial to understand the food security situation of different categories of people living in different parts of Nepal. Therefore, the entitlement framework provides a broader structure to know the actual condition of issues in the country.

⁷Thomas Malthus (1806) was the first scholar who addressed food scarcity as an issue for humankind. He defended the hypothesis that growing global population will limit the Earth's capacity to produce sufficient food the population need (Cohen, 2001).

2.2 Framework of Entitlement Theory

Sen uses the term “entitlement system” in his theory, and introduces the concept of resource endowments and exchange entitlement as crucial components of the “system”. In his words, endowments refer to the rights and resources that a person or social unit has. These resources are a person's initial ownership, for instance, of land or labor power, which are transformed into a set of entitlements (Leach et al. 1999). Sen defines exchange entitlement as following:

In a market economy, a person can exchange what he owns for another collection of commodities. He can do this exchange either through trading, or through production, or through a combination of the two. The set of all the alternative bundles of commodities that he can acquire in exchange for what he owns may be called the ‘exchange entitlement ‘of what he owns (Sen, 1981, pp 3).

The exchange entitlement represents the set of alternative commodity bundles that a person can command in a society using the totality of resource endowments he or she has to exchanges his/her endowments to acquire food. To describe ownership and entitlement, he introduces the concept of entitlement relations. These relations occur through trade, production, own labor, transfer and inheritance based entitlement. For example, a farmer produces food from his/her land for self-consumption or he/she sells what he/she produces to get food. A laborer sells his/her human power to derive income by which he/she obtains food available in market.

However, this entitlement theory itself generates many debates. Sen himself recognizes the limitations, which are existing in the framework (Devereux, 2009). He agrees that the framework does not address the issues of the fussiness in open access property, starvation by choice, disease-driven mortality and extra-legal entitlement transfers. The next section of this chapter will discuss the questions in detail, which are relevant for this study.

2.3 Discussions on Entitlement Framework

Many scholars argue that Sen's framework primarily focuses on private resource endowment and market based exchange entitlement. They claim that he missed other important sectors of entitlement. This section reviews these debates concerning production and exchange entitlement.

2.3.1 Concept of Property Right

The first line of debate is related to the concept of resource endowment. Sen focuses on private resource endowments is essential for a person's food production entitlement. In this regard, he focuses on individual property right over resource endowments. Individual properties comprise land, labor power, skills etc. He argues that a person either produces food himself or sells his property to buy food.

In a private ownership economy, command over food can be established by either growing food oneself and having property right over what is grown, or by selling other commodities and buying food with the proceeds (Dreze and Sen, 1989, pp 23).

However, Bromley (1989) argues that the framework is unclear with respect to state, common and open-access property. Theory of property right claims that wide ranges of tenure to productive resources are essential for food production. Hussain and Nelson (1998); Gadi and Mushtaq (2001); Merton and Heller (2008) argue that people's access to various production factors determine the level of production. Ostrom (2000) discusses that these privileges include the right of access, withdrawal, management, exclusion and alienations. Similarly, Fortman (1990) states that a person's entitlements not only depend upon sale of his/her possessions but also rely on his/her affiliation to institutions and legal right as well as arrangements provided by state and international legal orders. Agrawal, (1994) and Maxwell (1996) argue that it also depends upon

traditional rights in communal resources, external support system from Government and non-government, traditional social support system through patronage, kinships, caste grouping, and friendship.

2.3.2 Entitlement Failure: Demand vs Response

Other debates over the entitlement system concept are concerned with mapping of Sen's exchange entitlement. The first debate relates to the question whether the food insecurity is the result of response or demand failure. Sen's theory considers it to be a result of demand failure. He focuses on failure of a person's demand capacity to acquire sufficient food. The failure occurs when it is not possible for a person/group to acquire commodity bundles with enough food to survive (Dreze and Sen, 1989, p.22). Tiwari (2007) builds on it and argue that it fails as long as people's ownership bundle remains unchanged and the exchange entitlement does not satisfy his/her basic needs.

However, Devereux (2009) and Cribb (2011) indicate that the failure is also due to limited response of the Government and agencies responsible for protecting households from hunger. They argue that the failure may be caused by the lack of accurate and timely information, ineffective humanitarian intervention, lack of political will to protect vulnerable citizens, and late or non-response by donors. In this situation, the issues of food supply become a crucial concern.

The supply theory states that shortage of food is the result of failure of adequate food supply to feed the needy population (Devereux and Maxwell, 2001; Sohlberg, 2006). Koning and Ittersum (2009) and Rutten et al. (2013) suggest that food may be produced everywhere in the world but the most vital thing is how it is supplied to the deprived areas. World Food Conference held in 1974 in Rome organized by FAO, the first major inter-governmental event on the issue, solely focuses on the question of food supply at national level. It defines world food security as:

The availability at all times of adequate world supplies of basic foodstuffs, primarily cereals, so as to avoid acute food shortages in the event of widespread crop failures or natural disasters, to sustain a steady expansion of production and reduce fluctuations in production and prices (FAO, 1974: par.1).

The supply debates in the 1950s and 1960s focused primarily on the transfer of food by means of trade and aid between countries (Geier, 1995). These discussions explain that the trickle down approach is sufficient to allocate available food downwards. The approach of 'liberalization', exemplified in the 1995 through the creation of the World Trade Organization (WTO), encourages involvement of private sectors that facilitates the integration of transnational agribusiness and food markets. Salih (2003) in these regards gives attentions on the aspects of food buffer stock systems, price stabilization, aid, financial facility schemes, trade policies and imports. In addition to market, Paarlberg (2002) expresses that food aid is another mechanism where existing food distribution institutions have generally performed well. Bezu and Holden (2008) provide evidences that this mechanism plays an important role in keeping destitute people alive.

Food distribution Governance

Regarding food supply debate, the important apprehension is how it reaches to the people in need (Sen 1999; Mancusi-Materi, 2002). Suleri and Ramay (2009) discuss that unequal distribution of food is a challenge leading hundreds of millions of people to live below food poverty line. Therefore, the governance of food distribution is becoming central issue to the supply aspect of food security.

Many concepts exist regarding governance. DFID defines governance as the structure and process of agencies involved in development interventions (DFID, 2002). Salih (2003) argues the structure of food security governance includes The Government,

farmers, environmentalists, the social justice lobby, human rights groups, the “right to food” activists, food technology producers, and exporters. These structures need to be a responsive, transparent, equitable and appropriate to local conditions (Sphere, 2004).

Swinnen et al. (2007) propose governance of food and agriculture by its level and sector. Table 2.1 shows that there are three level of food security governance. These levels are: international, national and local. It also incorporates that there are three sectors, namely private, public and civil society.

Table 2.1: Governance of food and agriculture, by level and sector

Level	For-profit private sector	Public sector	Not-for-profit sector
International	MNCs	Inter-governmental organizations	INGOs
National	National corporation	National government	NGOs
Local	Local private trade-person	Local authorities	CBOs

Source: Swinnen, 2007, p.42

In addition to this, Cavalcanti (2003) and Spring (2009) state that when analyzing food security governance it is equally important to assess non-food policies such as trade, transport, and marketing. It also depends upon the governance in clothing, shelter and health (Falvey, 2010).

2.3.3 Entitlement Instrument: Market and Legal mechanism

In section 2.3.2, I discussed about one debate in relation to exchange entitlement. This section is concerned with the framework of Sen, which focuses on market economy and legal means.

Sen intends that the entitlement of a person stand on market instruments. Criticizing that Sen has given high priority to income and purchasing power, Alcock (2009) points out that the entitlement hypothesis regards famines as purely ‘economic disasters’ as opposing the Malthusian conception of famines as ‘natural disasters’. Murton (2000)

suggests that starvation and famine are consequences of the social process, rather than the economic process. Edkins (2000); Elahi (2006) and Rubin (2009) talk about non-market institutions such as traditional law or socially enforced rules that establish a person's entitlement. These social relations in a particular region define the distribution and access to resources including food (Blaikie, 1989). Gasper (1993, p. 694) implies that people's access to resource also depends on particular relationships with the authorities.

Similarly, Sen's analysis concentrates on legal means for commanding food a person requires. He claims that people gain their entitlements through the mechanism available in the society. He states:

The entitlement approach to starvation and famines concentrates on the ability of people to command food through legal means available in the society, including the use of production possibilities, trade opportunities, entitlements vis-à-vis the state, and other methods of acquiring food (Sen, 1981, pp 45).

However, De Waal (1993); Davies (1996); Edkins (2000); and Dowlah (2006) denote that Sen's focus on legal mechanism does not truly represent the issues of hunger. Bloomer (2008) argues that it does not analyze illegal transfers of food such as looting, appropriation and corruption. These arguments indicate that the concept perceives the food insecure people as a passive social unit and undermines the theory on struggles of people to escape from food poverty. Therefore, it is very difficult to apply the framework in the situation of conflict where the conflicting parties partially or entirely break down the existing legal structures (Lecoutere, et al., 2009).

In addition to this, Gore (1993) refers that Sen ignores how legal rules work in practice and how socially enforced moral rules restrict and facilitate the entitlement of certain people. Woolcock and Sage (2005) and McMichael (2008) argue that discussions of legal rules too often ignore how society and culture construct these rules to legitimize appropriate behavior of the social units. Leach et al. (1999) developed the concept of

“environmental entitlements” which includes extensive range of socially sanctioned as well as formal-legal institutional mechanisms. These institutions play important role in gaining access and control to resources and entitlement.

2.4 The Capability: Deprivation to Capabilities

The capability approach is a broad framework that includes central ideas of the food entitlement framework developed by Sen in the mid-1980s. The approach sheds light on the issues of poverty and deprivation, which are important for analyzing complete set of food entitlement. The approach considers poverty as deprivation of basic capabilities rather than merely as lowness of income, which is the standard criterion for identification of poverty (Sen, 1999). The state of premature mortality, significant undernourishment, persistent morbidity, widespread illiteracy and other failures reflect these deprivations.

According to Sen (1993) individuals have a set of capabilities (opportunities) to achieve what they want to be and engage with (functioning). The capability approach assumes that human poverty is not what people lack or do not have but rather it depends on what people can or cannot do (Bebbington, 1999; Rist and Prado, 2012).

Table 2.3: The capability approach builds upon Sen’s entitlement framework

Resource endowments	Exchange entitlement	Capability sets
Natural resource based	Economic entitlement	Material and non material functioning or capabilities
<ul style="list-style-type: none"> • Land • Forest • Cattle • Water • Agricultural inputs 	<ul style="list-style-type: none"> • Employment • Food production entitlement • Housing 	<ul style="list-style-type: none"> • Better health • Better income • Better community participation
Non-natural resource based	Non-economic	<ul style="list-style-type: none"> • Well respected • Sufficient nutrition • Well education
<ul style="list-style-type: none"> • Education • Knowledge • Skills • Physical health • Labor power 	<ul style="list-style-type: none"> • Education • Health • Bargaining power • Social prestige 	

Source: Adapted from Sen, Leach et al 1999, Tiwari 2007, and Robeyns, 2005

Capabilities are what people can do or be with their entitlement (Leach et al., 1999) (Table- 2.2). The entitlements are transferred into wellbeing and capabilities (Rubin 2009). What is ultimately important is that people have the freedom or valuable opportunities (capabilities) to lead the kind of lives they want to lead, to do what they want to do and be the person they want to be (Robeyns, 2005). This capability has two parts: valuable beings and doings (functioning), and freedom (Alkire, 2005). Functioning could therefore be either potential or achieved. For this study, I have included the issues of consumption and utilization as important part of capability because these are important capability set for better health and sufficient nutrition.

2.5 Sustainable Livelihoods Framework

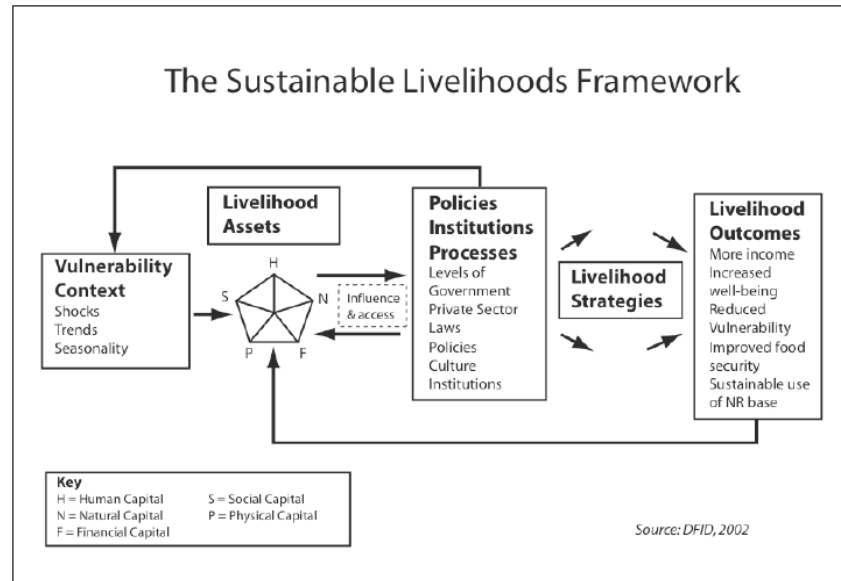
There are many arguments that the entitlement theory confines its analysis to food as only one outcome that people require. The theory assumes food as a primary need of the people. On the other hand, many opinions illustrate that the food security is only one component of broader livelihood security of the people (Chambers and Conway, 1992; Davies, 1996). de Waal (1989) provides evidences from the case of famine in Darfur, Sudan in the 1984/85, that some people chose to go hungry to preserve assets and future livelihood (de Waal 1991, p. 68 cited from Maxwell, 1996). Therefore, people not only have objectives to secure food but they also have plans to protect other household assets (Akter, 2012).

Therefore, it is necessary to discuss about broader aspect of livelihood security when analyzing the issues of hunger. In this regard, Chambers and Conway (1992) define “A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living”.

For this study, I have adopted the sustainable livelihoods framework developed by DFID 2002. The framework presents a wide range of factors that affect people’s

livelihoods, and typical relationships between them. I have analysed how this framework addresses the gaps existed in the entitlement framework.

Figure 2.1: Sustainable livelihoods framework



Source: DFID, 2002

Figure 2.1 shows that the framework has five components. These are vulnerability context, livelihood assets, policy and institutions, livelihoods strategies and livelihood outcomes.

The Vulnerability Contexts structure the external environment in which people exist. These contexts include critical trends as well as shocks and seasonality over which the affected people have limited or no control. Yaro (2004) sees vulnerability as a triad comprising the threats (that face peasant livelihoods), the capabilities of peasants (which is a function of their resilience and sensitivity), and the outcomes of their strategies and entitlement set. These sets are either positive or negative. Evans (2011) points out that global factor such as climate change, high input prices and competition are some of the threats for the vulnerable people. Similarly, he discusses some of the other factors such as illness, death of a wage earner, an additional child, and so on. Timmer (2000) in these

regards discusses about supply and demand shocks. The supply shocks include drought, floods, damage from pest/wild life, disease, landslide, hailstorm, conflict, and extra entitlement transfer. The demand shocks include price hike, income decline, illness, death of livestock and earning people.

Similarly, the livelihood framework identifies five core asset categories upon which people build their livelihood strategies. These assets are human (skill, knowledge, labor, health, etc), social (members in groups and networks, reciprocity, trusts, etc), natural (forest, land, water, etc), physical (basic infrastructure such as transport, drinking water, shelter, sanitation) and financial (income, saving, transfer from state, remittance, etc). These assets enable people to pursue different livelihood strategies and achieve their livelihood objectives. The approach builds on the idea that vulnerable people use a range of material and non-material assets to pursue multiple strategies (Rubin, 2009).

At a time, the framework discusses about the transforming structures (public sectors, private commercial, civil society) and processes (policy, institution, legislation, culture) that shape livelihoods of the people. These may be formal and/or informal, mediate claims and access to diverse assets and strategies they adopt to achieve their outcome (Kirkby and Moyo, 2001). These play important role to convert livelihoods assets to strategies (De Haan and Zoomers, 2005). These structures and processes also affect the vulnerability context because these influence and determine ecological or political trends (Kollmair et al., 2006).

In addition to this, the framework discusses the livelihood strategies, which denote the range and combination of activities and choices that people undertake in order to achieve their livelihood goals. It signifies that people's livelihoods not only depend upon natural resources as Hussein and Nelson (1998); Bernstein (2005); Brown (2011) and Thulin and Allegrini (2012) discuss but people also highly diversify their off-farm cash economy strategies (Berry, 1993; Boehm, 2005; Krautkraemer, 2005) and non-farm income earning strategies (Thompson, 2001; Ellis, 2000).

Finally, the framework describes the livelihood outcomes. These outcomes are the achievements or outputs of livelihood strategies. These include more income, increased well-being, reduced vulnerability, improved food security, and more sustainable use of the natural resource base.

2.6 Building on Entitlement Theory

Akter (2012) writes that the livelihoods approach had evolved from Sen's theory on entitlement. Carter and May (1999) compares between entitlement mapping and livelihood mapping. They write that the livelihood assets form the basis for gaining access to commodity bundles describes by Sen. Similarly, the livelihood strategies are similar to exchange entitlement.

I have built upon the entitlement framework using the broader concept of poverty and livelihood security. As discussed by Rubin (2009) I will use a range of material and non-material assets to outline the concept of resource endowments. Carter and May (1999) discuss that the poverty is a matter of not only having few assets, but also of constraints which limit the effective use of those assets. The entitlement framework has given little attention to these constraints. The policy and institutions of the livelihood framework will play important role to define these constraints in entitlement framework. Similarly, broader aspect of both farm and non-farm livelihoods strategies will support to build the exchange entitlement, which goes beyond the market based exchange. As I have already discussed that the entitlement framework focuses on food as only result of entitlement, the livelihoods framework provides range of livelihood outcomes. These outcomes will be supportive for framing the capability sets.

2.7 Gaps in Entitlement and Livelihood Notions

Previous sections of this chapter discussed the concepts and debates on the entitlement and livelihood framework. I perceive that these frameworks have limited relevancy to use directly in the context of Nepal. From social perspective, there are many gaps. This section describes these limitations.

The livelihood approach does not analyze clearly how gender and exclusion constructs vulnerability, access to livelihoods assets, institutions, strategies and food security. Kasper (2004) express that the approach does not sufficiently address the issues of inequality in society. Scoones and Wolmer (2003) argue that it ignores differences in the position of social units in society, politics and power. It discusses very slight about social structure, relations and disparities. In addition to this, it gives little attention to how relations of class, caste, gender, ethnicity, religion and cultural identity organize livelihoods of particular section of people (Carr, 2006).

Swift and Kate (2001); Yaro (2004) and Shahbaz (2009) claim that the approach does not provide ways to deal with distributional issues. It centers on the access to assets and its potential improvement but does not explain historical aspect of cause of unequal access to assets (Shahbaz et al., 2010). There are also gaps about long-term shifts in rural economies and wider questions of agrarian change (Scoones, 2009) which requires, as Bernstein et al. (1992) point out, asking the basic questions: who owns what, who does what, who gets what and what do they do with it?

In addition to it, the approach does not explain basic questions of political economy and history. It does not indicate the nature of the state, the influence of private capital and terms of trade, alongside other wider structural forces that influence livelihoods in particular places (Scoones, 2009). The concepts of political ecology support to link these broader political-economic structures and local level livelihoods (Peet and Watts, 1996).

In the same way, the concepts of feminism help to link gender and broader structural forces defining power relations in diverse livelihood settings (Kabeer, 1994).

Similarly, Sen's entitlement framework gives little attention to social dimensions of food entitlement. It focuses on the mode of production, the structure of ownership, and the socio-economic and legal arrangements of society (Yaro, 2004). Nevertheless, the framework explicitly explains that a person's entitlement depends on his or her position in the economic class structure of society (Sen 1981). It views a social unit as an economic class but not a social and political entity. There are also arguments that the framework focuses mostly on "entitlement mapping". It discusses how social unit converts his/her resource endowments into entitlements, and gives limited attention to endowment mapping, i.e. how people gain endowments (Calamia, 2005). Devereux (2001) argues that entitlement framework is a-historical; it tells very little how history structures resource endowment and entitlement.

Kabeer (2000); De Haan and Zoomers (2005); Kabeer (2006); Acharya (2007); Dani and De Haan (2008); IIDS (2008) and Veselinović et al. (2012) describe that there are many evidences the situations of exclusion cause the poverty of particular people, leading to higher rates of food insecurity among affected groups. It makes the people poor in terms of income, health or education by denying access to resources, markets and public services.

Therefore, the entitlement and livelihood framework are inadequate to understand the poverty for analyzing the food in/security situation of Nepal. Socio-economic dimensions of food insecurity are crucial issues in the country. I have already discussed in chapter one that the socially marginal households are suffering more from hunger and malnutrition than those of other groups. Within households, the women head, child girls, elderly and differently abled persons bear the same situation.

Therefore, it is essential to understand the issues of caste, ethnicity, gender and land availability based exclusion and marginalization in the context of Nepal. To understand it, it is necessary to discuss the concept of exclusion and inclusion relevant to food security. The next section will describe about it.

2.8 Concepts of Exclusion and Inclusions

This section appraises the concepts and issues of exclusion and inclusion. It analyzes the relevant literatures and practices that support in framing of the issues. Then, it extracts some variables from these issues to construct broader framework of this study. There are many literatures, which show that the concept of exclusion has multi-dimensional characteristics. DFID (2005) shows that in this situation a group of people who are disadvantaged in society. It stated that:

Exclusion describes a process by which certain groups are systematically disadvantaged because they are discriminated against on the basis of their ethnicity, race, religion, sexual orientation, caste, descent, gender, age, disability, HIV status, migrant status or where they live (DFID, 2005, p.5).

Beall and Piron (2005) explain that exclusion is a concept that can describe a condition on one hand as well as a dynamic process on the other. The condition of exclusion is a structural concept. This talks about the position of a person or group of person in a specific structure of the society. These structures include the position of people in physical facility, gender, caste, ethnicity, religion, age, power, employment, participation in community affairs, land ownership, production structure, citizenship etc. People who are in systematically disadvantaged positions are at the state of exclusion. They are physically isolated people, female, low cast people, indigenous groups, religious minority groups, powerless groups, non-citizens, laborers, etc. They are excluded groups.

Similarly, the concept of dynamic process is institutional dimension. De Haan (2007) argues that exclusion is a process of institutional bottleneck. These are the procedural barriers, which systematically block certain groups to come out from his/her situation. Bird and Shepherd (2003) mark that corruption, intimidation and physical violence, and the nature of the local and national political elite determine the extent of exclusion. These barriers may be formal or informal. Formal hurdles include institutionalized road bias (Chamber, 1992), failure of state and market (De Haan, 1999), policy gaps (Ghale, 2011), land tenure (Nepali, 2010), etc. The informal obstructions include caste and gender based institution (Adhikari, 2010; Kabeer, 2010), unequal power relation (O’Laughlin, 2004; Dani and De Haan, 2008), production relation (Blaikie, 1989; Camrun, 2002).

These exclusions are the historical failures of support structures to address the issues of excluded groups. Minot et al. (2003) emphasize that the situations of exclusion are the byproduct of economic growth or no growth. In this process, some households take advantage of new market opportunities and earn incomes much higher than average. In addition to this, Gore (1993) argues that a pattern of social differentiation emerges between people who have successfully chosen trajectories of upward mobility, and those who have not. Then, the later groups are excluded.

The above discussion shows that there are many forms of exclusion. These include social exclusion, political exclusion, geographic exclusion, economic exclusion and others. However, I have given special attention to the aspect of social exclusion⁸. This type of exclusion is a group or collective phenomenon rather than an individual one (Kabeer, 2006).

In the context of Nepal, it is more pervasive than other aspects of exclusion. In this regard, I have adopted the excluded groups defined by the Government of Nepal. NPC

⁸Social exclusion and poverty are then the consequence of social closure, a form of collective social action which gives rise to social categories of eligible and ineligibles (de Haan and Zoomers, 2005, pp-33).

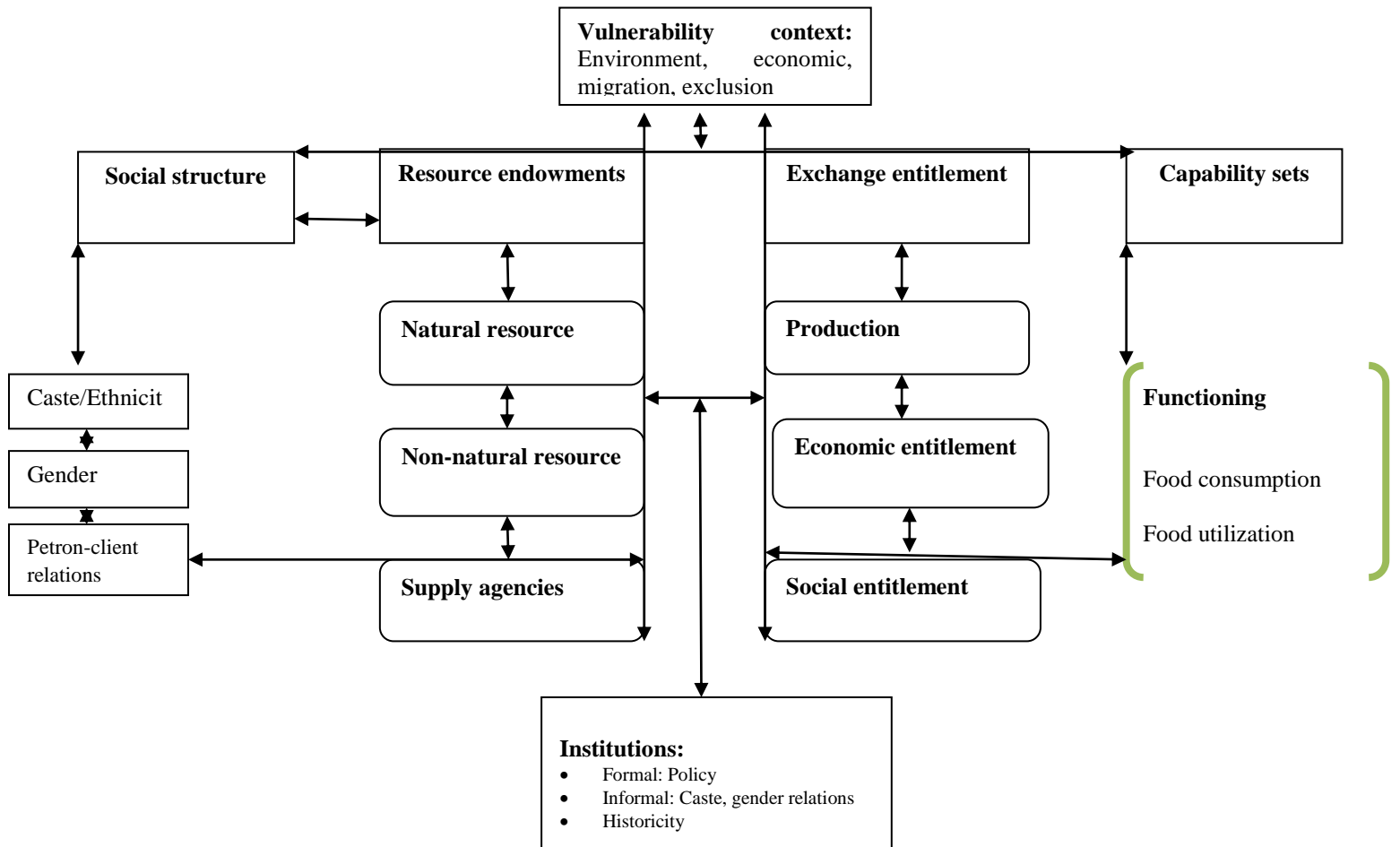
(2007) categorized women, Dalits, Indigenous Nationalities, *Madhesi*, Muslim and persons with disability as socially excluded groups. Later, MOLD (2009) categorized it into economically excluded groups such as the poor of all caste, ethnicity, location and gender and socially excluded groups such as Women, Dalits, Adibasi Janajati, Madhesi, Muslims, people with disabilities and people of geographically remote areas.

2.9 Conceptual Framework for the Study

Figure 2.3 shows the conceptual framework for the study. I have developed this framework by analyzing and building on the theories of entitlement, livelihoods and social exclusion. I have described the variables of the concept in below mentioned figure's description section.

The earlier frameworks (Entitlement, Capability and Livelihood) lack the concepts that describe adequately the issues of diversity in society and different relations among them. This framework recognizes that there are diversities in society. It has put social structure in the first part. The structure includes social, economic, political and sex groups. It also looks at the relationship among/between them. It analyzes how different categories of people using their diverse assets and entitlement get diverse capability set. The framework includes trends and factors. These include economic (market, road construction, price hike); conflicts (Maoist conflicts, displacement), migration (internal and external) and exclusion. It assesses how vulnerability trends and factors differently affect the resource endowment, exchange entitlement and capabilities of different categories of people.

Figure 2.2: Food exchange entitlement framework



Source: Developed by Author, 2013

Similarly, the framework includes wide ranges of resource endowments covering both natural (land, forest, cattle, and agricultural inputs) and non-natural (education, skills, position in society, etc) resources. It consists of both common and open access natural resources. In this regard, it analyses patterns and historical cause of unequal resource endowment among different groups of people. It also includes supply agencies (market, food aid and public food distribution) as important endowment for them. At the same time, the framework takes account of wide range of exchange entitlements. It

includes production entitlement (food, cash crops, meat, and milk), economic entitlement (employment, purchasing power, income, saving) and social entitlements (bargaining power, claim). It also examines how the exchange entitlement converts into capability set. These capability sets include food consumption, utilization, good health, education, and drinking water. It assesses how these capability sets influence on entitlement, resource endowment and social relations. Most importantly, the framework includes the role and impacts of both formal and informal institutions on food entitlement of different social groups. It includes formal institutions such as the Government policies (land reform, agriculture, forest, health) and informal institutions such as caste, ethnicity, gender, age, disability, politics and power. The analysis of these institutions include at macro, meso and micro level.

CHAPTER THREE

RESEARCH METHEDODOLOGY

The previous chapter discussed the entitlement framework that I utilize for this study. It reviewed pertinent literatures related to the entitlement theory of Amartya Sen (1981). Building on this theory, and by adopting relevant literatures of other scholars, the chapter developed conceptual framework for this study.

In this chapter, I introduce the research methodology that I employed in the field study. I selected three VDCs of far-western region for the study. The region was appropriate for me because this study has focused on resource-scarce area. In the first section of this chapter, I provide evidences to support my claim that the region is resource-scarce. In the second section, I provide a brief description of the selected districts, which also shows the level of scarcity in the region. In the third section, I describe the range of tools and techniques of research methods that I used in the field to collect information. In the fourth section, I discuss how I used different tools to validate the data. In the last section, I elaborate my personal reflection that I gained during this research.

3.1 Study Site as a Resource Scare Area

For the study purpose, I selected VDCs and districts of far-western region. Map 3.1 shows the location of the region, three districts and three VDCs. It shows that it borders with India in Southern and Western parts and with China in Northern part. There are nine districts in the region. Among them, I selected three districts for this study purpose that represent Terai, Hills and Mountain physiographic region of Nepal, namely Kailali, Achham and Bajura. From each district, I selected one VDC each, Fulbari, Birapth and

Barabis, using the criteria of level of food deficiency, mixed population and road connections. The region occupies about 13 percent of total area of country. It has almost 2.5 million people, which is 9.5 percent of nation's total population (CBS, 2011).

Figure 3.1: Location of research sites

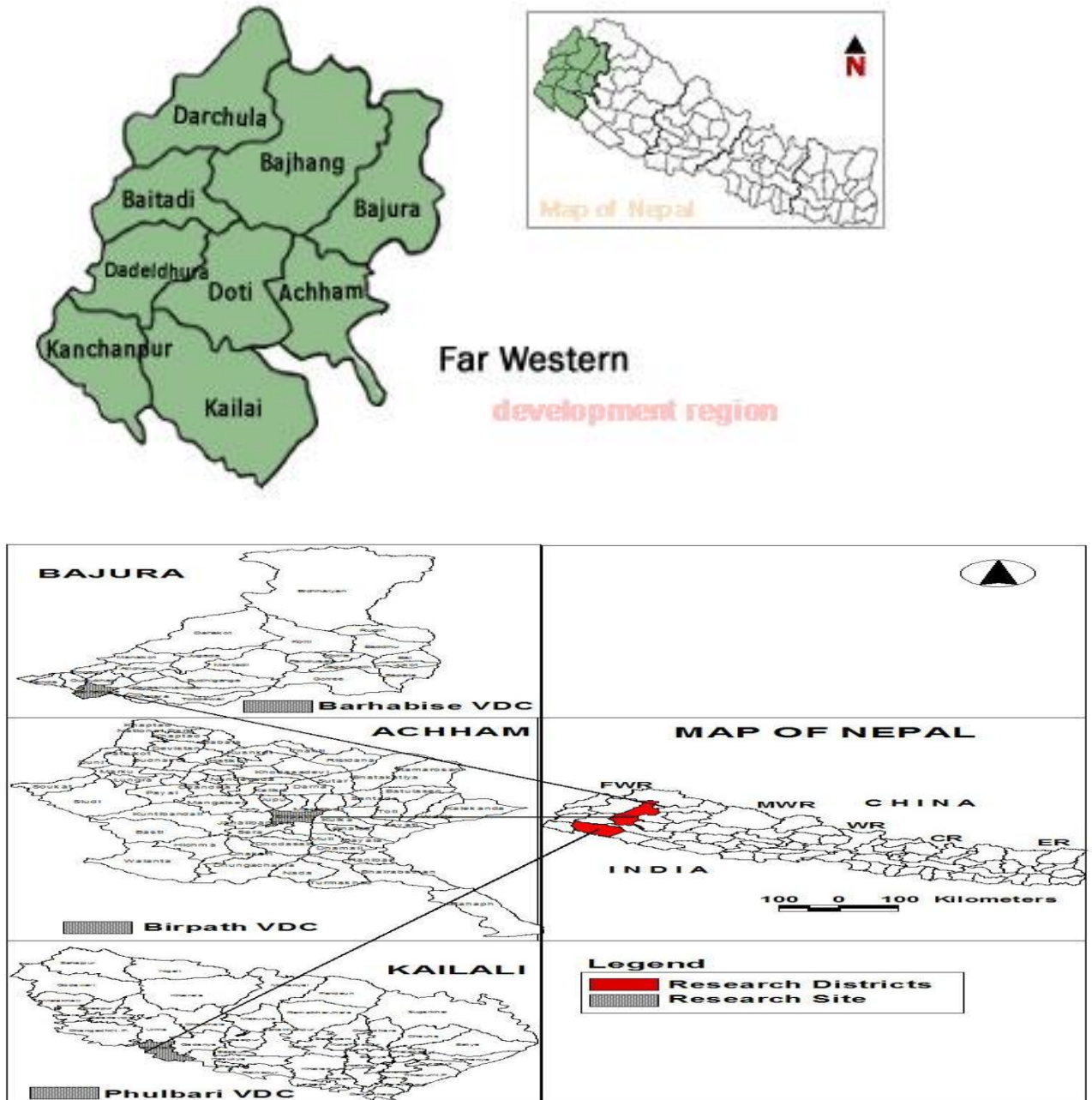


Table 3.1 shows the situation of total household, per- capita agricultural land, literacy rate, average life expectancy, per-capita income, poverty, and facilities of financial services, road, health and drinking water that prove that the region is resource-scarce in comparison with other regions of Nepal.

Table 3.1: Regional distribution of resource endowments in Nepal

Resources	Unit	Nepal	EDR	CDR	WDR	MWDR	FWDR
Total households	No.	5423297	1230743 (22.6%)	1962238 (36.2%)	1065599 (19.6)	695014 (12.8%)	46970 (8.8%)
Per-capita Agricultural Land	Hec.	0.7	0.9	0.6	0.6	0.6	0.6
Literacy rate 5 yrs above	%	65.9	67.1	63.9	71.0	64.2	63.5
Average Life expectancy	Year	63.7	66.2	65.7	64.1	57.2	61.3
Health service centre	No.	34593	8064 (32.3)	10765 (31.1)	7506 (21.7)	4894 (14.2)	3364 (9.7)
Per-capita income	NRs	41,659	37818	49128	45651	30941	28584
Poverty	%	25.2	21.4	21.7	22.3	31.7	45.6*
Bank and financial centers	No.		200	806	266	87	48**
Road length	Km.	13,223	1974 (21%)	2684 (29%)	1666 (18%)	1883 (20%)	1192 (13%)
HH without toilet	No.	2070012 (38.2%)	489153 (39.7%)	707755 (36.1%)	287868 (27.0%)	337650 (48.6%)	247586 (52.7%)
Safe drinking water (tap/piped)	No.	2591379 (47.8%)	444771 (40.3%)	941270 (48.0%)	685621 (64.3%)	330425 (47.5%)	189292 (36.1%)

Sources: DOR, 2007; DHO, 2009; NRB, 2009; UNDP, 2009; CBS, 2011; CBS, 2011a

Note:

- EDR: Eastern Development Region
- CDR: Central Development Region
- WDR: Western Development Region
- MWDR: Mid-Western Development Region
- FWDR: Far-Western Development Region

Table 3.1 shows that the far-western region has the lowest per-capita arable land holding among five regions of the nation. It shows that per capita availability of land in the region is 0.6 hectare, which is the lowest in the nation while it is 0.7 hectare in average at the national level. Twenty-two percent of total households are marginal⁹ and landless cultivators. The agricultural land covers 256836 hectare, which is only 13 percent of total land area. The quality of land is poor. There is less rainfall and this has implications on production of food.

The table also illustrates that poverty rate in the region is more severe than that of other regions. Forty-five percent of the country's total poor people live in the region. The table demonstrates that the per-capita income of the people is 28584 NPR (285 US dollar exchange rate @ 100), which is the lowest among five regions. According to NLSS (2003/04), 54 percent of households income comes from farm income, which is the highest among all the development regions. Similarly, 21 percent of their income comes from non-farm which is lowest than that of other development region. Further, the table shows that the total road length of the country is 13,223 kilometers. The Central region has a share of 29 percent. The Eastern region comes next with 21 percent, while the far-western region is the last with only 13 percent of the total length. It also shows that 47.3 percent and 63.9 percent of the total population live without toilet and safe drinking water source respectively. Bennett et al. (2008) and Adhikari (2008) argue that the region has been suffering from historical geographical exclusions and unbalanced development from the mainstream policies of nation. A study by UNDP (2014) shows that there has been widening gap between the far-western and the rest of the segments of Nepal relating to Human Development Index (HDI). The region stays in fifth position out of five regions in the HDI, with a rating of 0.435. Again, it lies in fourth position in the Gender Development Index and Gender Empowerment Measure with rating of 0.447 and 0.456 respectively. According to DHO (2009), it has only 9 percent of total health service centers of the nation.

⁹UNDP categorized farmers who have agricultural land area between 0.21 to 1 acres as marginal cultivators (UN NHDR, 2006)

3.2 Brief Description of Sampled Districts

The research was conducted in three Village Development Committees of three districts namely Kailali, Achham and Bajura of far-western region. These districts represent the food security issues in terms of geographical perspectives of Terai, hills and the mountain belt.

Table 3.2: Key figures of sample districts

Region	Life expectancy	Adult Literacy rate	Per capita income (PPP \$)	HDI
Nepal	68.8	59.57	1160	0.541
FWDR	66.8	53.5	767	0.493
Kailali	66.5	58.7	942	0.513
Achham	67.1	45.1	536	0.446
Bajura	63.9	44.5	523	0.425

Source: NHDR, 2014

Kailali

Kailali district is located in Terai. The district is bordered with India in the southern part. It occupies 2.2 percent (3235 of 147181 km²) of total land of Nepal. It has 2.6 percent of total households of the nation (CBS, 2011). It has the highest number of poor people in the country according to the poverty line NRs 7696 (in average 2003 rupees) set by NPC (NPC, 2010), and 318000 people in the district are poor. It is about 52 percent of total population of the district (WFP, 2010). According to the District Agriculture Development Office (DADO) report (2012), it has 24.9 percent of agricultural land and 79.8 percent of agricultural dependant households. The same report reveals that there are 2.7 percent landless households. According to ISRC (2010) report, the farm size is 1.3 hectares per household and only 37.1 percent of total agricultural land is under irrigation facility. The report also tells that per-capita food production is 3683 kilo-calorie, above the requirement of 2400 Kilo Calories.

Achham

Achham is located in mid-hills between Kailali and Bajura district. It occupies 1.1 percent (1680 of 147181 km²) of the total land of Nepal. In the district, 0.9 percent of total households of nation reside (CBS, 2011). One report of WFP (2010) shows that it is a moderately food insecure district. Twenty-five percent people out of the total population are highly food insecure in the district. According to DADO report (2012), it has 33.4 percentages agricultural land and 60.8 percentages agricultural dependant households. The same report discloses that 4.8 percent of the total households make their livelihoods without land. ISRC (2010) report says that the farm size is 0.39 hectare per household and irrigated land includes only 3.8 percentages of total agricultural land. The same report states that per-capita food production in the district is 1519 kilo-calorie, below the requirement of 2400 Kilo Calories. The district has a high climate change vulnerability index (MOE, 2010).

Bajura

Bajura district is located in the Himalayan range. It occupies 1.5 percent (2188 of 147181 km²) of the total land of Nepal. In the district, 0.5 percent of total households of nation live (CBS, 2011). It is the lowest developed among 75 districts in Nepal in terms of the human development index, having score of 0.425(UNDP, 2014). Around 45 percent of the total population is highly food insecure and experiences chronic hunger (WFP, 2010). According to UNICEF (2010) report, of the total children, 72 percent are stunted and 70 percent are underweight. According to DADO report (2011), agricultural land covers 9.21 percent of total land and 96 percent of total population depend upon agriculture for their livelihoods. The same report shows that there are 7.5 percent landless households. According to ISRC (2010) report, the farm size is 0.47 hectare per household and irrigated land includes only 0.92 percent of total agricultural land. The same report reveals that per-capita food production is 1680 kilo-calorie, below the requirement of 2400 Kilo Calories.

3.3 Research Methods

3.3.1 Research Strategy

In this research, I have used mixed methods research strategy. According to Creswell (2009), the strategy employs multiple approaches to collect, interpret and analyze the data (Table-3.3). This strategy integrated quantitative and qualitative research methods. In quantitative method, it used household survey (structured questionnaire). In qualitative method, it used key informant interview and focus group discussions at a single point in time.

Table 3.3: Quantitative, qualitative and mixed methods

Quantitative methods	Qualitative methods	Mixed methods
<ul style="list-style-type: none"> • Predetermined • Instrument based questions • Performance data, attitude data, observational data, and census data • Statistical analysis • Statistical interpretation 	<ul style="list-style-type: none"> • Emerging methods • Open-ended questions • Data from interview observation, document, and audio-visual • Text and image analysis • Themes, patterns interpretation 	<ul style="list-style-type: none"> • Both pre-determined and emerging methods • Both open- and closed-ended questions • Multiple forms of data drawing on all possibilities • Statistical and text analysis • Across databases interpretation

Source: Modified from Creswell (2009)

Tashakkari and Teddlie (1998) introduce four paradigms in social science research. These are: positivism, post-positivism, pragmatism and constructivism. According to them, mixed method uses pragmatism paradigm. It uses qualitative and quantitative methods, inductive and deductive logic, and both subjective and objective point of views as epistemology. It accepts external reality, and chooses explanation that best produces desired outcomes. This research used mixed methods of positivism and interpretivism epistemology as well as constructivism and objectivism ontology. According to Bryman (2008), the interpretivism epistemology respects the difference between people and the

objects of the natural sciences and therefore it requires the social scientist to grasp the subjective meaning of social action. In the context of my study, social positions determine the access of people to different resources. Therefore, it is important for me to study among/between people and resources. Moreover, constructivism is an ontological position that asserts that social actors continually accomplish social phenomena and their meanings.

3.3.2 Research Design

I have used explanatory research design. This design studies the subjects that have either little or no information. It has three purposes: to discover significant variables in the field situation, to discover relations among variables, and to lay the grounds for later, more systematic and rigorous testing of hypothesis (Kerlinger, 1998, pp.406).

3.3.3 Source of Data and Information

I have used both primary and secondary source of data. To obtain the primary data, I conducted direct observation and communication with respondents. Though collection of these primary data are costly and time consuming, it provided original information regarding the issues. I collected both facts (quantities) and opinions (views and judgments) from the source.

I have also gathered already published information from secondary sources. These sources include both internal (published within university) and external (beyond the publication of the university). Also, these sources include sources of the national authority (different Ministries of Nepal, National Planning Commission, academic and business institutions) and the sources of international development and academic institution (i.e. Food and Agricultural Organization, Department for International Development of United Kingdom, USAID, NCCR North South, OARE, HINARI, etc). The information was either published in paper or in their websites.

3.3.4 Methods of Primary Data Collection

3.3.4.1 Sampling

Multistage Sampling Method (location of primary sampling units)

I have applied multistage sampling methods to locate sampling units (Figure 3.1). This method involves selection of units at more than one stage. The number of stages in the method varies depending on convenience and availability of suitable frame at different stage (Sing, 1976). Clusters that are heterogeneous and from where respondents are not selected are called primary and cluster which are relatively homogeneous and from where respondents are selected are known as secondary sample units (Baker, 1998). In this study, regions and districts were primary and VDCs were secondary sampling units. This study used five stage criteria.

Sampling Frame (total households)

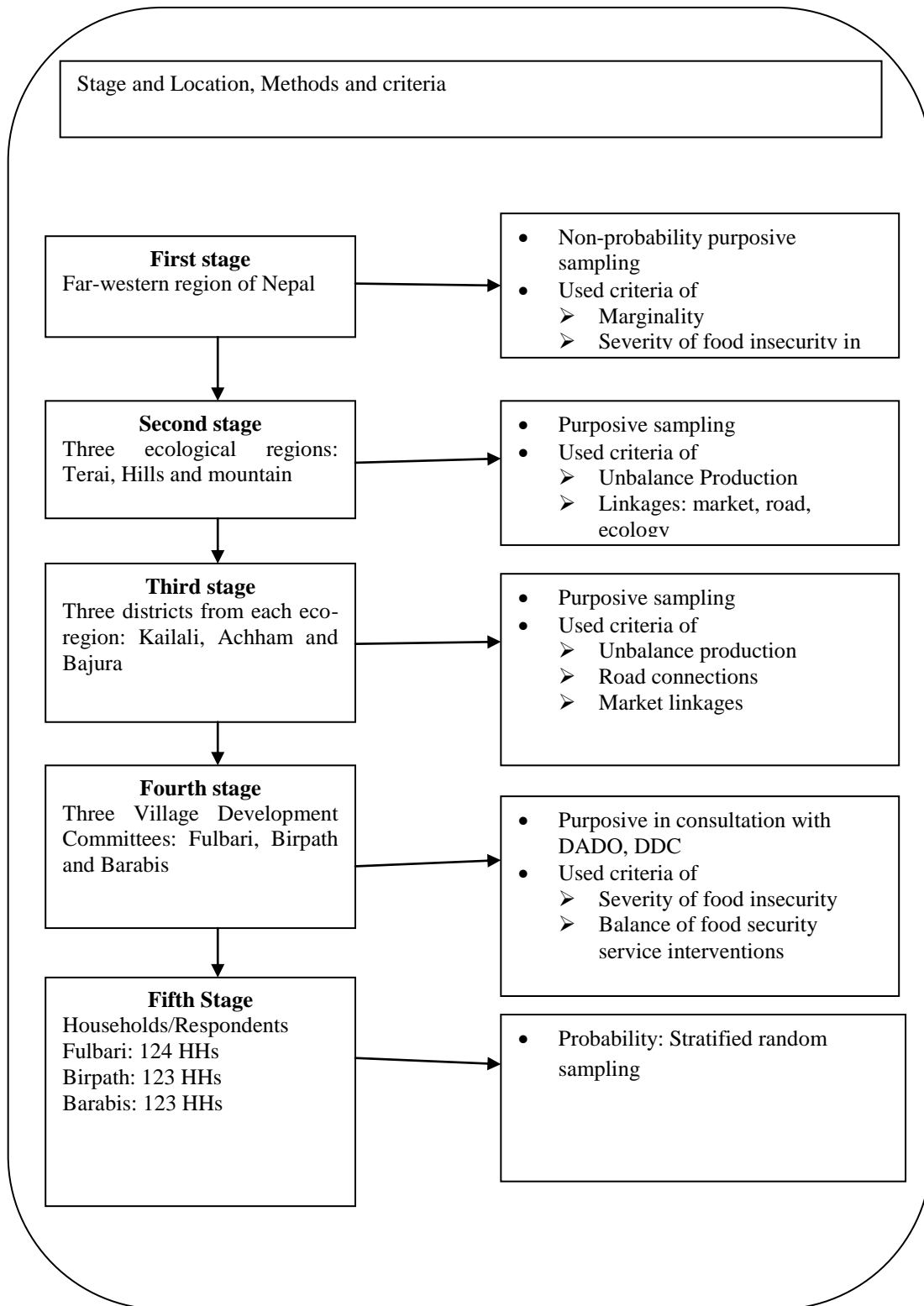
Total 5032 households were frame of the sample (Table 3.4).

Table 3.4: Number of sampling frame and sample

Village Development Committee	Total households	Number of samples
Fulbari	3226	124
Birpath	425	123
Barabse	1381	123
Total	5032	370

Source: VDC profile, 2012

Figure 3.1: Multistage sampling steps in the study



Sample size

Yamane (1967:886) provides a simplified formula to calculate sample sizes (Formula 3.5). This study has used this formula to calculate the sample sizes.

Formula 3.5:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size,

N = population size of the VDCs

e = level of precision.

A 95% confidence level is assumed in the study. Therefore, P = .05 is assumed.

For this study

$$N = 5032$$

$$e = 0.05$$

$$n = ?$$

Therefore,

$$n = \frac{5032}{1 + 5032(0.05)^2}$$

$$n = 370$$

Therefore, the total number of sample households was 370. These samples represent 7 percent of total households. Report of WFP (2009) shows at least 300 households are sufficient for comprehensive food security and vulnerability analysis.

Stratified Random Sampling (location of ultimate sampling units)

To select ultimate sampling units (households), I have applied stratified random sampling methods. The method ensured that the resulting sample becomes proportional representation of the population in terms of stratifying criteria (Bryman, 2008). The numbers of households (370) then were allocated equally to each VDC to grasp the

reality of Terai, Hills and Mountain. To select households from the VDCs, the VDC was divided into 9 wards¹⁰. The population of the wards is divided into three groups: Upper Caste, Janjati and Dalits. Proportionate to the population of the caste groups, the number of sample households were allocated to the wards. These households were selected randomly from the household lists of VDC profiles.

3.3.4.2 Data Collection Tools and Techniques

Household Survey: I have carried out a survey of 370 households using structured questionnaire (Annex-1). This survey is widely used to collect quantitative data from household. Using this tool, I collected data about the structure and patterns of resource endowments (land and other natural resources owned, education level, no of livestock, etc) as well as entitlement bundles (food production, purchase from market and receiving from distribution, income and expenditure, employment status, safety nets based on tradition, social-cultural reasons .

Key Informant interview: I have conducted thirty-two field level key informant interviews. The key informants include representative from DADO, DDC, NGOs, previous and existing agricultural leaders, old aged people, local teachers, VDC secretary, and local agricultural officials. Using this tool, I collected data on key social, political and climatic trends and factors affecting the food in/security conditions in the site. Also, information on existing and alternative livelihoods patterns and intra-household power and resource-allocation issues were collected. I applied snowballing methods to identify appropriate respondents. The method is a form of convenience sample by which I made initial contact with a small group of people who were relevant to the research topic and then used these to establish contacts with others (Bryman, 2008). I used DADO officials as initial contact and then identified other respondents in sequence. Once I thought that the information is saturated, I ended the interviews.

¹⁰ Ward is a small segment of VDC. Each VDC has nine wards.

Market analysis: I conducted specific market analyses in market centers /DHQ in Dhangadi, Surkhet, and Safebagar through key informant interview with local traders. I discussed about the issues of food supply chain, market structure, quality, price, transportation, trade barriers, and exclusion with traders, shopkeepers as well as transport workers.

Focus/Group Discussions: I conducted 21 focus/group discussions. The general group discussion encompassed members from all categories of households while the focus group discussions included specific meeting with the groups from Dalits, indigenous people, and women as well as climatic vulnerable groups, sharecroppers and landless people. Focus groups not only measured the extent of an opinion; it could investigate the reasons why it was formed (McNeill and Chapman, 2005). Therefore, I was assured that the study collected in-depth information about cause and factors of food in/security among different categories of people in sample areas. I have used following techniques in focus group discussions:

Resource mapping: I used this tool to identify locations of important natural resources, settlement patterns, vulnerable people, infrastructure development, key services, and pattern of resource use and opportunities of alternative livelihood. I carried out at one resource mapping in each VDC.

Venn diagram: I used this tool to identify location and relations of key service providers (state, market and NGOs). I identified the role, interest, positions, and link among agencies and people through the diagram. At one Venn diagram has been prepared for each VDC.

Stakeholder mapping: I used this tool to identify work of major stakeholders/institutions who are directly involved in food security interventions of the people. Through this tool, I identified key stakeholders, their intervention, strength and weaknesses of the interventions.

Ranking: I used this tool to identify the issues of inequality and exclusions. It is important to identify rank of people, their certain choices and reason for this (Pokharel, 2006). I used this tool to rank resource endowments, service providers, weekly food consumption, food shortage months, intra-household resource allocation, income and expenditure portfolio, supply and demand shocks, coping and adaptation strategies, factors affecting food insecurity, enabling and disempowering policies and institutions, and alternative livelihoods.

Impact analysis: I used this tool to identify and analyse impacts of key interventions such as land tenure, food aid, market, road, public distribution, and agricultural subsidies and trends such as climate change, conflicts and social exclusion .

Policy analysis: I used this tool to collect information about relevant policies and programme related to food security. I used ranking, SWOT and cost benefit analysis to examine the impacts of these policies.

3.3.5 Data Analysis Strategies

After the empirical data collection, the raw data was processed by editing, coding, classification and tabulation. Kothari (1999) mentioned two types of methods of data analysis. These are descriptive and statistical analysis for quantitative data. This study is descriptive. I adopted descriptive methods of quantitative data analysis.

3.3.5.1 Unit of analysis

Maxwell (1996) mentions ambiguities about whether the unit of analysis should be the individual or the household on food security issues. Sen (1981) chooses the individual, the household, or an “economic class” of people as the unit of analysis. Devereux (2001) states that it can also be conducted at collective levels such as household, group, or class by using the standard device of assuming a ‘representative individual’. I used household as the unit of analysis. However, I also looked at intra-household issues by analyzing the gender dimension of food security. In addition to this, I looked at the social and economic dimensions of food security through analysis of individual who represent similar social and economic positions.

3.3.5.2 Analysis of the Quantitative Information

One-dimensional, bi-dimensional and multi-dimensional analysis methods analyse the uni-variate, bi-variate and multi-variate data respectively (Kothari, 1999). To analyse data collected through household survey, I did single-variate and bi-variate analysis methods. I used the computer aided Microsoft Office Excel worksheet and SPSS packages for the purpose.

Analysis of One Variable Data

For the analysis of the single variable data, I used several measures of the descriptive statistics. In these regards, I used the simple statistic like frequencies, percentage, measure of central tendencies, measure of dispersion and measure of skewness. Additionally, I did simple cost and benefit analysis to analyse the data about participation, investment, transaction cost, transformation of endowments into entitlement and capabilities, and resource exclusion.

Analysis of the Bi-variate Data

For the analysis of the bi-variate data, I particularly used the simple correlation analysis of the Karl Pearson's correlation coefficient analysis. By this method, I analysed the relationships between rich and poor, different caste groups, male and female etc.

3.3.5.3 Analysis of the Qualitative Information

I used the participatory tools and techniques to analyze the qualitative information collected through Key Informant Interview and Focus Group Discussions. The key tools that I used in the analysis are given below.

Trend analysis: I used this tool to examine impacts of important events. I used time line and life history to analyze historical events that affected positively and negatively on food security situation in the study sites. I studied the impacts of resource tenure, food production system, support structure, price hike, and major shocks.

Stakeholder analysis: I used this tool to analyse the work of major stakeholders/institutions who are directly involved in food security interventions of the people. Through this tool, I analysed the impacts of key stakeholders, their intervention, and governance structure.

Cost benefit analysis: This tool is used to analyse cost and benefit of interventions of the Government, different approach of food distribution, autonomous and planned adaptation, opportunities of income, and kinds of investment.

Multi-criteria decision-making: I used this tool to analyse how formal and informal institutions affects on resource scarcities, exchange entitlement, capabilities and other cause and effect relationships.

3.3.6 Gender Dimensions of Research

In the study, the research tools such as questionnaire for household survey and checklists of KII and FGD adequately include the issues of gender. They capture gender issues in the patterns of land tenure, production, access and consumption of food, practices of intra-household resource allocation, impacts and adaptations of shocks and institution affecting on it.

Of the total, there were 37 percent women respondents in the household survey; most of them also bear the responsibility of household head in the absence of their male counterpart. Twelve of the total 32 in-depth field level key informant interviewee (KII) were women. Thirteen of the total 21 focus group discussions (FGD) were women's groups. I invited women key informants during household survey and focus group discussion to create enabling environment by which women articulate their issues sufficiently.

3.4 Validation of Data

Reliability: Reliability means that the method would come up with the same results though the same person uses it at another time (McNeill and Chapman, 2005). To ensure reliability, the study used varieties of methods of quantitative and qualitative research strategies. It used same questionnaire and checklist to collect information. I conducted a field test of these tools before conducting the actual fieldwork.

Validity: Validity refers to whether the data collected is a true picture of what is being studied (Woods, 1999). The study performed different aspects of cross checking of respondent and data. To triangulate the data, the study used different tools and techniques among different people. Also, the study involved a master level student from the university. In addition to this, the data has been compared with already available data of district and national government authorities.

Representativeness: Representativeness refers to the question of whether the groups of people or the situation that we are studying are typical of others (McNeill and Chapman, 2005). The study sites for the research represent the geographic condition of Nepal. The sites represent the districts from Terai, Hills and Himalaya. In addition to this, the social demography of the sites is typical of far-western region in terms of caste, gender and ethnicity.

Ethics: McNeill and Chapman (2005) mentioned six broad ethical rules while conducting social science research. According to them, the researcher should inform about the research to the respondent before the fieldwork. During actual data collection, he/she should maintain honesty and protect them physically and legally. After data collection, he/she should maintain the privacy and keep confidentiality of them. I clearly informed the respondents about the research describing about it in the heading of my questionnaire. I clearly mentioned that the information that they provide will not be used other than for study purpose. I assured the respondents that I would maintain individual and group privacy. I clearly asked the respondents during the interview and discussions whether they had time and were interested to provide response of the questions. During the conversations, I omitted the particular sections that were not relevant to particular people such as the issues of untouchability with high caste, as they hesitate to provide response.

3.5 Limitations of the Study

I have tried to address adequate food security issues at household level. It includes household as unit of data collection and analysis. Within households, it captures gender dimension of food in/security. These issues were captured through women respondent in household survey and women focused group discussions and key informant interview. However, it did not capture other aspect of intra-household food in/security issues such as element of education, age, disability, and HIV/AIDS in detail.

I have used entitlement framework. It particularly focused on the access and entitlement of food. It looked at how different households produce or get access to food available through market, aid and state, people's capability to receive these food, and factors and institutions that affect them. It did not analyse historicity of market, aid and state; how these mechanism functioned.

3.6 Personal Reflection

I am from a socially excluded, Dalit community of Nepal. I am one of very few, less than a dozen, PhD students studying in Nepal and abroad from the community. Therefore, I believe that personal experiences and feeling I gained during this study may be beneficial to other candidates from similar social groups who would like to pursue such a high educational degree.

I feel that PhD or other higher educational degrees are important for the individual coming from socially discriminated group. Such degrees support to enhance his/her social position or prestige where social inequality exists. Therefore, I had a keen ambition to pursue a PhD in my life and searched for an opportunity for such a study.

I saw a PhD admission advertisement of Kathmandu University in collaboration with NCCR (Swiss National Centre of Competency for Research) North South in 2010. I was happy to see this because the position was directly relevant with my previous educational and professional background. In addition to this, one student from my social background was already pursuing a PhD in the same arrangement. This encouraged me to apply for it. The selection process was quite fair, and I am proud that I was selected through an open competition.

During the research, my supervisor and other teachers of the university always queried about my research methods. I felt they might be afraid of the fact that I may be

biased towards my community. They tried to build my capacity through personal coachings and classes so that I would be unbiased in the collection of data and information from the field. However, it is a human nature of each individual to have some kind of favoritism towards his/her own social and economic groups, geography, profession and other dimensions of affinity. I tried my best to minimize these biases through maintaining personal neutrality and using appropriate mixture of tools.

When I started collection of information from central level stakeholders such as MOAC (Ministry of Agriculture and Co-operatives), WFP (UN World Food Programme), NFC (Nepal Food Corporation), NPC (National Planning Commission), MOE (Ministry of Education), MOH (Ministry of Health), MOFALD (Ministry of Federal Affairs and Local Development), I got sufficient support from these institutions. As I come from a Dalit community, the respondent from these organizations particularly focused their view on social dimensions of food insecurity focusing on my social group. They said that my PhD finding should contribute to formulating a policy in Nepal, which can minimize hunger among the community.

I faced some difficulties during fieldwork in the village. Caste-based discrimination and untouchability still exist in the rural area of Nepal. As Dalits are untouchable, I faced some difficulties to get food and accommodation at the research sites. I visited my research areas three times. I visited Dhangadi, Mangalsen and Martadi in January 2010 for the first time for preliminary survey. During that visit, I stayed in district headquarters and there was no problem of getting accommodation. I visited Fulbari, Birapth and Barabis village, ultimate sampling units of the research, second time in May/June in 2011 and third time in January/February in 2013. Birpath and Barabis VDCs are the hill and mountain districts where rigid caste based institutions are still functioning. I was aware that I might face caste-based discrimination for accommodation. In Birpath, I used my social network and stayed in the home of a Dalit family. He was a high school teacher. I was proud of seeing me and welcome to support me. In Barabis, I visited to the home of VDC secretary and introduced my social identity. I gave him the letter of Kathmandu

University, which had addressed him and requested for the appropriate support for me. The secretary felt proud about receiving the letter and promised to support me. I clearly said that I felt difficulties to find an accommodation. Then he managed an accommodation for me in the home of an ex-Maoist leader. I stayed in this home for the period of data collection.

In addition to this, I think sometimes my respondents from non-Dalit community were biased towards me. In some cases, I faced the so-called high caste respondents were reluctant to provide information to me after I gave my introduction. In Bajura, a teacher from *Thakuri* caste was ready to provide information in the initial time of interview. Later, he told me that he was busy and I can get information anywhere. This study gave me the opportunity to manage personal experience, social background and academic research at a time. Being a researcher, I should have un-biased with my respondent. On the other hand, it was my obligation to represent the interest of my community because they are the most marginalized in Nepal. I learned that if we use appropriate tools to collect information, we can reflect the actual situation of different groups without any biasness.

CHAPTER FOUR

SAMPLE PROFILE

Chapter 3 broadly discussed the research methodology of this study. It showed that 370 sample households will be selected for survey purpose.

This chapter discusses the socio-economic characteristics of the sample households. It gives a quantitative overview of the households selected for the study. Based on this overview, the data are further analysed to explain the findings of the study.

In the first section of this chapter, I present the quantitative data on social characteristics of the sample households. In this section, I have introduced the composition of caste/ethnicity, sex, family size, literacy rate, residence of relatives, and participation in different community groups. In the next section, I have explained the data on economic profile of sample households. In this section, I have included the composition of cultivators, occupation, house, electricity and use of mobile phone.

4.1 Social Characteristics

As I have discussed broadly in the first and the second chapter, the social elements are very important for determining the food security situation of Nepal. Therefore, it is important to know the social characteristic of the sample.

4.1.1 Caste/Ethnicity Composition

Caste and ethnicity are important social characteristics in Nepal. Caste and ethnicity-based social institutions were formal in the country before 1964 AD. Discriminations

based on these institutions were legal in that period. Since 2008, The Government of Nepal has been offering affirmative action in civil service to socially marginalized groups such as Dalits, women, and Janjati.

For this study purpose, I have categorized the caste and ethnicity into three broad social groups. I adopted these groups from a broader list of NPC (2007). These groups include Upper Caste, Janjati and Dalits. In Upper Caste, the study comprises Brahmin, Chhetri and Thakuri. In Janjati, it contains *Tharu* and *Magar*. In Dalits, it consists of *Kami* (Bishwakarma), *Darji* (Pariyar), *Sarki* (Charmakar) and *Badi*. I have used these categories in all subsequent chapters to analyse the findings.

Table 4.1 shows that the sample represents 52.7 percent Upper Caste, 16.7 percent Janjati and 30.5 percent Dalit households. It demonstrates that more households from Upper Caste are represented in Birpath while more Dalits households are participated in Barabis. As the Janajati are not living in Birpath and Barabis, they do not represent in the sample of Barabis.

Table: 4. 1: Caste/ethnicity composition in the VDCs

VDC	Data	Caste and Ethnicity			Total
		Upper Caste	Janjati	Dalits	
Fulbari	Count	38	62	26	126
	% within VDC	30.2	49.2	20.6	100
Birpath	Count	79	0	40	119
	% within VDC	66.4	0.00	33.6	100
Barabis	Count	78	0	47	125
	% within VDC	62.4	0	37.6	100
Total	Count	195	62	113	370
	% within VDC	52.7	16.8	30.5	100

Source: Household Survey 2012/13

4.1.2 Sex Composition

Sex is another important social characteristic. It determines gender relationship and is important for analyzing intra-household dimensions of food security. This study not only looks at the issues of gender in general but also analyzes the dimensions of caste and ethnicity among them.

Table 4.2: Women respondents in sample

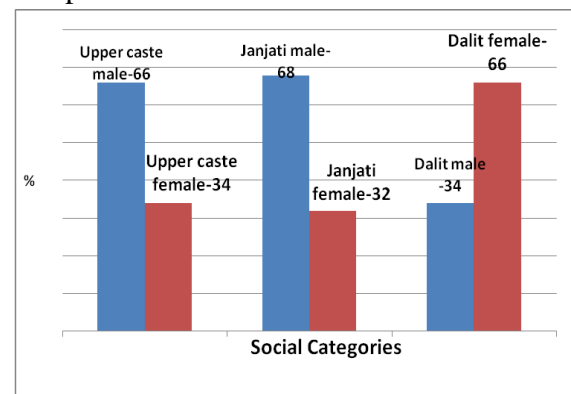
VDC		Sex		Total
		Male	Female	
Fulbari	Count	82	44	126
	%	65.1	34.9	100
Birpath	Count	63	56	119
	%	52.9	47.3	100
Barabis	Count	65	60	125
	%	52	48	100
Total	Count	210	160	370
	%	56.8	43.2	100

Source: Household Survey 2012/13

Table 4.2 shows that women represent 43.2 percent from the total respondents. Among VDCs, it represents 48 percent, 47 percent and 34.9 percent from Fulbari, Birpath and Barabis respectively.

Figure 4.1 illustrates that the representation of Upper Caste, Janjati and Dalits women is 34 percent, 32 percent and 66 percent respectively. The Dalit women respondents are higher in the study than those of Upper Caste and Janjati because many male member from this group are in India for job. Their representation is about two-third of the total women respondents.

Figure 4.2: Women respondents in sample

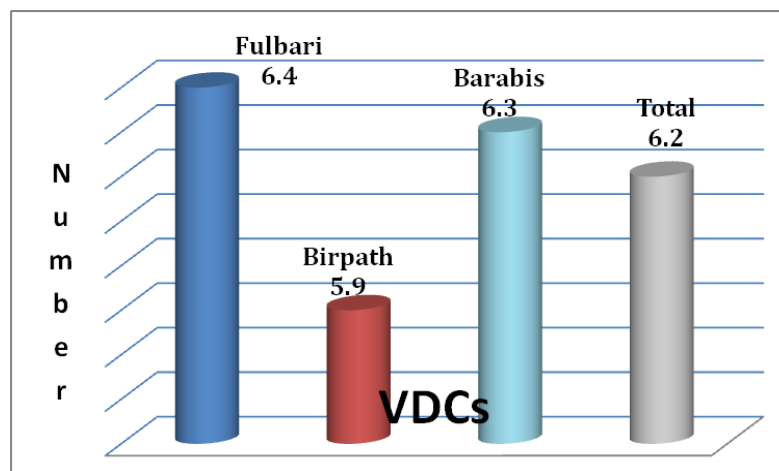


Source: Household Survey 2012/13

4.1.3 Family Size

The size of family is another important social element. The size is important for analyzing availability of food in the family. Figure 4.2 demonstrates that the average size of the family of sample household is 6.2. This size is 6.4, 5.9 and 6.3 respectively in Fulbari, Birpath and Barabis VDCs. The range of family size is 2 to 19.

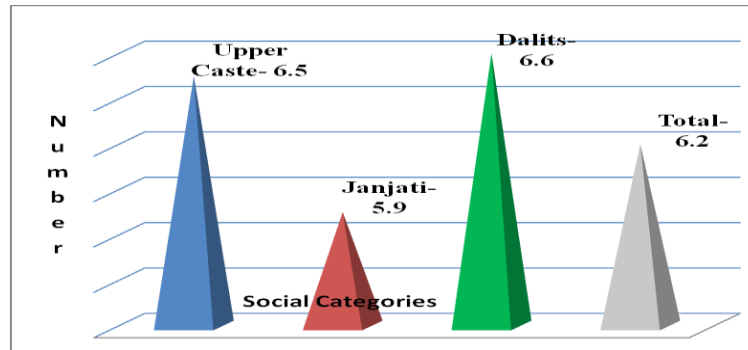
Figure-4.3: VDC wise family size of households



Source: Household Survey 2012/13

Similarly, the mean size of family is different among different social groups. Figure 4.3 show that the mean family size of Dalit is 6.6. It is the greatest size among the social categories included in the study. It shows that population growth rate is high among the Dalits.

Figure-4.3: Caste/ethnicity wise family size of households



Source: Household Survey 2012/13

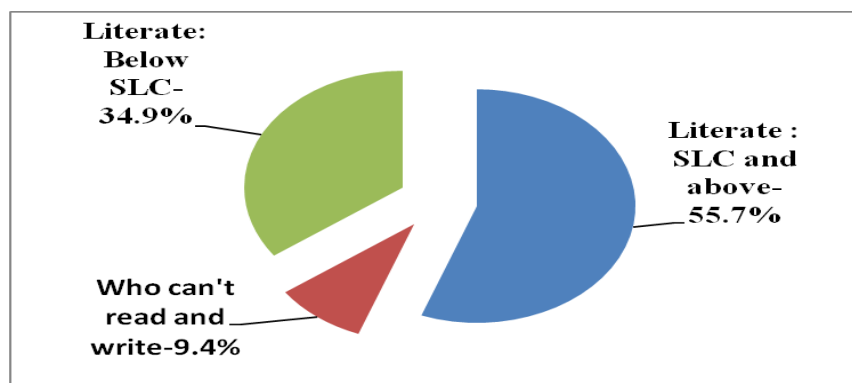
4.1.4 Education

The level of education of household members is the other important element for food security (Allendorf, 2007; Sharkey, et al., 2010). Examples show that the education level of individual and/or households supports the food production, the access to food and better food utilization in the household.

Figure 4.4 illustrates that the sample represents 90.6 percent respondents who can read and write and 9.4 percent respondents who can't do it. Among those who can write and read, 34.9 percent respondents have completed SLC¹¹ (School Leaving Certificate) while 55.7 percent are educated up to SLC. Caste and ethnicity wise education level is described in table 6.9.

¹¹ SLC is the final examination in the secondary school system in Nepal. It is equivalent to the GCSE (General Certificate of Secondary Education) in UK.

Figure- 4.4: Literacy rate of respondent (%)



Source: Household Survey, 2012/13

4.1.5 Residence of Relatives

Family forms an important social network. Where the relatives of households live is crucial a crucial factor during the time of crisis. The spread of the residence of relative also give hints about the mobility of people.

Table-4.3: Distribution of relatives of sample households (percentage)

Categories	Data	Residence of relatives				Total
		Same VDC	VDC and Terai/DQs	VDC/District HQ and Kathmandu	In all places	
Upper Caste	Count	110	61	10	14	195
	%	56.4	31.3	5.1	7.2	100
Janjati	Count	49	6	6	1	62
	%	79.0	9.7	9.7	1.6	100
Dalits	Count	80	26	5	2	113
	%	70.8	23.0	4.4	1.8	100
Total	Count	239	93	21	17	370
	%	64.6	25.1	5.7	4.6	100

Source: Household Survey 2012/13

Table 4.3 indicates that relatives of 64.6 percent households reside within the VDC. The rest live in different places. These different places are other VDCs, district headquarter (HQ), Terai and Kathmandu. Only 4% of total respondent have relatives in

all places including foreign countries. Of it, 7.2 percent of Upper Caste have relatives in all places.

4.1.6 Memberships in Community Groups

Memberships in different community groups are another important social network. The sampled households are members in many community level groups. Table 4.4 shows that Community Forestry User, Agricultural, Saving Credit, Women, and Cooperative are major groups in the study sites.

Table 4.4: Household members in community groups (percentage)

VDC	CFUG	Agriculture Groups	Saving Credits	Women Groups	Cooperatives
Fulbari	92.9	31.7	30.9	28.8	19.8
Birpath	86.1	4.9	54.9	34.4	24.6
Barabis	95.9	7.4	31.9	41.8	7.4
Total	91.6	14.9	39.2	34.7	17.3

Source: Household Survey 2012/13

The table shows that Community Forest User Group (CFUG) is the largest group in the study sites. Of the total, 91.6 percent households are involved in this group. After that, saving and credit groups have large coverage. Of the total, 39.2 percent households are involved in this group. Caste and ethnicity wise membership level of some groups is described in table 4.4.

4.2 Economic Status of Respondents

4.2.1 Major Occupation

Major occupation determines the status of income source of the households. There are four major occupations in the sites. These are farming, jobs in The Government and NGOs, working as seasonal migration to India and business.

Table 4.5: Social category-wise major occupations

Categories	Data	Major Occupation				Total
		Farming	Jobs	worker in India	Business	
Upper Caste	Count	99	22	62	12	195
	%	50.8	11.3	31.8	6.2	100
Janjati	Count	29	6	23	3	62
	%	46.8	9.7	37.1	4.8	98.4
Dalits	Count	32	6	73	2	113
	%	28.3	5.3	64.6	1.8	100
Total	Count	160	34	158	17	370
	%	43.5	9.2	42.7	4.6	100

Source: Household Survey, 2012/13

Table 4.4 displays that farming is still the major occupation of the respondents. Of the total, 43.5 percent adopt it as major occupation. Similarly, seasonal migration to India is equally important among them. Of the total, 42.7 percent pursue to work in India as major occupation. The table also shows that there are different major occupations among diverse social groups. Farming is still major occupation between Upper Caste and Janjati. However, Dalit's major occupation is to work seasonally in India.

4.2.2 Bank Account

Having a Bank account is also good indicator of economic status of people. It determines the saving status as well as an access to financial institutions of the households.

Table 4.6: Households having account in bank

Categories	Data	Households having bank account		Total
		Yes	No	
Upper Caste	Count	55	140	195
	%	28.2	71.8	100
Janjati	Count	12	50	62
	%	19.4	80.6	100
Dalits	Count	16	97	113
	%	14.2	85.8	100
Total	Count	83	287	370
	%	22.4	77.6	100

Source: Household Survey, 2012/13

Table 4.5 shows that only 22.4 percent of total respondent have a bank account. Of the total, 28.2 percent of Upper Caste, 19.4 percent of Janjati and 14.2 percent of Dalits have bank account.

4.2.3 Types of Cultivators

UNDP (2006) categorized cultivators according to the size of the land she/he owns. The details of the indicators are included in annex 4. These categories are used for this study purpose. In general, the size of land that the households own determines the level of production and self-sufficiency on food.

Table 4.7: Categories of cultivators among farmers

Cultivators	Frequency	Percent
Landless	26	7.0
Semi land less	75	20.3
Marginal Cultivator	160	43.2
Small cultivator	71	19.2
Semi medium cultivator	30	8.1
Medium cultivator	8	2.2
Total	370	100

Source: Household Survey 2012/13

Table 4.6 shows that the samples represent respondents from landless, semi-landless, marginal, small, semi-medium and medium cultivators. They represent 7.03 percent, 20.3 percent, 43.2 percent, 19.2 percent, 8.1 percent, and 2.2 percent respectively. Among the sample households, about 90 percent of total respondents are from small, marginal and semi-landless cultivators. There are 7 percent landless families. According to UNDP indicator, there are no large cultivators in the sample having land more than 10 acres (more than 120 *katha*).

4.2.4 Types of Houses

Types of houses determine the symbol of prosperity in rural area of Nepal. Major types of houses in the study sites are cemented, *kachhi* and thatched roof. Cemented houses are the symbol of wellbeing.

Table 4.8: Types of house of sampled house

Categories	Data	Types house			Total
		Cemented	<i>Kachhi</i>	Thatched	
Upper Caste	Count	9	143	43	195
	%	4.6	73.3	22.1	100
Janjati	Count	3	27	32	62
	%	4.8	43.5	51.6	100
Dalits	Count	3	64	46	113
	%	2.7	56.6	40.7	100
Total	Count	15	234	121	370
	%	4.1	63.2	32.7	100

Source: Household Survey 2012/13

Table 4.7 connotes that the sample includes 4.1 percent, 63.2 percent and 32.7 percent households that have cemented, *kachhi* and roof thatched houses respectively. Most of the houses of respondent are *kachhi*. Almost similar percentage of Upper Caste and Janjati have cemented houses. People build these houses with stone roof. The wall of these houses may either be constructed by stone or wood.

4.2.5 Electricity

In all study sites, there is a facility of electricity. People use either solar or hydro electricity. Table 4.8 shows that 39.5 percent of total sampled households have either hydro electricity or solar facility. Of the total, 50.8 percent of Upper Caste, 33.9 percent of Janjati and 23 percent of Dalit have this facility.

Table 4.9: Households having solar or electricity

Categories	Data	Solar/ electricity		Total
		Yes	No	
Upper Caste	Count	99	96	195
	%	50.8	49.2	100
Janjati	Count	21	41	62
	%	33.9	66.1	100
Dalits	Count	26	87	113
	%	23.0	77.0	100
Total	Count	146	224	370
	%	39.5	60.5	100

Source: Household Survey, 2012/13

4.2.6 Use of Mobile phone

The role of mobile in the marketing of agriculture has been increasing in the recent days. Table 4.9 shows that 76.2 percent of total households that have mobile phones. Of the total, 89.2 percent of Upper Caste people have a mobile phone.

Table 4.10: Households using mobile phone

Categories	Data	Use of Mobile		Total
		Yes	No	
Upper Caste	Count	174	21	195
	%	89.2	10.8	100
Janjati	Count	39	23	62
	%	62.9	37.1	100
Dalits	Count	69	44	113
	%	61.1	38.9	100
Total	Count	282	88	370
	%	76.2	23.8	100

Source: Household Survey, 2012/13

4.3 Comparison with National Data

I have compared some key sample data with national level average data.

Table 4.11: Key figure of comparison of sample data with national data

Information	National data	Sample data
Population composition of Dalits	13.6%	30.5%
Women's population	50.1%	43.2%
Family size	4.8	6.2
Literacy rate	65.9%	90.8%
Cemented house	26.4%	4.1%
Use of mobile phone	64.6%	76.2%
Facility of electricity	74.7%	39.5%

Source: Household Survey, 2012/13 and CBS, 2011

Table 4.10 shows that the family size of the sample is bigger than the size calculated by national population and housing census 2011. It shows that family size of the sample is 4.8 while the national average is 6.2. Similarly, there is wide difference in the literacy rate between national average and sample data. In my sample, 90.6 percent of the total respondent can write and read. While the national average rate of literacy is 65.9 percent. There is common perception in my study sites that educated people should give such kinds of interview. Therefore, there is higher level of educated people in my sample. At the same time, there are wide differences in the cemented types of house, use of mobile phone and facility of electricity between national average and sample data. The peculiarity is that the people in my study sites use more mobile phones than national average. In my sample, 76.2 percent of the total respondents use mobile phone. While, the national average rate mobile use is 64.6 percent.

CHAPTER FIVE

STATE AND PATTERN OF FOOD SECURITY

This chapter shows the results of the first objective “**To examine the state and patterns of food security in the study sites.**” It presents the results and discussions in the order of the specific questions of the concerned objective. It includes four sections. The first section discusses about food production, access to food and consumption. The second section assesses the situation and governance of food distribution. The next section examines the state of food security among different social groups. And, the last section describes about gender dimension of food entitlement.

5.1 Food Security: Production, Access and Consumption

This section examines the general situations and trends of food security in the study sites. It discusses results and discussions in the topics of food production, access to food and food consumption.

5.1.1 Food Production

The households in the study sites are food deficit in terms of household food production. Table 5.1 shows that only 3 percent of total respondents are self-sufficient for more than 12 months. It depicts that 56.5 percent of total respondents are self-reliant below six months in a year. However, the situation is different among the districts. In Birpath, 81.1 percent households produce food that is only enough for up to six months. In Barabis, there are 64.7 percent such households. However, in Fulbari, there are only 26.6 percent, which produce food for below six months.

Table 5.1: Status of households food self-sufficiency

Duration	Data	VDC			Total
		Fulbari	Birpath	Barabis	
0 month	Count	2	5	6	13
	%	1.6	4.1	4.9	3.5
1--3 months	Count	16	41	30	87
	%	12.7	33.6	24.6	23.5
3-6 months	Count	13	53	43	109
	%	10.3	43.4	35.25	29.5
6-9 months	Count	26	9	23	58
	%	20.6	7.4	18.8	15.7
9-12 months	Count	60	12	19	91
	%	47.6	9.8	15.6	24.6
> 12 months	Count	9	2	1	12
	%	7.1	1.6	0.8	3.2
Total	Count	126	122	122	370
	%	100	100	100	100

Source: Household Survey, 2012/13

Farmers in group discussions say that the major causes of inadequate production are limited availability of land (discussed in chapter 5.1.1.I), high fragmentation of land (discussed in section 5.1.1.II), absentee landlordism (discussed in 6.5), deficient use of improved agricultural inputs (discussed in section 7.1.I) and ineffective agricultural policies of Government (discussed in chapter 7).

5.1.1.1 Availability of Land Resource

Per-capita availability of land is comparatively low in the study sites. The IASC (2008) report prescribes that minimum of 0.64 ha, 0.55 ha, and 0.45 ha land is needed for food self-sufficiency in mountain, hills and Terai respectively. Nevertheless, per household land availability is 0.25 hectare of irrigated and 0.15 hectare of non-irrigated land in an average in the site. It is roughly about 0.4 hectare (Table-5.14). Most of the cultivators in the region are semi-landless and marginal cultivators. Table 5.2 shows that 63.5 percent of total cultivators fall in these categories. The land of these farmers is also highly fragmented. Analyzing the trend of land fragmentation in the region, there would only be 0.3-hectare land by 2030 and 0.25 hectare by 2050. This land size will not permit effective use of agricultural inputs.

Table 5.2: Categories of cultivators

VDCs	Data	Land Cultivator						Total
		Landless	Semi land less	Marginal Cultivator	Small cultivator	Semi medium cultivator	Medium cultivator	
Fulbari	Count	11.0	22.0	41.0	28.0	19	5	126
	%	8.7	17.5	32.5	22.2	15.1	3.9	100
Birpath	Count	8	28	71	9	2	1	119
	%	6.7	23.5	59.6	7.6	1.7	0.8	100
Barabis	Count	7	25	48	34	9	2	125
	%	5.6	20	38.4	27.2	7.2	1.6	100
Total	Count	26	75	160	71	30	8	370
	%	7.1	20.3	43.2	19.2	8.1	2.2	100

Source: Household Survey, 2012/13

5.1.1.2 Use of Agricultural Inputs

Another cause of limited production of food is that the use of improved agricultural input is very little in the region. Chapter 7.2.1 will discuss about the state and pattern of use of important agricultural inputs in detail. Table-5.3 indicates that only 12.4 percent, 35.4 percent and 13.5 percent of total farmers regularly use mineral fertilizers, improved seeds and insecticides/pesticides respectively.

Table 5.3: Farmers using agricultural inputs

VDC	Data	Chemical fertilizers	Seeds	Insecticides
Fulbari	Count	39	71	14
	%	30.9	56.3	11.1
Birpath	Count	5	23	18
	%	4.2	19.3	15.1
Barabis	Count	2	37	18
	%	1.6	29.6	14.4
Total	Count	46	131	50
	%	12.4	35.4	13.5

Source: Household Survey, 2012/13

The table explains that the use of these agricultural inputs is different among three VDCs. In Fulbari, its use is relatively reasonable. There is good connectivity of road and

farmers have large tracks of individual agricultural land. However, the use of these inputs requires improvement in Birpath (Hills) and Barabis (mountain).

5.1.1.3 Practices of Livestock based Food

The livestock play an important role directly and indirectly in the production of food. Farmers rear cows and buffalos mostly for milk production while they keep goat, pig and hen for meat production. However, the potentials of the livestock to increase the income of the farmers have not been harnessed. Table 5.4 shows that 29.7 percent of total households produce milk. They also make ghee and curd. Nevertheless, very few farmers sell it.

Table 5.4: Farmers producing milk

District	Data	Milk production		Total
		Yes	No	
Fulbari	Count	26	100	126
	%	20.6	79.4	100
Birpath	Count	46	73	119
	%	38.7	61.3	100
Barabis	Count	38	87	125
	%	30.4	69.6	100
Total	Count	110	260	370
	%	29.7	70.3	100

Source: Household Survey, 2012/13

In the focus group discussions, some farmers shared that there is a reduction in the number of cattle the farmer rear. Earlier, there was an open access to forest, which they could use as pasture. Now, Community Forestry User Groups prohibit grazing inside the forest. Farmers need to stall feeding to cattle, which needs extra human resources, and increases the workload of female. In addition to this, the children are now going to school and have only a limited time to take care of their livestock.

5.1.1.4 Availability of Forest based Food

Forest continues to play an important role in self-sufficiency of food in the study sites. Table 5.5 shows that 30 percent of total households regularly collect forest-based food. The use of this food in hills and mountain is high because the forest is located near to the settlement. Forest products also support for coping strategies during hunger period. It was found that some of the poor live through only eating these products for as long as the month during the scarce period.

Table 5.5: Households collecting forest based food

District	Data	Households collecting food		Total
		Yes	No	
Fulbari	Count	20	106	126
	%	15.9	84.1	100
Birpath	Count	54	65	119
	%	45.4	54.6	100
Barabis	Count	39	86	125
	%	31.2	68.8	100
Total	Count	113	257	370
	%	30.5	69.5	100

Source: Household Survey, 2012/13

Farmers use forest products for different forms of food. They use it directly as main food, or as vegetable or as fruits. They can get these products in every season throughout the year. Poor people use *githa* (*Boehmeria regulosa*) as main food. They use Mushroom, and Asparagus in Birpath and Barabis, and *kheksi* (a herbs produces fruits used as vegetable) in Fulbari as vegetable. They highly depend upon the forest for fruits like *Jamun* (*Syzygium cumini*), *Barbery*, *Bayar* (*Ziziphua app.*), *Teju* (*Dyospyros malaberica*), *Sitaha*.

5.1.2 Access to Food

Farmers in focus group discussions stated that the capacity of people to demand food as well as the characteristics of supply area are important elements for access to food they require. The discussions trace that income sources, health status, education, political involvement, and social networks are important elements that determine the capacity of the people to demand food. At the same time, the important supply side factors are the construction of roads, the establishment of market, provisions of food aid and public distribution. The following points discuss on the state and patterns of these elements in the study sites.

5.1.2.1 Demand Side Elements

Income sources: The level of people's income is one of the most important elements for food security (World Bank, 1986; Nyborg and Haug, 1995). Table 5.6 explains that majority of income of the households comes from seasonal migration to India. It contributes 35.29 percent of total household income. Other income sources include jobs in NGOs and The Government, self-employment (small business), wage in agricultural and non-agricultural sectors (construction), and sale of cereals and cash crops.

Table 5.6: Income composition from different sources

Sources	% of income
Seasonal migration	35.3
Job in Government	26.4
Self employment	16.10
Non-agricultural labor	8.6
Sale of livestock	4.3
Sale of cereal	4.1
Sale of cash crops	1.9
Other source	0.6
Total	100

Source: Household Survey 2012/13

Local people could not promote local income sources, other than seasonal migration to India included in the table, as they expect. However, after construction of a road, rural

poor have opportunities to find wage work in non-farm sectors such as construction of buildings and transportation. The wealthier households have a chance to establish small shops, and getting involved as a businessperson and trader. The number of NGOs in the recent days has also augmented which has increased the opportunities of work for educated people.

Health status: Health status is another major resource endowment of the poor people living in the region. Good health means good labor performance and income in the situation of harsh environmental situation. People pay to the non-farm laborers based on the volume of work that he/she complete; the able-bodied workers receive better payment than those of weak health. The number of health services in the study sites is increasing. In each VDC, there exists either a health post or a sub-health post. Staffs of health post regularly visit each settlement. Mostly these health and sub health posts are located near to the VDC offices. These offices provide medicine free of cost. In addition to this, there are private clinics in each VDC. People can purchase cheap medicine in these clinics.

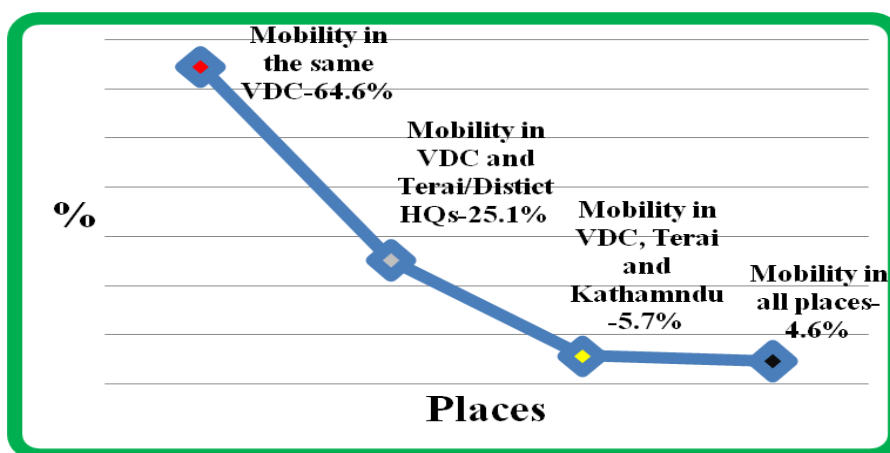
Education: Education plays an important role in production and exchange entitlement of food. Allendorf (2007), Sharkey (2010) and Mwita et al. (2011) argue that the level of education enhances the use of technology and access to agricultural inputs essential for enhancing food production. Similarly, it also increases opportunities of diverse earning sources. Some farmers in the focus group discussions say that the educated farmers are the first who used improved seeds. However, the status of education in these villages is very weak.

Political involvement: If any local person is influential to local politics, not only his/her household but also the whole settlement gets more support from different provisions. Political leaders have opportunities to get improved seeds from DADO. They can also influence in conducting a food aid programme in their settlement. They can even influence the distribution of public food, construction of road and establishment of market in their area.

The participation of people in the political processes is increasing in the recent days. There is an increased political awareness among different categories of people. They engage actively in political parties and their wings, voting process and pressure groups. Each major political party has its local committee in the VDCs. Also, they have local committees of different sister-wings such as Dalit, women and Janjati wings.

Social networks: Social relations provide better coping mechanism during food scarce period. Relatives provide loan, food and information during the time. In this regard, where the relatives of households live is a crucial part during that time (Junginger, 2010).

Figure-5.1: Distribution of relatives of sample households (percentage)



Source: Household Survey 2012/13

Figure 5.1 indicates that relatives of 65.9 percent, 25.4 percent and 4.9 percent households live in the same VDC, in district headquarters and Terai, and in Kathmandu respectively. This signifies that almost two-thirds (65.6%) of relative households live in the same VDC. Only 4 percent of total respondents have relatives who live in all places. Local people have opportunities to get physical support from their relatives.

5.1.2.2 Supply Side Components

The above section discussed about the elements related to capacities of the people to demand food. The finding shows that unless the supply sectors are vibrant, the demand side only cannot promote the command of the people to food. This section discusses about the situation of these sectors that is equally important for access to food.

Construction of road: The role of road is very important for supplying necessary food in needy areas. Chapter 6.2 will discuss about the role of road in promotion of food entitlement in detail. In the study sites, the road has touched all VDCs. In Fulbari, highway from Dhangadi to Holiya crosses through many villages. Similarly, in Birpath, the main road from Mangalsen to Mangalbazar passes through some hamlets. In Barabis, the public road from Sanfe to Martadi goes by one side of the VDC boundary. There are also seasonal link paths going through major settlements of the VDCs. These linkages support transport food from Terai to Hilly and Mountain region. However, these were seasonal until the time of this study and were under the process of construction of linking bridge.

Establishment of markets: There is a close linkage between construction of road and the establishment of market. Once a road is constructed, both locals and people from outside established small new markets covering major settlement. In Barabis, it displaced old markets because the road does not touch to the previous ones that were in upper ridge of hills. For example, the market of Betalmandav displaced old markets. When the road from Safe to Martadi crossed through Betalmandav, this new market in the lower ridge of the hill was established. In Birpath and Barabis, the road crossed through the old market. It supported to promote the old ones in the villages. Now, there are small markets in each VDC. In detail, chapter 6.3 will discuss about the role of market in food entitlement promotion.

Food aid provision: In the study sites, food aid is seen as an important source of food in the time of crisis. It has been crucial source of deficit food to people since the last 30 years. Before the construction of road and the establishment of current market, it played a significant role during the period of hunger. In this regard, World Food Programme (WFP) was the foremost food aid donor. Still, WFP's Rural Community Infrastructure Works Programme (RCIW) is a major aid modality, which provides employment opportunities to the people who are interested to provide laborers from the selected areas. This programme selects the workers within a 2 km corridor from the planned rural road in Birpath and Barabis. This aid has many models. In Birapth, it implements food for work and cash for work. In Fulbari, the RCIW implemented cash for work for flood victims. In the same VDC, Red Cross implemented food for work programme. Similarly, in Barabis, WFP through MISS Bajura, a local NGO, implemented cash for work programme.

Public food distribution: As we discussed in chapter one, public institutions play important role in the supply of food. In Nepal, Nepal food corporation (NFC) is the only government owned company responsible for its supply. It has been selling food in subsidized price since 1972 in 30 food deficit districts. In the study area, its role is prominent in Birpath and Barabis. Considering Kailali as a food surplus district, it is not working here. However, NFC purchases food from the district. In Achham and Bajura, the corporation has its branches (depots). There is a depot in Mangalsen in Achham and in Maratdi and Kolti in Bajura. The depots have storage houses from where they sell subsidized food to the people living in allotted VDCs.

5.1.3 Consumption and Utilization Pattern

Food consumption and utilization are important aspects of food security. The consumption patterns depend upon the conjunction of production, food availability and culture. The utilization capacity depends upon the facilities of primary health care, safe drinking water, sanitation and education (Pitt and Rosenzweigh, 1984; Park, 2007).

Findings show that rice is the major staple food among all categories of households. However, rice is not the major crop in Hills and Mountain region. Table 5.7 shows that people eat rice at least one time in a day. It illustrates that the consumption does not necessarily rely on the local production. People also consume chapatti of wheat and barley and dishes of maize, which they produce. In addition to this, they eat pulses and vegetables, meat, milk, sugar and forest based food as supportive food.

Table 5.7: Farmers consuming number of meals in a week

Food items	Times a week
Rice	7.6
Chapati	5.9
Maize	0.9
Vegetable	6.9
Pulse	5.1
Meat	0.8
Pickles	3.9
Milk	2.9
Sugar	5.2
Other: Alcohol, fruits, NTFPs	3.2

Source: Household Survey, 2012/13

Food utilization is an important aspect of food security. It has impacts on the status of health. Health status is improving since a couple of years in the region. About 40 percent of total respondents replied that they do medical checkup with doctors at least once a time in a year. There is also a decrease in malnutrition among children and pregnant women due to health campaigns about nutrition and vitamin supply from the health posts and NGOs. One-third of the total respondents replied that they are aware about healthy nutrition.

Concurrently, the sources of safe drinking water for most of the households have also increased. Table 5.8 shows that the water source for 91 percent households is tap water. It reveals that 100 percent in Fulbari, 91 percent in Barabis and 81 percent in Birpath households drink through this source. However, there is no regular supply of water in the tap. During the summer, many users face water supply shortage.

Table 5.8: Source of drinking water in the study sites

VDC	Data	Source of drinking water			Total
		Tap	Well	River	
Fulbari	Count	126	0	0	126
	%	100	0	0	100
Birpath	Count	111	11	0	122
	%	90.9	9.1	0	100
Barabis	Count	100	3	19	122
	%	81.9	2.5	15.6	100
Total	Count	337	14	19	370
	%	91.1	3.8	5.2	100

Source: Household Survey, 2012/13

However, there is limited access to sanitation in the region. Table 5.9 illustrates that only 30.5 percent of total households have cemented toilets. About 35 percent households still defecate in open space. The open space includes river, forest and public land. Women feel very difficult to defecate in the open space. However, many people (46.1%) – most of them are flood victims - defecate in open space in Fulbari.

Table5.9: Households using different types of toilets

VDC	Data	Types of toilet			Total
		Cemented	Thatched	Open	
Fulbari	Count	30	38	58	126
	%	23.8	30.2	46.1	100
Birpath	Count	16	78	27	122
	%	13.1	63.9	22.1	100
Barabis	Count	67	11	44	122
	%	54.9	9.1	36.1	100
Total	Count	113	127	129	370
	%	30.5	34.4	34.9	100

Source: Household Survey, 2012/13

5.2 Food Distribution and Governance

The results and discussions of section 5.1 showed that several people are unable to produce sufficient food for self-subsistence. It also explained that - beside the markets - NFC (Nepal Food Corporation) and WFP (World Food Programme) are major agencies, which fulfill the deficit food to this category of people. However, there are issues regarding how these agencies deliver food and who is entitled to get it. In these regards, it is essential to understand the governance of food distribution. This section provides results and discussions on the food supply situation, the structure and distribution mechanisms of these agencies as well as their targeting methods.

5.2.1 Food Supply Situation

The market is the major source for the people to purchase deficit food in the study sites. Table 5.10 shows that market fulfils 84.5 percent of total household shortfall while WFP and NFC contribute 13 percent and 2.5 percent respectively. The market functions in all villages. Though food aid supports all VDCs, it only contributes during emergency in Fulbari. Nepal Food Corporation (NFC) sells food in Birpath and Barabis only.

Table 5.10: Contribution of agencies to per household food deficit

VDCs	Categories	Distribution (Quintal)	Agencies		
			NFC	Market	WFP
Fulbari	Dalits	7.3	0	6.8 (93.1%)	0.5 (6.9%)
	Janjati	6.2	0	5.3 (85.5)	0.9 (14.5%)
	Upper	3.9	0	3.2 (82%)	0.7 (18%)
Birpath	Dalits	6.1	0.2 (3.4%)	4.8 (78.6%)	1.1 (18%)
	Janjati	NA	NA	NA	NA
	Upper	5.2	0.3 (5.8%)	4.6 (88.4%)	0.3 (5.8%)
Barabis	Dalits	6.2	0.13(2.1%)	5.1 (82.5%)	0.95(15.4%)
	Janjati	NA	NA	NA	NA
	Upper	4.9	0.35(7.1%)	3.8 (77.5%)	0.75 (15.3%)
Total		39.8	0.98	33.6	5.2
Average		5.7	0.15(2.5%)	4.8 (84.5%)	0.75 (13%)

Source: Household Survey, 2012/13

Dalit and Janjati purchase a lot of food from market. From the case of Fulbari, the table 5.10 shows that each household of Dalit buys 6.8-quintals, Janjati buys 5.3-quintal and Upper Caste buys 3.2-quintals of food annually from the market. This indicates that Dalit and Janajati households are more dependent on the market and get limited benefit from WFP and NFC.

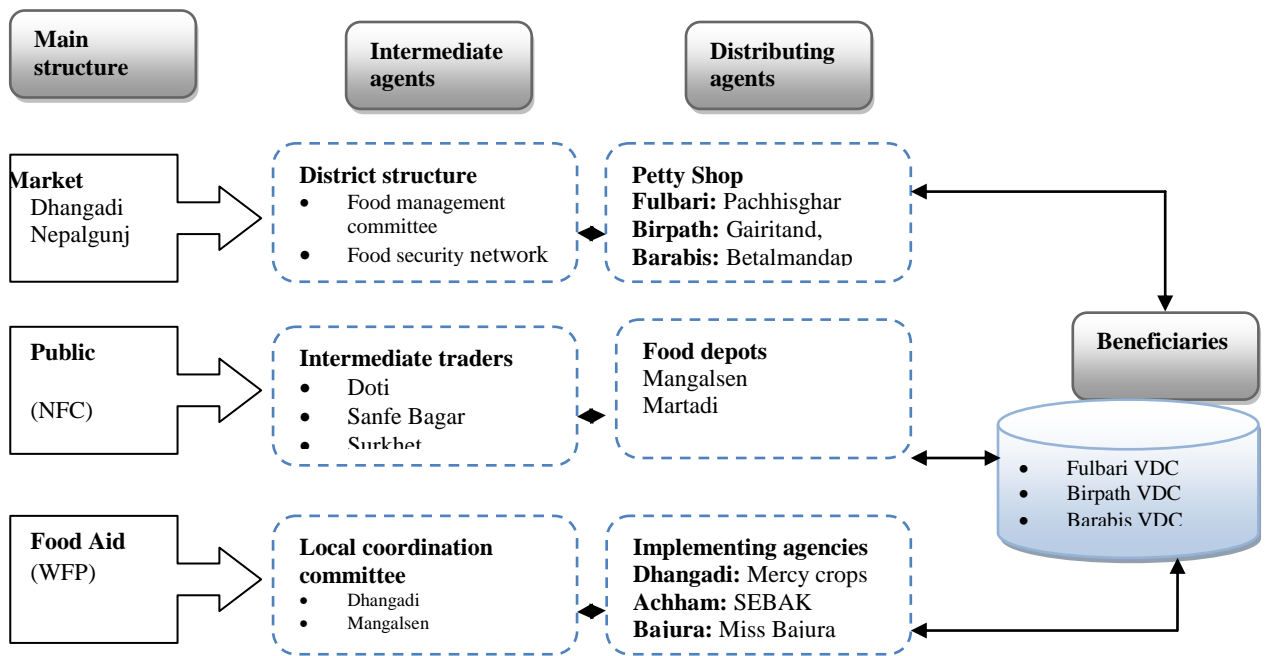
The markets displace the role of NFC and WFP in the study sites. Ahmed (1978), Sen (1981), Khan and Jamal (1997), Abdulai et al. (2004) argue that in the condition of reduced role of public sectors and aid, a market based approach is considered as more efficient. People in the region perceive that market is now playing a more effective role compared with of NFC and WFP. However, the market is not working well in other village areas of Bajura and Achham districts due to the lack of road connections. The villages are also small and scattered, with the result that the development of markets slow and the per-capita cost of moving food to the villagers is quite high.

However, NFC and WFP provide cheap rice that is not available for the poor through their own production. It is very important for sustaining their life in the situation of limited paddy fields and other substantial income. Comparing the NFC price with market, the NFC in Martadi had sold rice at the price of 32 NPR per Kg while the market price was 43 NPR for the same quality in January 2011. Food aid is considered as being the easiest and the most efficient way to access food. The aid saves life of the people during the time of emergency. For example, aid had provided food in lean period in August and September 2011 in Fulbari. It is the period when most of the poor experienced food insecurity and hunger, because there was no harvest of crops. Because of rainy season, there was also a difficulty in transporting food from Terai to the hills. However, the quality of rice has been a major issue. People in Bajura said that they did not use the food provided by WFP in 2007. Instead, they used it to feed their cattle. Simultaneously, there was a huge flood in September but the aid came only in October/ November in Fulbari.

5.2.2 Structure and Process of Distribution

The structure of the food supply agencies shows that they adopt a top down approach with complicates organizational structures (Figure 5.2). For example, the structure of NFC includes Nepal Food Corporation board at Centre, District Food Management Committee and NFC depots. The District food management committee under the chair of CDO (Chief District Officer), based on the previous experience and data projection of District Food Security Network, decides the amount of deficit food the district needs. Then, it informs the market, aid and NFC to manage this deficit food.

Figure 5.2: Structure of food distribution agencies



Simultaneously, the structure and process of market in the study sites involves wholesale traders located in the Terai region in Dhangadi and Nepalgunj, intermediate traders in Sanfe, Mangalsen and Surkhet, and petty traders in Betalmandav, Gairitand and Fulbari. There is no direct linkage between food producers and consumers. At present, WFP implements food aids through the government such as local development office

involving NGOs with considerable financial and logistics support from WFP. The centre of NFC and WFP decide the amount of food and its transportation. The wholesalers decide the quality of food to be distributed through market.

The processes of these agencies have limited inclusiveness and transparency. For example, the Chief District Officer (CDO) chairs the NFC district committee. The office of the CDO is the main administrative and semi judicial office in the district. This office responds to the need of the people during emergency. However, the marginal people say that they fear to articulate their situation in the office. Similarly, the observation discussed by Fafchamps and Silpi (2003) that the private traders tend to rely on social and ethnic-based networks, also prevails in the study sites. The wholesalers, intermediate traders and petty traders in the study sites belong exclusively to traditional business caste groups such as *Marwadi*. Therefore, monopolies and oligopolies over food supplies seem to emerge. In many cases, such exploitative arrangements lead farmers to a particular shop to buy food. In addition to this, market surveys show that the wholesalers in Dhangadi and Nepalgunj move good quality fine rice to Kathmandu, Pokhara and other cities where they get good price. Even they sell good quality rice from Fulbari in India. Sometime low quality food comes from Indian market illegally without quarantine check. Adhikari and Bohle (2000) find similar case in Kaski district and argued that it was one way of coping by extending food availability.

5.2.3 Targeting of Food Delivery

The food distribution agencies, in practice, lack appropriate targeting approach as discussed by Jayne (2001), Barrett, and Maxwell (2005). For example, NFC sells food with subsidized price to the people who can buy it. Even students and government staffs are entitled to get this food. Its depots sell certain amount of food to the people of certain villages in allocated time. These depots sell maximum 40 Kg of rice per week to the people. If there are two people coming from one household, they can get 80 Kg. However, WFP forms the group of households residing in the territory of two Kilometers from the road to be constructed. However, the programme also fails to select food

insecure households because it includes all households in its group. For example, there were 16 households affected from flood in Ward no. 3 of Fulbari in 2008, who were entitled to participate in cash for work programme. Nevertheless, the implementing agency had invited all 80 households who reside in the whole settlement in that programme. At a time, the market has no specific program targeting the poor, albeit, the traders in the study areas state that the poor are their main buyers of food. In addition to this, the following paragraphs discuss other reasons of limited targeting of food supply in the study sites.

One of the reasons is that the process of food distribution is not systematic. For example, Kolti depot of NFC has provided a Card to identify households while Martadi depot has no such provision. To get food from the later depot, people need to show his/her citizenship card. However, many women, in the absence of her spouse, have to go to buy food, but most of them have no citizenship card. In addition to this, it seems that in Martadi and Mangalsen depots people reported that the staff of these depots would bribe to supply large quantities of rice to traders and local shopkeepers. They share their experience that the local traders use students to bring food from the depots, which they sell in market at a higher price. Similarly, the food distributed by WFP during emergencies was opaque. When Red Cross distributed food to the victims of floods in Fulbari in 2008, it distributed it to all households including non-victims. Farmers said that the operation committee of programme influenced WFP team to include all households including kin and networks of the committee members.

Another reason for limited targeting is that there is limited amount of food available for distribution. The table 5.10 shows that the NFC depots fulfill only 2.5 percent of the total household deficits. The depots are unable to get sufficient food from its centre. For example, the depot of Maratdi has annual demand of 15000 quintal while NFC central office provided only 11000 quintal to the depot in 2012. Pyakurel, et al. (2005) highlighted that food incorporates very high transportation costs, because of the expensive transport, storage and handling costs. In addition to this, they also observed

that there are issues of corruption in the food transportation scheme. This study also finds similar observations. For example, the contractor prefers to transport food in rainy season by plane, though it takes cost 7000 NPR per quintal. On the other hand, it costs only 2000 NPR during winter and maximum 3600 during rainy season to transport it by sheep. Transportation by plane has also led to delayed transport of food in the required places because there is no regular flight from Nepalgunj to Kolti. Similarly, the food for work programme is seasonal and a short-term opportunity. For example, FWP provided only 25 days work in Fulbari in 2008. Finally, it is very difficult to supply food during rainy season due to problem of storage and transportation through rough road.

Another reason is that the agencies lack appropriate intervention schemes. I have already discussed that all programs mostly supply rice. Nevertheless, rice is more expensive than other local grain or vegetable such as barely and potato. Traditionally, people perceive rice as food of elite and other grains as food of the poor. Sen (1981) argues that cash for work improves the ability of people to command food; it boosts demand for food and increases normal trade. Nevertheless, it has not been happening because the trade does not focus on local production.

One more reason of limited targeting is the impact of politics and power on the distribution of food. Spring (2009) and Fuchs and Glaab (2011) state that power struggles between various global and local level actors control and regulate the activities concerning with the food movement. This study also identified the negative impacts of political influences on the distribution of food. For example, the district management committee of NFC under the chair of CDO is the administrative body that exercises the power. The CDO distributes food through the coupon of Member of Parliament (MP), where the access of the poor and excluded community is nominal. Evidence shows the office distributes about 25 percent of total food with the recommendations of political party leaders. Similarly, the powerful local leaders influence the distribution of food aid. In Barabis VDC, most of the aid interventions are concentrated in the areas where influential political leader are active / reside. One ward of the VDC did not receive any

type of food aid to date. People of this ward assume that there have been fewer voters in comparison with other wards of the VDC.

In addition to these, the locations of distributing stores are not in proper sites. NFC established its depots assuming that the food insecure people will come to depots to get food. However, they are not coming because the depots are too far from their home. For example, it is very easy for the people of Barabis VDC of Bajura district to buy food from Safebagar depot. The Safebagar depot is located in another district, but the people of Bajura are not entitled to purchase food in Achham. Sometime, the people of Barabis are obligated to use the people of nearby VDC of Achham to purchase food from the depot. Similarly, WFP initially located its depot in Betalmandap near to the road in Barabis VDC. The location was costly and troublesome for the people of the project sites who live in the top ridge of mountain. Later, these people opposed the decision of WFP. As a result, the programme transferred the store to Dab village of the same VDC. Concurrently, markets are located in lower ridge of hill and mountain, and it is a problem for people living in upper ridges. The harsh geography in the hilly region also adds extra cost for targeting the needy people. People living in these locations are more vulnerable from food insecurity and hunger. However, there are very limited food supply interventions in these parts of the region.

To sum-up: The agencies are not functioning well in the villages, because of high administrative costs associated with transportation of food and management of people such as staffs of NFC and WFP, and porters.

5.3 Inter Group: Caste/Ethnicity Dimensions

Many scholars provide evidences that food in/security in Nepal has important social dimensions (Adhikari and Bohle, 1999; Team Consult 1999; Bishokarma, 2012). In addition to this, the severity of caste based exclusion and discrimination with traditionally excluded groups is tough in the study sites than among those living in other parts of the country (DFID/WB, 2006). Without understanding the dimension of inequality, it is very difficult to outline the specific picture of food in/security of the study sites. This section provides results on caste and ethnicity aspects of food self-sufficiency, access to food and consumption patterns. It analyses the existing state and pattern of food entitlement among different social groups. In addition to this, chapter 6.4 will discuss about the impacts of social exclusions in detail.

5.3.1 Circumstances of Food Self-Sufficiency

Dalits in the sample households are more insecure and vulnerable in terms of food self-sufficiency than other groups. Table 5.11 shows that 67.3 percent of total respondents produce food, which they can eat up to three months. Only 4 percent of the people are food self-sufficient for 12 months. On the other hand, the table specifies that only 12 percent of Upper Castes are self-sufficient below and equals to three months. Twelve percent of them are self-sufficient on food for 12 months. Similarly, very few (11.3%) Janjati are self sufficient for three months. Of the total of them, 8.3 percent are self-sufficient for 12 months.

Table 5.11: State of food self-sufficiency based on categories

Categories	Data	Food self-sufficiency months					Total
		< 3	3-6	6 to 9	9 to 12	12 Above	
Upper Caste	Frequency	25	61	26	59	24	195
	%	12.8	31.3	13.3	30.2	12.3	100
Janjati	Frequency	7	10	19	21	5	62
	%	11.3	16.1	30.6	33.9	8.1	100
Dalits	Frequency	76	20	8	4	5	113
	%	67.3	17.7	7.07	3.5	4.4	100
Total	Frequency	108	91	53	88	30	370
	%	29.2	24.6	14.3	23.8	8.1	100

Source: Household Survey, 2012/13

At times, the Dalits face chronic food insecurity. I asked the interviewees how many months they face as critical¹² in a year. The result in the table 5.12 demonstrates that 51 percent of them reply that they have many difficulties to manage food for four months in a year. On the other hand, majority of Upper Caste (51%) and Janjati (48 %) in the sample households have trouble to manage food for two months only. In this period, they purchase food in the market taking loan and paying higher price than during the normal period. Section 6.1 provides evidence on how they cope during period.

Table 5.12: Households facing critical months of food scarcity

Months	Critical month	Categories			Total
		Upper	Janjati	Dalits	
0	Frequency	57	26	11	94
	%	29.2	41.9	9.7	25.4
1	Frequency	3	4	1	8
	%	1.5	6.45	0.9	2.16
2	Frequency	100	30	38	168
	%	51.3	48.4	33.6	45.4
4	Frequency	34	2	58	94
	%	17.4	3.2	51.3	25.41
5	Frequency	0	0	1	1
	%	0	0	0.9	0.27
7	Frequency	1	0	0	1
	%	0.5	00	00	0.27
10	Frequency	0	0	1	1
	%	0	0	0.9	0.27
12	Frequency	0	0	3	3
	%	0	0	2.6	0.81
Total	Frequency	195.0	62.0	113.0	370
	%	100	100	100	100

Source: Household Survey, 2012/13

¹²The critical months in the study refers to the period when there is no food at home, time of grain harvesting, unavailability of food in market due to transportation problems in rainy seasons. These months are July/August and March/April.

The table also shows that about three percent of Dalits have problem of food acquirement during the whole year. This group faces hidden hunger. A Key Informant explained that this group of people lives either from forest-based product or without eating at least for a month in a year 2012.

5.3.2 Uneven State of Commodity Bundles

Ownership to land is uneven among different categories of households. Table 5.13 shows that Dalits own 3.9-*ropani* agricultural land. The results show that there is no significant differentiation on size of land ownership between Upper Caste and Janjati in the area. The land size among them is 9.9 and 9.5 *ropanis* respectively. However, the area of agricultural land among the sampled households of Dalit is one-third of the land of Upper Caste and Janjati.

Table 5.13: Average size of land among social groups (*ropani*)

Land types	Upper Caste	Janjati	Dalits	Total
Khet	5.9	7.7	1.6	5.1
Pakho	3.9	1.8	2.3	2.6
Total	9.8	9.5	3.9	7.8

Source: Household Survey, 2012/13

Most of the Dalits in the sample are landless, semi-landless and marginal cultivators. Table 5.14 shows that 94 percent of them belong to these categories (cf. section 5.1: more than 75 percent of the farmers who live below six months are from these categories). In addition to this, their land is less productive, is located in marginal area, and more prone to natural hazards.

Table 5.14: Types of cultivators within social categories

Categories	Data	Land Cultivator						Total
		Landless	Semi land less	Marginal Cultivator	Small cultivator	Semi medium cultivator	Medium cultivator	
Upper	Count	3	18	97	56	18	3	195
	%	1.5	9.2	49.7	28.7	9.2	1.5	100
Janjati	Count	7	16	15	11	9	4	62
	%	11.3	25.8	24.2	17.7	14.5	6.5	100
Dalits	Count	16	41	48	4	3	1	113
	%	14.2	36.3	42.5	3.5	2.7	0.88	100
Total	Count	26	75	160	71	30	8	370
	%	7.1	20.3	43.2	19.2	8.1	2.2	100

Source: Household Survey, 2012/13

Farmers in focus group discussion understood that the productivity of land is also structured on the caste and ethnicity of the households. Table 5.14 shows that Janajati from Fulbari own more irrigated land than Upper Caste, because they are indigenous to Kailai. However, the Dalits in the sample own one-third and one-fourth of irrigated land in comparison to those owned by Upper Caste and Janjati respectively. In opposite, they have more area of *pakho* (non-irrigated) land. I observe that most of the land owned by higher caste is suitable for every food crops including paddy and wheat. On the other hand, most of the land owned by Dalits is only suitable for maize and barely because these crops grow without irrigation.

In addition to this, there are differentiations in the rearing of cattle among different social categories of households. As I discussed in section 5.1, cattle has an important role in the food security. The number of cattle among the Dalits is very limited because they have no land to provide fodder and shelter. Instead of engaging their children for the cattle rearing, they send them to India for seasonal work. On the other hand, due to social discrimination such as the past prohibition of sale of milk products for them, they do not give priority to rear buffalo and cow for milk production.

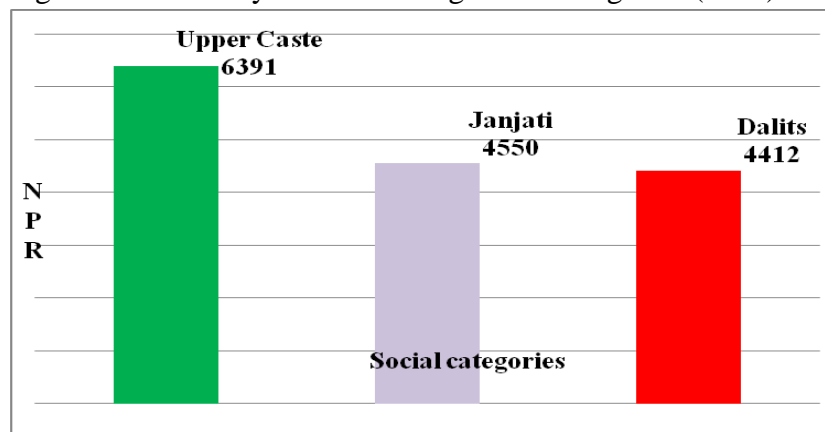
There is also a diversity among different groups in the access to external support. Government office such as District Agricultural Development Office and NGOs provides improved seeds, chemical fertilizers, improved cattle and training to the farmers. As landless and marginalized communities have less access to land, they are not able to benefit from these provisions. The agencies support through farmers groups. Local land owning farmers capture the groups who have good access to the agencies. Some Dalit and Janjati farmers in focus group discussion say that there is also little information among them about the provisions of service providers and they rarely visit the office for these services (Pls see the chapter 7.2 for detail).

5.3.3 Diversity in Access to Food

5.3.3.1 Market Acquirement

There is income inequality among different social categories. As access to food available in market depends upon purchasing power of the people, households having limited income have limited access to market food. Figure 5.3 gives evidence that monthly per household income of Janjati is 4550 NPR (45.5 \$ @ 100) and that of Dalits is 4412 NPR (44 \$ @ exchange rate of one \$=100 NPR). It shows that it is 6391 NPR (67 \$ @ 100) among Upper Caste. Therefore, the Janjati and Dalits in the sample households have lower purchasing power.

Figure 5.3: Monthly income among social categories (NPR)



Source: Household Survey, 2012/13

Following are major reasons responsible for lower income and purchasing power among them:

Traditional occupation: Caste and gender based occupations are still rigid and strictly followed in the study sites. About 25 percent of the total households of Dalit and 7 percent of Upper Caste (priests) still earn through traditional occupation in patron-client system such as blacksmith, producing weapons and agricultural tools, shoemakers producing and repairing shoes, tailors producing and repairing clothes, and priests performing rituals and worship. The works of Dalits are low paid and paid mostly in kind. Returns of the services in kind undermine the income and purchasing power of these groups.

Asymmetrical access to land: Because of unequal distribution of land, there is unequal production of cereals and other cash crops. Dalits have limited opportunities to produce surplus food and cash crops by which they can earn money. Household data shows that 14.4 percent from Upper Caste, 21.2 percent Janjati and Dalit 4.4 percent households, sell paddy (particularly from Fulbari). At a time, income opportunities through livestock rearing and cash crop farming are limited among Dalits.

Disproportionate representation to employment: Representation of Dalit in NGO and GO jobs is very limited in the sample households. Table 5.15 shows that the participation of them in Government job is only 7 percent. Major reason behind the situation is that they have limited access to education.

Table 5.15: Representation of different caste groups in job

Categories	N	GO	%	NGOs	%	Total %
Upper	195	29	14.9	7	3.6	18.5
Janjati	62	7	11.3	1	1.6	12.9
Dalits	113	7	6.2	2	1.8	7.9
	370	43	32.4	10	6.9	39.4

Source: Household Survey, 2012/13

Involvement in business and self-employment: Business and self-employment is very good indicator of income of the people. It contributes about 16 percent of total income of the people. When I asked if their household was involved in some kind of business and self-employment, 16.4 percent of Upper Caste, 24.2 percent of total Janajati and 7.6 percent of Dalit among them replied that they were engaged in business. Most of the Upper Caste people in the sample households are involved in running hotels, grain retail shops, petty shops of other goods, and electronic shops; most of the Janjatis (*Tharu*) are involved in *riksha* (three-wheel cycle) pulling, meat shop, hotels and Dalits are involved in traditional occupation. People from Dalits and Janjati perceive that the businesses they follow are not well-remunerated.

Informal wage system: The relationship between wage rate and the price of food is a crucial market variable in determining the food entitlement of the farmers (Osmani, 1993). Most of the farmers in Birpath and Barabis practice informal wage system called *parma*. Instead of giving wage, there are practices of labor exchange among them. It limits the earning opportunity particularly of the Dalits. In very rare cases, Upper Caste households provide labor to the Dalits. In some cases, landlords still pay to the wage laborers in grains in the VDCs. The practices of paying in cash in Hills and Mountain is very limited.

Purchase in credit: Food purchase in credit also limits the purchasing power of the people. Farmers believe that they need to pay more when they acquire goods on credit. The interest rate differs three to five percent in different shop. They return credit once they get remittance, normally in four-month period. Table 5.16 shows that 42.5 percent people reply that they purchase the food only by credit. Majority of poor Dalits in sample households buy in credit. As most of the income is expended in obtaining food, the credit system makes food costly for them. It also reduces the opportunity of saving and investment for them.

Table 5.16: Households mechanism to purchase food

Categories	Data	System of purchase			Total
		Cash	Credit	Both	
Upper	Count	63	81	51	195
	%	32.3	41.5	26.2	100
Janjati	Count	35	17	10	62
	%	56.5	27.4	16.1	100
Dalits	Count	24	59	30	113
	%	21.2	52.2	26.6	100
Total	Count	122	157	91	370
	%	32.9	42.5	24.6	100

Source: Household Survey, 2012/13

5.3.4 Food Habits

There is different practice in per day eating among different social groups. Cohen, et al. (2005) argues that food consumption is an important indicator for food security. Table 5.17 shows that 31.3 percent of the Upper Caste people in sample consume meal thrice in a day. On the other hand, 86.7 percent of Dalits eat twice in a day. This number of eating determines the sufficiency of food in the house. There is general practice that households having sufficient food consume thrice in a day. The table also shows that 58.1 percent of Janjati eat thrice in a day. It is the culture that household members among *Tharu* community eat early in the morning for going to field for farm work. Later they take lunch and dinner.

Table 5.17: Number of eating among social groups

Categories	Data	No of eating		Total
		Twice	Thrice	
Upper Caste	Count	134	61	195
	%	68.7%	31.3%	100%
Janjati	Count	26	36	62
	%	41.9%	58.1%	100%
Dalits	Count	98	15	113
	%	86.7%	13.3%	100%
Total	Count	258	112	370
	%	69.7%	30.3%	100%

Source: Household Survey, 2012/13

Farmers in focus group discussion said that there is differentiation among social groups in the consumption of varieties of food between morning and evening. There is the culture among Upper Caste households original to the far-west hills and mountain of consuming rice and lentils in the morning while they eat chapatti and vegetable in the evening. The *Tharu* community also eats different varieties in the morning and in the evening. However, the Dalits eat either rice or chapattis of maize during both meals. It shows the lack of a balanced diet among Dalits.

Similarly, the consumption of milk is different among them. Table 5.18 shows that 55 percent of the Upper Caste consumes milk at least once in a week. The table also shows that 16.1 percent of Janjati and 12.3 percent of Dalits drink milk at least once a week. Milk is the most prestigious and healthiest food in the rural area of Nepal. It is also a ritually important food.

Table 5.18: Weekly consumption of milk among different caste groups

Times in a week	Data	Categories			Total
		Upper Caste	Janjati	Dalits	
0	Frequency	88	52	98	238
	%	45.1	83.9	86.7	64.3
1	Frequency	1	0	0	1
	%	0.5	0.0	0.0	0.27
2	Frequency	1	0	1	2
	%	0.5	0.0	0.9	0.5
4	Frequency	4	0	0	4
	%	2.1	0.0	0.0	1.1
6	Frequency	1	0	0	1
	%	0.5	0.0	0.0	0.3
7	Frequency	78	9	11	98
	%	40	14.5	9.7	26.5
14	Frequency	21	1	3	25
	%	10.8	1.6	2.6	6.8
Total	Frequency	195	62	113	370
	%	100	100	100	100

Source: Household Survey, 2012/13

The Janjati consume more meat than the Upper Castes and Dalits. Table 5.19 shows that 80.65 percent former consume meat at least once in a week. Similarly, 60

percent of the later group consumes meat once in a week. However, about half of the respondents from the Upper Caste replied that they did not eat meat in a week in the period of survey.

Table 5.19: Weekly consumption of meat among different caste groups

Times in a week	Data	Categories			Total
		Upper Caste	Janjati	Dalits	
0	Frequency	91.0	12.0	43.0	146.0
	%	46.7	19.4	38.1	39.5
1	Frequency	75.0	43.0	48.0	166.0
	%	38.5	69.4	42.5	44.9
2	Frequency	24.0	7.0	20.0	51.0
	%	12.3	11.3	17.7	13.8
3	Frequency	4.0	0.0	1.0	5.0
	%	2.1	0.0	0.9	1.4
7	Frequency	0	0	1.0	1.0
	%	0	0	0.88	0.27
14	Frequency	1.00	0.00	0.00	1.00
	%	0.51	0.00	0.00	0.27
Total	Frequency	195	62	113	370
	%	100	100	100	100

Source: Household Survey, 2012/13

Similarly, the consumption of alcohol is also different among different caste and ethnic groups. Data analysis from household survey shows that at least one member drinks alcohol regularly in 93.5 percent, 67.8 and 32.8 percent in the house of Janjati, Dalits and Upper Caste respectively. The survey finds that 24.8 percent, 11.3 percent and 1.00 percent house of the Dalits, Janjati and Upper Caste prepare local alcohol at least one time in a year. The issue of alcohol is very important in the region. To prepare local spirit, people use scarce food resources. It uses up a lot of food grain. It is also one of major cause of food insecurity among these households. On the other hand, people expend huge amount of money to purchase spirit, which reduces food purchasing power among them.

5.4 Intra-Households: Gender Dimension

Chapter One showed that women within households are more food insecure than men. In this regard, the relation of gender has important influence on the food shortage for them. Without understanding intra-household dimensions, it is very difficult to outline the specific picture of food in/security among men and women. This section provides results on women's food production situation, intra-household food allocation, and access to food, factor affecting women's food entitlement and changing patterns of gender institutions. In addition to this, the issues of labor migration and women headed households has discussed in chapter 6.3.3 in detail.

5.4.1 Patriarchal Food Production

The previous section discussed that the ownership on land is very crucial factor for self-sufficiency on food. Many investigations prove that there are differential access to land between men and women (Siegmann and Sadaf, 2004; Agrawal, 1994; Kabeer, 2010). Table 5.20 shows that 11.1 percent women in sample own land. The average size of their land is just one-tenth of an average male holding. Women say that they have used most of the patches of their land for housing and are not suitable for farming.

Table-5.20: Land ownership of men and women

Categories	Data	Land ownership			Total
		Male	Female	<i>Ailani</i> ¹³	
Upper Caste	Count	165	28	2	195
	%	84.6%	14.4%	1.0%	100.0%
Janjati	Count	46	6	10	62
	%	74.2%	9.7%	16.1%	100.0%
Dalits	Count	102	7	4	113
	%	90.3%	6.2%	3.5%	100.0%
Total	Count	313	41	16	370
	%	84.6%	11.1%	4.3%	100.0%

Source: Household Survey, 2012/13

¹³ Agricultural land that farmers regularly cultivate. It is owned by Government, but not registered in the name of farmer.

Women believe that current food production practices do not favor the needs and priorities of women. The males decide which crops to farm and produce in their land. As a result, the production focuses on cereal crops, which require higher involvement of male in decision making such as purchasing and use of chemical fertilizers. These crops include wheat and paddy. These are the crops promoted by market through distribution of seeds where male have easy access (Adhikari and Ghimire, 2006). On the other hand, women focus productions of agricultural crops that are easy to transport, cook with less quantity of firewood and easy to sell in local village market for quick cash.

5.4.2 Intra-Family Food Allocation

The distribution of food between male and female within the home is unequal during scarce periods. The result shows that the time when there is no harvesting (January-February, August-September), women are more vulnerable from insufficient food. The inequality is more critical in poor joint family households where power of gender hierarchy and kin relations work between mother and daughter in-law. Sometime the relation between them is so antagonistic that mother in-law does not eat meal cooked by daughter in-law, and they do not leave it for each other.

There are two types of food prepared during the scarce period in rich families. One type is made from fine grains, which are for parents and son, and other type is made from coarse grains for daughter in-law and daughter. In general, staple foods, such as rice, lentils, and bread are distributed evenly across gender lines, but prestigious food, which is rich in micronutrients, such as vegetables, yogurt, ghee, and meat are allocated preferentially to adult males.

5.4.3 Gendered Purchasing Power

Women's income opportunities are limited in the area. They are obligated to engage in non-monetised work due to limited options and subsistence farming. The

institution of work division within family, in these regards, also limits women's choices of work to earn from available opportunities.

Women have limited access to outside employment opportunities. Free movement anywhere is an essential condition for productive service (Siegmann and Sadaf, 2004); women and child girl's mobility in the study sites are mostly restricted and either permission is necessary or accompanying with brothers or other male parts needed when they have plan going job markets outside the village. Due to limited infrastructure and transportation facility, women need to stay overnight to find income earning opportunity, which is impossible in rigid societies like in the study sites. In addition to this, there is perception among high caste family that unmarried girl should not do wage work outside because of risk and fear of loss of virginity.

Furthermore, women face market exclusion in generating income. Sale of agricultural products is one of the income earning options, though; its production does not fall under women's priority. Therefore, women are not able to be involved in its transaction process. They need an authority letter or presence of a male member for any commercial purposes such as taking loans, credit and exchange of goods. In mountainous areas, it is also very difficult to transport agricultural product to far located markets due to difficult terrain. Therefore, males carry certain products to and from market.

5.4.4 Women's Access to Food Aid

Women's entitlement to WFP food aid is varied. Their participation in Food for Work (FFW) is significant while their participation in Cash for Work (CFW) is limited. Males mobilize money and favor to work if there is a provision of cash. As a result, more males benefit from CFW programme. While women have to feed the family, they do not benefit from FFW. Similarly, the aid sometime provides payment based on the volume of soil they dig. In this situation, women naturally earn less income than physically able-bodied men do. However, WFP has promoted equal daily wages for male and female

worker in food aid project. This has positive impacts on the wage system in the study sites. Now, both male and female, in many cases, get equal wages not only in aid work but also in other labor works.

Women's access to NFC food is limited. For many years, Nepal Food Corporation (NFC) has been providing subsidized food to the households in the study sites. People need to show citizenship card to get this food. Most of the women in the area do not own citizenship card due to some legal barriers. In addition to this, the distribution depots of the corporations are located in district head quarters, very far from the village. It needs night stay. That also makes it impossible for women to visit to these depots.

5.4.5 Factors Affecting Women's Food Entitlement

The focus group discussions and key informant interviews among women reveal that existing gender institutions are major factors determining women's food entitlement. Table 5.21 summarizes major institutions, which establish their entitlement to land, share tenancy, wage/employment, credit, distribution of nutritious food and eating practices. These institutions even function rigidly in the region. The institutions create restriction for women to find wage labor, employment, land ownerships, credit, nutritious and sufficient food.

Lack of land ownership and tenancy are major factors behind the failure of production entitlement of women in the study areas. The institutions such as patrilinearity, patriarchal inheritance law, and cultural practices of farming and credit institutions create the situation. Siegmann and Sadaf (2004) and Koolwal (2007) opine that the son preference is the major factor for land insecurity among women. They discussed that the son is entitled to pass the family name, represent insurance for parents in the old age and carry out important rituals when they die. Therefore, he is entitled to own his parents property including land. The study finds that these institutions are firm in the region because a son is a crucial capital for the parents as he is a potential remittance

earner, which is major source of income and livelihoods in such resource poor areas. A son is also able to work in harsh local environmental conditions.

Table 5.21: Major institutions affecting women’s food entitlement

Factors	Major institutions	Impacts
Land ownership	Patereniliaty/son preference	Barrier to get credit for household head Limitation to farm priority products for non-head high caste women.
Share tenancy	Cultural practices of farming Barriers to plough the land to women	Barriers to get credit to head women Limited food production for women household head
Wage/employment	Labour exchange system (<i>Perma</i>) Minimum wage Patrilocality/early marriage	Limitation on income opportunities Reduction in purchasing power Labor exploitation Low education status
Credit	Sanction of male Land tenure Kin relations	Barriers to purchase food from market Limitation on use of agricultural inputs
Distribution of nutritious food	Food discrimination <i>Chhaupadi</i> system	Barriers to get nutritious food Malnutrition Low level of health status
Eating practices	Women eating at the last Women eating left-over	Inadequate food consumption

Source: FGD, 2013

The issue of land ownership is different among diverse caste groups. Land ownership is more important for high caste and indigenous women who are the heads of their household, because of absence or death of their spouses. Because of limited land entitlement, they are unable to get credit from banks and purchase agricultural inputs required for them. Evidences show that such women use more compost manure than those used by male-headed households. In addition to this, they are not able to use land as they wish.

The issue of sharecropping tenancy has major impacts for Dalit women-headed households because these households are mostly landless. These women are not able to get land for sharecropping. Landowners perceive that women are not able to manage agricultural inputs. In addition, similar to previous findings on cultural restrictions on women to perform some agricultural activities by Kabeer (1990), women depend on men

for ploughing, driving tractors, and running irrigation machine. Only a woman who has sons at working age of 13 or above would have a chance of getting land in tenancy for sharecropping. However, most of the sons accompany their fathers for work in India after reaching the working age.

Allendorf (2007) states that level of education play a crucial role in food acquirement. In the region, education and skills among girls are limited due to the institutions of patrilocality. Girls at younger age are demanded as working laborers, and get married early. In addition to that, to cope up with male outmigration, the child girls drop out from the school limiting their future as an income earner.

Women in Focus Group Discussion say that Women from high caste groups are not given animal products such as milk, curd, and meat during their menstruation cycle, pregnancy and breast-feeding right when they need nutritious food the most. It shows that 5 days in every month at least they do not eat nutritious food during menstruation cycle. In addition to this, women are discriminated after giving birth to a female child. If she gives birth to a son, her husband and father in-law celebrate the event and provide enough food she needs. If she gives birth to a daughter, they neglect her and give less nutritious food such as the chapatti or millet. In addition to this, there is a tradition that such women do not eat fish, milk, and meat up to 12 days after childbirth in Barabis.

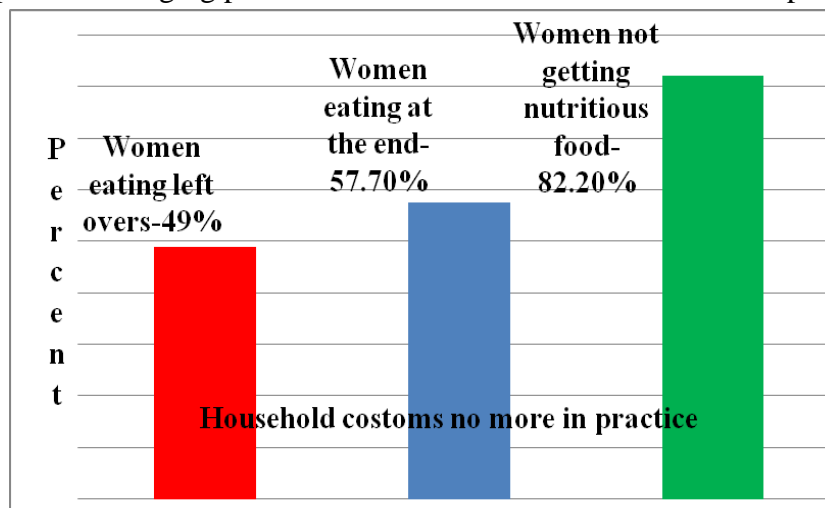
As previous finding of Harris (1983) and Shively et al., (2011) show, the practice of eating at the last and leftovers still exist in practice but particularly among Dalit women. Most of them eat leftovers of their husbands. However, during scarce periods when there is no harvest and processing of food (January-February, August-September), almost all women from all caste groups do these practices. In the area, the youngest daughter in-law distributes food in the home and she eats at the last. Unless the appetite of all the members is fulfilled, she does not eat. Five percent women reply that they remain without eating at least 10 days in a year in scarce period due to finishing of food at any time.

5.4.6 Changing Gender Institutions

The study observed changing patterns in gender institutions with respect to women’s production, access and consumption entitlement. Women’s ownership of land has slightly increased in the recent days because the Government of Nepal has provided incentive of 30 percent reduction in registration fee if the land is recorded in the name of female. Women from high caste *thakuri* families in the hills and *Brahmin/Chhetri* families in Terai are benefiting from this provision. These women also have increasing opportunities for the employment because of improving education status and having good social networks with state mechanism.

At present, there are also some changes in household customs of food distribution. Out of total women respondents 49 percent, 57.7 percent and 82.2 percent replied that there is no more the practice of eating leftovers, eating at last, and not getting nutritious food in the home respectively (Graph 5.4). However, there are different patterns of changes among different social groups. The practices of eating at the last and leftovers are significantly changing among high caste women. As Dalits are more food insecure than those of high caste, practices of eating residues still exist among them.

Graph 5.4: Changing pattern of intra-household food distribution practices



Source: Household Survey, 2012/13

Food discrimination during the menstruation cycles is still in practice among high caste while it is slightly changing among Dalit community. Dalits seem to be more flexible regarding such rules while high caste females pursue the rules strictly. However, there is a significant change among high caste families in the practice of not giving nutritious food such as vegetables, lentils, and meat in times other than menstruation cycles. Upper Caste women get these foods equally during resource surplus period.

Women's self-help groups¹⁴ have been playing crucial role to change the institutions. There is at least one of such groups in each settlement. It is believed that Maoist had supported these groups during their war¹⁵ to raise the voice of women. The groups also made a provision of penalty to the households that practice discrimination of women in distribution of food. NGOs also support them to implement matching fund, saving and credit and empowerment programme. The matching fund has increased the access of women in credit to some extent. The fund has also widened their access to market food. It supports to the women to pay the credit within timeframe, they are able to convince the traders to give food in credit. Women, who have land, use the money to purchase improved seeds and chemical fertilizers. Some women have started to cultivate cash crops such as vegetable and fruits. Now, they have opportunity to sell these products in local markets.

¹⁴Women's groups called "women's society" in Bajura and Achham and credit and saving groups in Kailali. The groups actually formed automatically in Bajura and Achham by women whose husband were migrating India for seasonal work. These groups formed originally to manage and mobilize the remittance that their spouse sent.

¹⁵ Nepal had suffered from 10 years long (from 1996 -2006) war between state and then Nepal Communist Party (Maoist). The struggle of Maoist was claimed to be against political absolutisms, social injustice and economic inequity. Now the party is ruling party of Nepal.

Concluding Remarks

Almost all of the households in the study sites face food production deficit because of limited agricultural land, nominal use of agricultural inputs, inadequate harnessing of livestock and forest based food as well as inadequate attentions of Government policies. The sites also have limited development of food supply and demand-side factors essential for access to food. Remittance still contributes to a major portion of the household income. Rice is the major food item in the most of the households, which is a not major crop in Birpath and Barabis. Regarding food utilization, access to health and drinking water is improving but access to sanitation is still limited. The food deficit households depend on distributing agencies such as market, WFP food aid and Nepal Food Corporation (NFC) to fulfill their food need. Market has been playing a crucial role in recent years due to connectivity by construction of road. However, the food security of the poor and marginalized is still vulnerable due to lack of targeting methods of these agencies.

Dalits are the most vulnerable to food shortage than the other social groups. However, Janjati are also vulnerable to food security. Upper caste is relatively better as compared to other groups. Dalits have limited land. Though Janjati have good access to land, they have limited access to inputs. However, food purchasing power of both categories is little because of traditional occupation, unequal educational status and limited access to jobs, unequal opportunities for business and self-employment, and informal wage system. Dalits face caste-based discrimination in consumption and utilization of food. Within households, women have limited production entitlement due to patriarchal land inheritance. Gendered income strategies limit their purchasing power. Their access to FFW is helpful while access to FFW and NFC food is limited. Gender-based intra-household food allocation institutions such as eating at the last and eating the leftovers, discrimination in food distribution, barriers to provide milk and meat products during menstruation, though still functioning, are changing in the sites. Discrimination during menstruation is still in practice among upper caste. The practice of eating leftovers is still practiced among Dalit. However, such customs are no more practiced among Janjati.

CHAPTER SIX

FACTORS AFFECTING FOOD ENTITLEMENT

The previous chapter discussed states and patterns of food security in the study sites. It discussed situation of food production, access to food and its consumption on the dimension of sites, caste/ethnicity and gender. It also outlined the governance and targeting methods of food distributing agencies.

The literature review showed that different social and economic factors affect food security. This chapter analyzes how economic factors such as the development of market, construction of road and male outmigration; social factors such as caste and ethnicity based exclusion; and political factors such as conflicts influence food entitlement of different category of people. It also looks at how the local people cope with the negative impacts and exploit potentialities from positive force.

6.1 Development of Market

The importance of markets was widely discussed in the introductory chapter (Chapter 1) and literature review chapter (Chapter 2) of this thesis. In section 5.1.2, it gave general synopsis of market development in the region. In chapter 5.2, it focused on the governance of market based food distribution. This section evaluates how the development of the market affects production and access to food, and consumption entitlement of the people.

6.1.1 Market based Production

The market has been evolving as a new institution with private actors in the area of agriculture production. In Barabis, new local markets are established in 2009 in

Betalmandav, Malika and Dhab village. In Birpath, there is one market in Gairitand. In Fulbari, there are bazaars in Nuwakot, Pachhisghar and Fulbari. Local people have established these markets after the construction of road. Therefore, they are located along the road (Figure 6.1).

Figure 6.1: Market establishment in Betalmandav (Barabis)



These markets are now influencing food production practices of the households. Earlier, they were only involved in food distribution. These local markets have close link with the markets located in Safe, Surkhet and Doti as well as wholesale traders situated in Dhangadi and Nepalgunj. The traders also represent in district level committee formed by DADO.

The roles of private sectors in agricultural production are noteworthy now. As discussed by Anderson and Roumasset (1996), this sector has grown as a powerful change agent in the sectors. Previously, the District Agriculture Office was the only service provider in the sector where the access of the poor was very limited. Farmers, in the farmer's focus group discussion, say that the service of this office has still not been satisfactory. Now private sectors such as Agro-vet and vegetable cooperatives play crucial role in the distribution of agricultural inputs. They purchase input from wholesaler

and sell to farmers in retail. They trade fertilizers, improved seeds of vegetables, insecticides and pesticides. They also provide services in livestock promotion such as treatment to livestock, which promotes the production of livestock-based food.

Market induces obvious technological intervention in the study sites. In Fulbari, market supplied high-yielding varieties of paddy, maize and wheat from last 25 years helping farmers to increase crop yield. In all VDCs, market has promoted off-seasonal vegetable farming. Farmers use insecticides and pesticides significantly in the production of these vegetables which increased its per unit area production. Similarly, technology of poultry farming is the important intervention in all sites for production and consumption of meat as well as generating income from it. There are emerging opportunities of rearing of improved varieties of poultry and shops of meat in almost every ward of each VDC. However, there are also some drawbacks of these technological interventions. The quality of vegetables produced through improved seeds is rather low. The taste of these vegetables is lower than the traditional one. These vegetables cannot be stored even for a day. Farmers believe that these vegetables are not healthy. Instead, maize has been rather a cash crop used to feed poultry farming. Because of growing use of purchased maize for poultry, the production and consumption of maize in rural area has dramatically reduced. The increased poultry industries and high demands for them for feed has increased maize and soybean prices.

Market has promoted the commercialization of farming. Some farmers have now started market-based production in all VDCs. Market purchases the local products and sells it to the consumers located far from the villages. For example, some shops in Betalmandav and Birpath regularly purchase vegetable, fruits, potato and lentils from the village and sell it to the intermediate shop located in Surkhet and Silgudi. In Fulbari, rich proprietors pursue commercial farming in a consolidated way. They produce some cash crops such as banana in mass scale focusing upon the market.

The role of cooperatives to distribute agricultural inputs is noticeable in recent days. Cooperatives are important private, group-based institutions. The Government has provision of distributing the subsidized fertilizers through these cooperatives. These are active in Fulbari. There are Nawa Partiva, Suryamukhi Mahila and Kirshak Valai cooperatives that distribute chemical fertilizers and vermin compost. However, in Hills and Mountain, very few cooperatives perform such work. There are only four cooperatives in Bajura district. In Birpath, a vegetable cooperative guarantees the price of local production. Farmers sell their product to this cooperative. These cooperatives not only sell agricultural inputs but also provide cheap loan, which reduce the vulnerability of the poor during resource scarce time.

However, the growing use of market-based food has negative impacts on the traditional food production system. Because of increased consumption of rice, farmers believe that they have actually the insecurity of rice instead of food. The situation of insecurity is not actually the deficit of maize, barely, potato and other food. Traditionally the farmers in Birpath and Barabis used maize, soybean and barely in breakfast. The production of these traditional crops has reduced because many people use market delivered biscuits and noodles in breakfast. As the use of packet oil increases, the production of mustard has also reduced in Fulbari. The production of local alcohol has dramatically reduced in all VDCs, since imported alcohol is easily available. This has reduced purchasing power of the poor because the price of imported is higher than local ones.

6.1.2 Availability of Cheap Food

Market has created opportunities for farmers to raise income through off-seasonal vegetable farming. Evidence shows that people living in all VDCs earn from production of off-seasonal vegetables. Analyzing the household data, about 18 percent of total households sell such vegetable such as cabbage, tomato, cauliflower produced in off-season to local market. Per household earns an average 1350 NPR (US \$ 15 @95) from

the products. The range of earning is from 500 to 70000 NPR. These products contribute about 2 percent of total household income.

The impact of market is observed in off-farm earning opportunities. In Birpath and Barabis, it has supported to change the payment system for agricultural laborers. Earlier, the landowners paid to laborers in grains. Now, most of them pay in cash. The wage for agricultural laborers also has increased. Ten years ago, there was wage of 50 NPR (0.5 US dollar) per day for male and 30 NPR for female agricultural wageworkers. Now, the wage is 300 NPR (US \$ 3 @ 100) for both male and female in non-specialized work. Previously, the laborers had the ability to purchase 3 Kg of rice with the wage, as the price of rice was 12 NPR per Kg. Now, they can purchase about 8 Kg of rice with the wage as per Kg cost of rice is 40 NPR per Kg. The increase in wage has supported to build food purchasing ability of the wageworkers.

Similarly, income through engagement in market based goods and services are noticeable. The flow of both food and non-food goods and services, even in hills and mountain, has increased. Now, local people engage in the trade of packaged food, imported alcohol and readymade clothes. They also involve in the services of communication, clinical treatment, and electronic facilities. These goods and services are well profitable for them too.

More importantly, market has been breaking up traditional exploitative social relationships such as patron-client relations between Upper Caste and Dalits. Traditionally, marginalized communities were dependent on patrons for their food and other needs. Now, they rely on the market to fulfill their food requirement. Especially through the remittances, they purchase food and other goods. They also have opportunities of purchasing food in credit. The patrons also sell their products in the market instead of giving it to their past clients.

However, market has also created pressure on traditional occupations of Dalits. For example, market delivered iron tools are replacing traditional iron tools prepared by black smiths for agriculture and home utensils. Market tools are cheap and readily available in market in Dhangadi. Similarly readymade clothes, shoes, furniture are replacing the local clothes, shoes and furniture prepared by tailors, shoes-makers and wood workers. These new goods have created new form of business in the sites. However, these new business demands investment where the Dalits can't compete with other investors. As a result, almost all of the occupational caste groups are leaving or changing their traditional occupation. Nevertheless, some of them have shifted towards the market and trying to modernize their professions.

6.1.3 Market Consumerism

The growing use of corporate readymade food is observed. Though there is no strong existence of corporate sectors in food chain within Nepal (Adhikari and Ghimire, 2006), extension of corporate food increased shortly after the Commerce Policy 1992. Farmers consume readymade food as breakfast in the study sites. Ten percent households in Birpath and Barabis and 40 percent households in Fulbari use packaged food such as noodles and biscuits. These foods take less time to prepare. Women perceive that it has reduced the workload of those who are engaged in the preparation of food. Farmers feel that these types of food provide protein and carbohydrate in cheap price. The role of media seems to be important in the consumption of such food. The advertisements broadcasted through a growing number of FM stations play crucial role in purchasing and using these products. The shopkeepers also influence the use of such products. They convince the buyers to consume new arrival biscuit, noodles, oil and other commodities.

Improved conditions of markets in the villages have improved the traditional food preparation process. Cooking is important for preventing disease, improving nutrition and increasing the taste of many foods (Halkier, 2009; Terragni, et al., 2009; Richardson, 2010). The use of packaged oil and other ingredients for cooking has increased, and it

changed the way food is prepared. People use more packet oil, spices and other ingredients. Many key informants stated that there is good mixture of oil, salt and other additives in recent days to cook vegetables while there was practice of cooking vegetables only using oil as additive in the past. The food now prepared in home is tastier than before.

However, market – as Farmers in Key Informant Interview said - has increased the dependency of local people on trade-based food. In addition to this, the increase in the volatility of food prices is making the poor people in study sites more vulnerable. Table 6.1 shows that 94 percent of total respondents replied that they regularly face the problem of price hike.

Table 6.1: Households experiencing food price hike for the last 5 years

VDC		Feeling price hike		Total
		Yes	No	
Fulbari	Frequency	113	13	126
	%	89.7	10.3	100
Birpath	Count	117	2	119
	%	98.3	1.7	100
Barabis	Count	119	6	125
	%	95.2	4.8	100
Total	Count	349	21	370
	%	94.3	5.7	100

Source: Household Survey, 2012/13

Many people from Birpath and Barabis felt that they face risk from price hike. Table 6.1 shows that 98.3 percent households in Birpath experience increase of the food price. People in Birapth and Barabis face a double impact by high transport cost and climbing prices.

People also face the speculative behaviors of traders during the time of price hike. These behaviors manipulate the trade and price during the crisis (Moreira, 2003; Misselhorn, et al., 2012). The buyers who purchase food in credit have to pay additional cost. For example in 2011, rice was sold for 2800 NPR (US \$ 103 @95) for 50 kg pack to the buyers who paid in cash while they sold it in 2900 (US \$ 104 @95) NPR for credit buyers. The traders were very reluctant to sell food in credit during that time.

People in Fulbari VDC suffered from Indian ban on export of non-Basmati rice and wheat in 2008. They shared that when India banned the export in that year, they faced many risks. The VDC is bordered with Indian market. The market of India is just 2 kilometers away from the main village. Many people fulfill their deficit food from Indian market. During the crisis, they even could not purchase coarse rice from the Indian market. The boarder security of India was strictier during the period.

6.1.4 Copping Strategies to Price Hike

People adopt many strategies to cope with price hike. As table 6.2 shows, to manage the special case of price hike in 2008, they purchased food in credit, sold their utensils, reduced their food consumption, borrowed money from moneylenders, received support from relatives, used remittances from India, and relied on aid support.

Table 6.2: Copping strategies to price hike among different social groups

Strategies	Data	Categories			Total
		Upper Caste	Janjati	Dalits	
Credit	Frequency	54	3	27	84
	%	27.7	4.8	23.9	22.7
Less consumption	Frequency	7	0	16	23
	%	3.6	0.00	14.2	6.2
Money lender	Frequency	13	0	2	15
	%	6.7	0.00	1.8	4.1
Relatives Support	Frequency	24	19	4	47
	%	12.3	30.6	3.5	15.5
Not need	Frequency	57	22	19	98
	%	29.2	35.5	16.8	26.5
Migraiton to India	Frequency	12	9	25	46
	%	6.2	14.5	22.1	12.4
Aid support	Frequency	27	9	20	56
	%	13.9	14.5	17.7	15.3
Total	Frequency	195	62	113	370
	%	100	100	100	100

Source: Household Survey, 2012/13

The coping strategies are different among different social groups. Table 5.2 shows that 26.7 percent of total household did not need any kinds of support. Apart from this, 27.7 and 23.9 percent of Upper Caste and Dalits respectively replied that they purchased food

in credit from market. However, support from relatives is a major strategy among Janjati. As most of the Janjati are from *Tharu*, they have relatives in India. They received cash and food from them during the crisis.

6.2 Construction of Road

The importance of road was discussed in Chapter 1 and Chapter 2 of this thesis. In chapter 5.1.3, a general synopsis of the state of road development in the region is given. In chapter 6.1, the role of road in the development of market has been discussed. This section examines how construction of road affects production, access to food and consumption entitlement of the people in the study sites.

6.2.1 Commercialization of Farming

Road has supported farmers to produce market based crops. As discussed by Gautam (2001) and Garrett and Ruel (1999), the infrastructure affects growth positively. It has initiated the commercialization of agriculture in all VDCs. In Birpath, after construction of road in 2008 that links with Surkhet, farmers started to cultivate vegetable to sell in the market. Earlier, they produced local vegetables but distributed them free of cost to the villagers. Now, they have also established vegetable cooperative and local sale-centre (Figure-6.2). It purchases the vegetables that the farmers produce.

However, the road has also caused the loss of productivity of agricultural land. Government has constructed roads in hilly region without proper assessment of environmental impacts. These roads were aligned in 1994/1995 when the then Government initiated the campaign of "Let's Make Our Village Our-self". Villagers dug the land to construct road without any technical support. In Birpath and Barabis, erosion and landslide in upper and lower part of the road are rampant. Landslide has caused the loss of agricultural land. Erosion has caused the reduction in the productivity of the land. It has destroyed the old irrigation channels. In Barabis, there were three traditional irrigation channels. The construction of road has destroyed these channels.

In addition to that, the road has transferred the land from agricultural to non-agricultural purposes. Alexandratos (2005) and Mu and Khan (2009) argue that the transfer of water and land resources to non-agricultural sectors in the recent years is the key concern on whether the remaining resources can sustain food security or not. In the sites, the Government has converted productive agricultural land into the road. As most of the road passes through lower parts of settlement where productive land existed, the roads wipe out agricultural land in the areas. Local people have also established market where they used productive agricultural land for settlement, Bus Park, garbage management and other purposes. In Barabis VDC Ward Nine, the road has destroyed the agricultural land that could produce 900 quintals of paddy. In the recent times, it has increased the value of agricultural land. It is a major reason for price hike of such land. Lands near to the road, suitable for settlement and business, have a higher price. The poor people are not able to purchase it for the purposes of agricultural production. The study finds road bias with local elite. Local decision makers mostly make road which passes through the land of local influential people, and thus the value of their land increases.

6.2.2 Diversification of Income Strategies

Road has promoted regional integration of business among traders living in Terai, Hills and Mountains. For example in figure 6.3, the road connects Martadi of Bajura

(Mountain) with Dhangadi of Kailali (Terai) district. This road not only joins these two regions but also unites them with major markets in Hills. After construction of east-west highway, the markets in Nepalgunj and Dhangadi were established. After construction of road to Sanfe, the market of Silgadi and Sanfe were established. Now after the construction of roads in the village areas, the market in Betalmandav and Gairitand were established. The structure of market in the study sites involves wholesale traders located in Terai region in Dhangadi and Nepalgunj, intermediate traders in Sanfe, Mangalsen and Surkhet, and Petty traders in Betalmandav, Gairitand and Fulbari. Food from wholesale trader moves to the hills, mountains and some rural areas of Terai region.

Figure 6.3: A part of road in Barabis joining Dhangadi to Martadi



Source: The researcher, 2013

Despite physiographic integration and enhancement of market through road between Terai and Hills, the flow of business is unidirectional from Terai and India to hills and mountain. There is lower level of product movement from hills to plain area. Mostly I observed that the vehicles to hills and mountain go loaded with goods but they are empty when they return from there. There is a need for improved home and/or local agricultural production in conjunction with market and road development.

Road has made diverse impacts among different categories of people living in the region. It has created business opportunities for the rich. Number of transport-based business has increased. There are some bus stops and check posts managing the transport. Number of hotels and shops in the newly established market has also increased. The movement of people in these centers is significantly observable. However, these markets have also declined old markets. For example, there was an old route of travel that crossed through the village of Dungritola in Barabis VDC. There were some shops and hotels. Now a new road has been constructed that crosses through Betalmandav, a 30 minutes' walk toward lower ridge, and this has led to the establishment of many shops and hotels. Now business in the old market is almost nil. Similar situations exist in Birapth too.

Road reduces the transaction costs¹⁶ for the people living in the hills and mountain in the movement of food and other goods. It is essential to reduce travel time to markets and transport costs (Dillon et al. 2011). Excessive transaction costs impede access to the market (Sen, 1981; Barrett, et al., 2009). After the construction of road, that connects Birpath and Barabis, time required for movement of people to purchase food has been reduced. Twenty-years ago, people of Barabis had to travel for a month to purchase 40 Kgs of food from Kanchanpur. Now they have opportunities to purchase the food within one hour.

Major role of road is in the stabilization of food price in the study sites. After the construction of road to the study sites in 2009 , the food price dropped by half. It also creates uniformity of food prices. In Barabis, the cost of one kg rice and wheat was NPR 42 before the construction of road from Safe to Betalmandav. Now the costs of these grains are NPR 30 and 28 respectively. During normal period, the cost of 50 Kg of rice is 1400 but during rainy season, its cost becomes 2800 NPR.

¹⁶Transaction costs is costs of running the economic system (Williamson 1985).Such as the unit of transaction costs is the cost of one person-hour of supervision.

There are diverse impacts of the road on the poor. There are arguments that the poorest households derive substantial benefits through rural road though equity impacts are less clear (Jacoby 1998; Jacoby 2000 as cited by Fan et al. 2002; Van de Walle and Cratty 2002). Dreze (1993) states that road is beneficial to effective private trade and market but it is question how it is effective for various sections of people. The road has created non-farm labor opportunities for the poor. Engagement of laborers in the construction of road is major income strategy of the poor living in the study sites so far. They have also engaged in the construction of cemented buildings as road has made easy transportation of cement and rod. Constructions of cemented buildings in the hills are in an increasing trend. Nevertheless, new road blocked traditional transport system where the poor mostly had involved. It has reduced transportation through porters, sheep and mules. In Barabis VDC, 15 households used to make their livelihood by working as porters. Previously, they used to pick up the goods of people who came from India, The Government official and shopkeepers who used to bring business goods in the area. Due to the construction of road, there is no work for porters. Simultaneously, the work of shepherder has been reduced except during the rainy season when there is no vehicle movement.

6.2.3 Road and Food Consumption

Road has tremendous impacts on the consumption of food. Consumption of market-based food has increased in the recent days. Road has supported easy movement of company made food. Therefore, the market promotes consumption of such food. Simultaneously, it has supported the consumption of fresh vegetables in growing cities. Fresh vegetables move from Dadheldhura, Silgudi and Sanfe to Dhangadi within half a day. Simultaneously, fresh fruits also move to final consumers within a short period. I observed that the consumer get fresh vegetables within a short period because of easy transportation.

6.3 Out Migration

Labor migration is a major alternative livelihood strategy of the poor to balance their household food shortage. It is an institutionalized practice in the sites because of the limited availability of other economic opportunities. Respondents said that they migrate to India because they are unable to produce sufficient food for their family for whole year as well as to earn money in their localities to purchase the needed food and non-food items. Table 6.3 shows that 71.4 percent of total households send at least one member from their house to India for seasonal work.

Table 6.3: Number of migrating members from households

Categories	Data	No	Number Migrated to India				Total
			1	2	3	4	
Upper Caste	Count	66	111	16	0	2	195
	%	33.8%	56.9%	8.2%	.0%	1.0%	100%
Janjati	Count	29	31	1	1	0	62
	%	46.8%	50.0%	1.6%	1.6%	.0%	100%
Dalits	Count	11	84	12	4	2	113
	%	9.7%	74.3%	10.6%	3.5%	1.8%	100%
Total	Count	106	226	29	5	4	370
	%	28.6%	61.1%	7.8%	1.4%	1.1%	100%

Source: Household Survey, 2012/13

The number of migration from Dalit is highest among the three categories. Data shows that 90.3 percent of total households of them send at least one member. The data between Upper Caste and Janjati are 66.4 percent and 53.2 percent respectively.

There is also variation in the number of people from one household who migrate. Most of the households send one member. However, households who send two members are also noticeable. Some households even send three or four members. About two percent of Dalit send four members. The number of migrated member depends upon the level of food insecurity and availability of working age males at home. There are also

evidences that some nuclear families entirely go there. They leave their land and other property in the care of their kin.

6.3.1 Seasonal Migration and Production Strategy

The migration has created the situation of shortage of agricultural workers. The availability of male workers for wage is limited. Males are important for agricultural works because they are culturally permitted to plough the land. They are also crucial human resources working in harsh environment conditions. Landlords face shortage of laborers during agricultural time. In Fulabri, the rich farmers use tractors to plough the land to cope with labor shortage. As labor is the very important factor of agricultural production, its limited availability reduces food production.

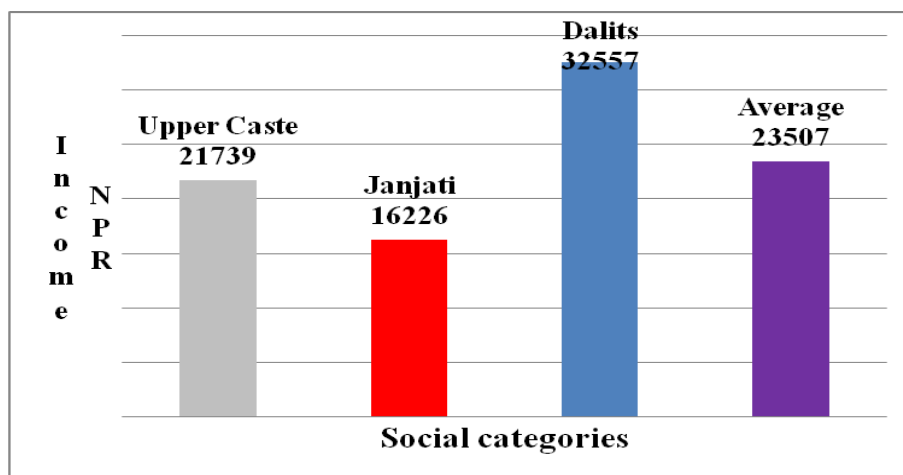
Migration has increased the area of un-cultivated agricultural land. The rich farmer's migration to Terai and Kathmandu creates the situation of absentee landowner. There are some families of *Thakuri* in Barabis and Birpath, who have permanently migrated to Nepalgunj, Dhangadi and Kathmandu leaving their land barren. Nevertheless, they do not give such land in sharecropping because they fear that the Government will seize and distribute it to the sharecropper if he/she cultivates the land for some period.

Migration has a long-term negative impact on skills and education of migrating households. Evidences show that most of the young Dalit boys go to India with their father or brothers and leave the school. School dropout rate among them is higher than that of other groups. They mostly leave the schools when they reach the secondary level. It is the time when they are ready to work in India. It is as a major constraint for the attainment of educational goals among them.

6.3.2 Remittance based Food Acquirement

Migration to India is the major income earning opportunity for the people living in the study sites. People derive the highest amount of income through this means. Table 5.6 of Chapter 5 showed that the migration contributes 35 percent of their total annual income. Figure 6.3 shows that they earn 23507 NPR (US \$ 265, exchange rate @ 94) annually in an average through remittances.

Figure 6.4: Amount of annual income households derive from migration



Source: Household Survey, 2012/13

There is variation among different caste groups in per capita income through this source. Dalits derive a huge amount from it. They earn annually 32557 NPR/ household while the Upper Caste and Janjati earn 21739 and 16226 NPR respectively. It shows that Dalits mostly depend on seasonal migration for earning.

Migration is the major coping strategy of the poor to cope with food insecurity. Table 6.2 shows that 14.4 percent of people replied that they went to India when they faced price hike in the food. When the head of a poor family feels the shortage of financial resource, he goes there for seasonal works. He does not need any important decision for going there. When a family of the migrated person needs financial support,

the wife of the migrated male member calls him and requests him to send money. Market survey shows that a household whose member has migrated has better chances of getting food in credit. The shopkeeper believes that she/he repay the credit as soon as possible. There is also higher rate of payment of loan among them. Based on the number of members migrated and their income in India, they can get credit in bulk amount.

6.3.3 Changing Patterns of Migration to India

The study observes that there is change in state and patterns of migration to India. Number of families who used to go to India but not migrating now has been increasing. Now they stay at home. Table 6.6 shows that 10 percent of total households do not practice seasonal migration now.

Table 6.6: Percentage of people not migrating India now

Categories	Data	Not migrating now		Total
		No	Yes	
Upper	Frequency	172	23	195
	%	88.2	11.8	100
Janjati	Frequency	54	8	62
	%	87.1	12.9	100
Dalits	Frequency	106	7	113
	%	93.8	6.2	100
Total	Frequency	332	38	370
	%	89.7	10.3	100

Source: Household Survey, 2012/13

They have new opportunities available in the district. After the construction of road, there are chances of labor work in the construction industry, self-employment in local market and work in transport sectors. This changing practice is different among districts and different socio-economic groups. The trend of reduction in migration is highest in Kailali, then in Bajura and then in Achham. This shows that the availability of working opportunities in the districts is in the directions of road development. Simultaneously, the reduction among different caste groups is different. A trend of reduction in migration is high among Janjati and high caste groups now. About 13 percent and 12 percent of them respectively reply that they do not go to India now.

However, the trend is very limited among Dalit. Only 6 percent of them say that they do not migrate now. This shows that new livelihood opportunities emerging in the region need to be made more Dalits-friendly. It does not attract and create the environment by which they can stay at home.

6.3.4 Male Outmigration and Women Headed Households

Migration has increased the number of female household heads. Almost all of the males migrate to India leaving only the female, children and old aged members of the family at home. At this stage, the female automatically needs to play an active role in the family. Table 6.5 shows that 43 percent of women act as household heads. Among them, 65.5 percent are Dalit women. These women are head in terms of age, mobilization of remittances and dealing with community matters. However, many of them are just pseudo-heads. Not all of them are entitled to land and home. Once the migrated male counterpart or old aged male returns home, he automatically acts as household head. However, mostly he lives at home only for three months in a year. He does not know all the dealings of the household. Then he encourages the female to lead in those matters as she used to do during his absence. The female works as a head for 9 months in general.

Table 6.5: Status of household head

Household head	Data	caste			Total
		Upper Caste	Janjati	Dalits	
Male	Frequency	129	42	39	210
	%	66.2	67.7	34.5	56.8
Female	Frequency	66	20	74	160
	%	33.8	32.3	65.5	43.2
Total	Frequency	195	62	113	370
	%	100	100	100	100

Source: Household Survey, 2012/13

6.3.4.1 Production Strategies of Women Head

In recent years, the control of food production in the house of the migrated male is increasingly under the female household head. Very few male migrated members return from India to home to take part in agricultural activities. Major factors that motivate them to stay in India are inadequate production of food, uncertainties in the monsoon and need of more income. As a result, women need to perform all the activities (plantation, preparation and harvesting) of food production. This situation has created numbers of cultural, social and economical challenges for them.

Tamang and Paudel (2013) finds from total change in migration that women's workload has increased in women headed HHs. This study also finds that their workload in food production system has increased. When the male is present, he prepares the land for seedbed and plantation, brings agricultural inputs and processes grain, and the female prepares and plants seedling, harvest crops and more importantly arranges meal for the members working in field. Now she needs to complete all these works by herself because of higher rate of male migration.

A woman faces major difficulty in the prioritization of the work she needs to complete. Culture does not permit her to plough the land, which is the most important activity of agriculture. She depends upon other male who have skills to prepare land. If she has a son or other male members in home, she anyway asks him to do it. Otherwise, she faces many difficulties. In addition to this, if she has pair of oxen, she exchanges it with laborers who have no oxen. If she has no oxen, she faces additional challenges. To cope with challenges she can hire tractors in Fulbari to plough the land. This technology facilitates to cope with the negative impacts. She needs to compromise with many things in Birpath and Barabis to hire a ploughman. She has to pay more wages to ploughman up to six hundred NPR per day. She has to change cultivation time, which is suitable to ploughman. In some case, she even has to leave the land barren without cultivation.

The use of agricultural inputs among female-headed households is limited. Household survey shows that 41 percent of total male respondents among them use improved seeds while only 20 percent female respondents replied that they use such seeds. The access of the female household head to service providers for agricultural input is very limited. She cannot prioritize the work to go to DADO, Agro-vet and other agency who distribute such seeds. However, her access to service provided by NGOs is good because they focus on such women and they have local social mobilisers. At present, the use of chemical fertilizers by households with a female head is very limited. They mostly use compost manure. They face numerous challenges regarding irrigating the land. Mostly farmers divert water for irrigation towards their land in the night or early morning. Those who go first, she/he diverts it first, and gets more land irrigated. Women heads are not able to do so because she cannot go to field at night because of security reasons, and also because they cannot leave the children at home alone. Irrigation of land in Birpath and Barabis requires many dialogue and contestations during the time of water scarcity among users. Women in these situations fall behind.

Female-headed households are not trusted for share tenancy and/or contract farming. The landlords don't believe that women can prepare land, manage laborers and other inputs. Household Survey shows that about 15 percent such women got land for share tenancy. However, these women have a young son capable to work in such land. The migrated male counterpart also returns home during the agricultural work period.

6.3.4.2 Food Availability to Women Head

In absence of the male member, the female household head approaches for food available in market, aid and public distribution. Woman's entitlement to food available in market has increased in recent days. She goes to shop, purchases food and deals with credit herself. She herself calculates how much food she needs for home, and how much money she requires for purchasing from market. In this regard, she manages remittances that her male counterpart sends. However, she faces difficulties in negotiation of price of

food and other goods. When she purchases food in cash, she bargains in price. However, she mostly purchases in credit because her male does not send money regularly. He sends the money twice or thrice a year. The woman thinks that the shopkeeper fixes higher price for her when she acquires in credit. To cope with this price variability, she fixes one or two shops from where she regularly purchases food. She manages remittances very effectively for the food. Market survey shows that she purchases more food items than non-food items. The poor woman purchases more coarse rice which is cheaper, so that she can feed her children for a longer duration. The woman does all the business transactions now. She decides to sell crops, livestock such as goat and hen, and buy household utensils. However, Dalit woman needs an authority letter from a male for large commercial transactions. Male authorizes her only for fix amount and categories of transactions. Shopkeepers do not believe her regarding the sale of buffalos and cows to purchase furniture, solar panels and gold.

Women heads are empowered to participate in food security programme. Their participation in food aid interventions is significant. They are more active in aid management groups. They lead user committee and change the institutions in favor of them. They focus on food for work programme, instead of cash for work because they benefit more from the former. In the cash for work program, they influence donors to distribute cash by which they have control. In Fulbari, Mercy Corps has a provision for women's representation to receive the cash for work because they manage kitchen. Simultaneously, the number of women working as laborers is noteworthy. The participant of women in the work is 50 percent. Though it is physical labor based work, the performance of women is similar to those of male workers. In addition to this, they also perform leadership roles in different community groups such as Community Forestry User Groups, agricultural groups, livestock groups, and irrigation groups. Now institutions like these are more women friendly.

6.3.4.3 HIV AIDS and Women

Some of the married women heads in the region suffer from HIV/AIDS disease. I met two such women who are now living in district HQ in the support of NGOs. However, it is said that there are many women who suffer from this disease but have not disclosed it. When the migrated male returns home, he comes with sexually transmitted diseases. Local people call this disease Bombay disease. These diseases are transmitted to him through unsafe sexual intercourse in India mostly in the brothels of Bombay, frequented by him to fulfill his sexual desire without any preventive measure, mostly after drinking alcohol.

Widowhood among women due to this disease is a burning challenge. Most of the males usually return to home when they reach a chronic stage of this disease. There are some widows of young aged, whose husbands died from the disease. They face many psychological, social and economic challenges of food acquirement. Such widows always live in fear of whether or not they will be able to feed their children.

6.4 Caste/Ethnicity based Exclusion

Chapter 5.3 discusses that there are different circumstances of food security among various social groups. It also shows that Dalits are more food insecure than other social groups. Some scholars argue that the caste/ethnicity based social exclusions cause vulnerability to hunger among them. Chapters 1 and 2 have discussed about the writings of these scholars. This section describes how this exclusion affects the production, exchange and consumption entitlements of Dalits and Janjati.

6.4.1 Caste/Ethnicity Determinant of Food Insecurity

People perceive that caste and ethnicity based exclusion determines the level of food insecurity among Dalits. Table 6.7 shows that about 3 percent of Upper Caste, 11 percent of Janjati and 37 percent of Dalits reply that the exclusion directly or indirectly affects the food security of the people. However, they said that Dalits and Janjati were discriminated in the past due to which they are food insecure now.

Table 6.7: Is caste determining food security?

Categories	Data	Perceptions on Caste determinant		Total
		Yes	No	
Upper Caste	Frequency	6	189	195
	%	3.1	96.9	100
Janjati	Frequency	7	55	62
	%	11.3	88.7	100
Dalits	Frequency	42	71	113
	%	37.2	62.8	100
Total	Frequency	55	315	370
	%	14.9	85.1	100

Source: Household Survey, 2012/13

However, information from focus group discussion and Key Informant Interviews with Dalits, reveal that social exclusion and discrimination is still a major factor for food insecurity and hunger among them. They say that the historical discrimination with them

regarding land distribution, division of caste-based occupation and barriers to education affected them negatively. Some discriminations regarding production, access to resources and consumption of food are still in practice in the study sites.

6.4.2 Alienation from Land Ownership

Dalits own very limited land. Chapter 5.3 shows that most of them are small cultivators, and are under the categories of landless, semi-landless or marginal cultivators. As pointed out by Nepali (2011) and Shankar (2011), the study finds historical injustice regulated through the range of social, economic and political institutions is the major cause behind their existing situation. Following are the key institutions in the study sites that exclude them to them from becoming an owner of land.

Religious Institutions: Dalits farmers, in focus group discussion, said that religious institutions excluded them to be the owners of land. Upper Caste in Birpath and Barabis also believe that these institutions are major factors for limited land among the former caste group. The old aged Dalits in the study sites also perceive that they are born to serve the Upper Caste. An analysis of literature shows that the Hindu caste based social hierarchy had not allowed them to own land, and had relegated them to the role of serving Brahmin, Chhetri and Baishya.

Political Power: Historically the involvement of Dalits in the political institutions has been very limited. After unification of Nepal, King PN Shaha adopted some institutions and set of rules such as Birta¹⁷, Jagir¹⁸, and Rakam¹⁹ to distribute land to the people who were actively involved in the process of unification. Dalits and women were

¹⁷*Birta* means an assignment of income from the land in favor of individuals in order to provide him with a livelihood. It was granted in favour of priests, teachers, religious heads, soldiers, and members of nobility and royal family (Regmi, 1999).

¹⁸ Before 1952, it was a common practice in Nepal to assign the income of *Raikar* lands as emoluments to government employees and functionaries. Such assignment was known as *Jagir* (Ibid).

¹⁹*Rakam* refers to a particular category of land grants and assignments similar to *Raikar*, *Jagir*, and *Guthi* lands on which cultivators are required to provide unpaid labor on a compulsory basis to meet government requirements.

not under these sorts of privileged benefits because their participation in the war was negligible. In Birpath, local people said that, in the past before unification of Nepal, the entire land of the VDC was under the ownership of Thapa Chhetri. The local king was from this caste. The King distributed whole land to other households who were from same caste. Majority of the population of this village also come from this social group. It is said that almost all the land was under this group. In the later period, they sold it to other caste groups.

Economic Relations: Focus group discussions and KIIs reveal that the traditional patron client relationship obligated the Dalits and Janjati to not having land ownerships. The caste-based semi-feudal production relationships such as *haliya*²⁰ of Bajura and Achham districts and *Kamaiya*²¹ of Kailali district undermined their land tenure opportunities in the past. When there was sufficient land, the Dalit did not need it because they received sufficient grains through their patrons. Even though these social practices of the past were helpful for food security among them, society was feudal restricting the ownership of land and other natural resources among them. Informants from these households believe that the relations have blocked them to own the land.

Discriminatory institutions of land registration: Dalits also perceive that the state alienated them from the ownership of land in different courses of history. In Fulbari, when there was conversion of forest into agricultural land during 1980s, they mostly converted forest into land. When there was a survey of such land, the Government could not register that land in their names because they could not get information on how to register it. On the other hand, it is a perception among them that the state personnel were from high caste people who were not positive in this regard. Though they converted forest into agricultural land, it was registered in the name of higher caste, who had an access to the Government's land registration office.

²⁰ It is ploughman and master relationships between low and high caste households. It is one kind of slavery (Coplan, 1972)

²¹ System of bonded labor where one group of indigenous people called *tharu* worked for their master to pay the debt.

It is a general perception among *tharus* that the migrated people alienated their lands in Fulbari through the process of systematic migration. They are indigenous to the area and show evidence that almost all of the agricultural land in the VDC was under their control before fifty years. The construction of east-west highway crossed through the flat land area from Attarya. Then, people from the hilly region, mainly Aryan caste groups including both high and low caste, started to migrate to the region. Some *tharu* households had sold their land to the new comers. However, most of informants from them think that the migrated people displaced them towards margin and high caste groups occupied the flat land.

Informal land tenure: The informal and insecure land tenure system still exists in all VDCs. In Birpath and Barabis, its presence is in the name of *Mathe*. The *Mathe* is a kind of long-term mortgage system in which the land of the landlord is given to a tenant for which the latter gives some money to the former. I found that most of the land of the Dalit in the villages is under this system. For example, in Barabis Dalits have such land from Thapa Chhetri while in Birpath such land is from *Thakuri*. Similarly, some of the Dalits and Janjati live in *Ailani* land. Dalits cannot invest on these types of land because of fear of tenure security as they wish by which it limits their production capacity.

6.4.3 Exclusion in Exchange Entitlement

The caste system still determines the trade and business in the study sites. The system allocates specific business opportunity to specific social group. The Upper Caste has ranges of choice in business. Dalits have limited choice to be involved in local commerce. The development of market itself excludes them (Box 6.1). Hotel business in the nearby market is emerging as a new livelihood option for the people in the area. Dalits still hesitate to open hotels because of social discrimination such as the practices of untouchability. Dalits say that they have not been able to benefit from this new emerging market.

Box 6.1: Market and exclusions

I observe that there is exclusion from starting period of market establishment. When market establishes, small hotels start. Dalits cannot involve themselves in hotel business because of their caste. Then, small shops of grain and clothes are established. The poor can't invest in these businesses. In this way, the market marginalizes the poor and excluded households.

Dalits also face exclusions in livestock-based income opportunities. The finding shows that sale of milk is a major source of income in the study sites. It is an income strategy of Upper Caste groups. About one-fourth of them sell milk products. On the other hand, only one household from Dalit community sells milk. The home is from Fulbari (Terai) where caste discrimination is flexible to some extent. In Birapth and Barabis, they do not sell milk even to the hotels.

Table 6.8: Sale of milk among different caste groups

Sale	Data	Categories			Total
		Upper Caste	Janjati	Dalits	
Yes	Frequency	46	4	1	51
	%	23.6	6.4	0.88	13.8
No	Frequency	149	58	112	319
	%	76.4	93.5	99.1	86.2
Total	Frequency	195	62	113	370
	%	100	100	100	100

Source: Household Survey, 2012/13

As a result, almost none of the Dalits rear buffalo and cow for the purpose of milk production. Very few of them keep these for the purpose of oxen. However, they face difficulties because it requires higher purchasing and managing costs. They mostly rear pig and hen for the purpose meat. These livestock do not require much investment for pasture and shed.

However, the study finds some mobility in the occupation. Due to the construction of road for example from, Dhangadi to Holiya, the rich high caste people got opportunities to engage in business, but the poor *Tharu* and Dalits in Terai only got a chance to pull *Riksa*. The later groups also got jobs in non-agricultural sectors such as road construction. Hill high caste women are now engaging in business in hotel management, selling milk and jobs in NGOs and GOs. *Tharu* women in Fulbari are also engaged in small business. However, the labor position of Dalit women somewhat remains stable working as agricultural laborers.

Dalits were also discriminated to get appropriate education in the past. Key Informant Interviews with their old aged people reveal that their ancestors were not allowed to study. Before 1972, there were private *sanskrit* schools. In the study sites, the schools had run in the homes of priests where the high caste prohibited the Dalits from being involved in the schools. After the nationalization of private school through Education Act in 1972, they started to study. Some of them went to India to study. However, the education status of Dalits is still low (Table- 6.9). Data shows that none of them in the sample households has passed SLC.

Table 6.9: Level of education within different social groups

District	Dalits			Upper			Janjati		
	Illiterate	Literate	SLC	Illiterate	Literate	SLC	Illiterate	Literate	SLC
Fulbari	12.3	72.3	15.3	5.2	24.7	70	9.5	71	20
Birpath	13.2	72.4	14.3	6.5	23	70.5	0	0	0
Barabis	12.7	74.2	13.0	6.2	22.7	71	0	0	0
Total	38.3	218.9	42.7	18	70.5	211.5	9	71	20
Average	12.8	72.9	14.2	6	23.5	70.5	9.5	70.5	20.0

Source: Household Survey, 2012/13

In addition to this, the performance level of Dalits children is still poor in the schools. Dalits say that the children do not get conducive environment at their home (poor economic conditions and uneducated family) and discrimination at school level. The dropout ratio amongst their children is high. However, to address this issue of dropout, no concrete plan has been set up.

6.4.4 Nutritional Deprivations

There is a cultural practice that the Dalits do not consume milk and its products. Household survey shows that about 99 percent of total household did not consume milk and its products in a week in the period of survey. There is a practice among high caste people that they do not give these products to low caste people. It is culturally prohibited. The practice is very rigid in Birpath and Barabis VDCs. It is somehow

flexible in Fulbari among the households who migrated to the VDC from eastern Nepal. Within the VDC, it is rigid among the households who migrated from hilly region of far western.

As I have already discussed, access to drinking water determines the capability of people to utilize food. The institution of the untouchability that exists in the Barabis and Birpath limit the access of Dalits to the facilities of drinking water. The evidences find that there are two kinds of water sources based on caste system. One is the joint source of different caste groups as in Fulbari, and the other is a separate system for different caste groups in Birpath and Barabis. The low caste groups in Fulbari reveal that they can derive water only after the Upper Castes have taken their share. In times of drought, they are unable to derive required amount because all available water is taken by higher caste groups, as their household population is higher. By the time, Dalits get their chance, there would be no water in the water source. In Barabis and Birapth villages, the water sources of the Dalits are located in dirty areas where the livestock of higher caste groups use the water. There is an increasing contamination of these sources due to increasing temperature and prevalence of insects and pests, and it has increased health problems of them.

Access of Dalit to health services is limited. In the case of Barabise, some Dalit women said that the health staffs do not treat all equally while delivering the services. This is because of several factors. First, health service providers, normally from non-Dalit communities, are not sensitive towards them. Second, Dalits themselves, because of low level of education, are not aware of existing health facilities available to them. Third, sometimes, it is difficult for them to come to district headquarters to get the services from them.

6.5 Ten Years of Maoist Conflict

In the Literature Review chapter, I have discussed that entitlement theory does not say anything how people secure food during conflict. There are many evidences that the conflict affects food security objectives of the people. Therefore, I have looked at the relationships between conflict and food entitlement of the people in resource scarce areas. In this regard, I have brought the case of ten years of Maoist conflict because the period was critical in Nepal. In this section, I briefly discuss how the Maoist conflict affected the production, exchange and consumption entitlement of the people living in the study sites. In addition to this, I analyze its impacts at present.

The study finds reciprocal relationship between ten years of Maoist war (1996 - 2006 AD) and food insecurity. On the one hand, many young males and females from the marginalized community, poor Dalits in Birpath and Barabis and *Tharu* in Fulbari had joined Maoist Army during the conflict. As discussed by Braun (2009) food insecurity and hunger was a major reason behind the situation. Maoist groups ensured that they would support the family who join their Army. On the other hand, the study finds mix impacts of conflicts on food entitlement of the people. The writing of Seddon and Hussein (2002); Shakya (2009); Lecoutere, et al. (2009) and D'Souza and Jolliffe (2012) show that it had negative consequences on rural livelihoods and food security. Upreti and Müller-Böker (2010) suggest that the armed conflict disrupted the existing means of livelihoods, while enabling new opportunities. This study finds that the conflict had immediate negative impacts on food production. However, it has positive impacts in the change in the production relations, which have long-term encouraging results on food production capability of the marginal groups. At present, it has negative impacts on the temporary exchange entitlement through limiting the availability of food. Nevertheless, it has some helpful consequences on the purchasing power of the marginalized communities. More importantly, it has contributed to change the discriminatory practices associated with consumption patterns.

6.5.1 Conflict and Production Relations

Because of migration, there still are barren agricultural lands. IDMC (2012) report shows that the decade-long insurgency displaced approximately 200,000 people from all over the country. There are also evidence that some local elites from *Thakuri* family had fled to Terai from hills and some to Kathmandu Valley leaving land unused. Most of them have not returned so far. Maoist rebels had targeted the local proprietors in all the three study sites because of the issues of injustice in the distribution of land in the far-western region. They gave pressure to the land-owners to redistribute the land to the landless or pay a huge amount of tax to the Maoists. Some of them who agreed to give some donation continued to live in the village. But those who had a negative image in the village were targeted by demanding unaffordable donations. Therefore, they had to migrate leaving their land.

Conflict has also increased the number of absentee ownership of land. To cope with many risks, even non-targeted farmers left the villages. The people who had job outside and land in Terai left the hills and mountain leaving behind their land without use. Paudel et al. (2012) finds that 33.2 percent of total cultivable land is barren which has been a cause of deficit of food self-sufficiency. This study also finds some absentee land ownership in hilly and mountain region.

In addition to this, this study finds shortage of laborers in agricultural works as a result of conflict. During the period, there was the situation that every youth either had to join the Maoist revolutionary group or work as detective for Government Army. Both of them used to torture the youth who had lived in the village. Youth who could not join Maoist and Government Army left the village. There was mass out migration during the time. Still many of them have not returned to the home. These situations caused the reduction of youth agricultural laborers in the sites.

Simultaneously, it hindered the availability of agricultural inputs in the rural areas. Maoist organized frequent blockades obstructed the movement of agricultural inputs from Terai to Hills. On the other hand, Government army had prohibited the traders from moving iron socket towards rural areas. These sockets were needed for the maintenance and construction of irrigation channels. There was a fear within the army that the insurgents will use the sockets as bombs. Farmers responded that they could not maintain their irrigation channels during the time of conflicts.

At the same time, the conflict had negative impacts on the collection of forest-based food. After the then King Gyanendra takeover of political power in 2002 AD, Government army had declared prohibition for villager to enter to some forest patches in all districts. There was not declaration of prohibition in the forest in the study sites. However, the people in Birpath and Barabis said that they could not enter and collect forest products due to the fear of army. The people could not utilize the forest-based foods and income-generating products such as NTFPs during that time. Local farmers who produced bamboo crafts could not extract bamboo for this purpose. As a result, income of the forest dependent people reduced during the time.

However, the marginalized people perceive that the conflict has also produced some positive impacts on the production entitlement among them. Landless households had intensified the land movement during the time. They formed local level networks of landless households in all VDCs and campaigned for land reform. Maoists also made them aware about injustice in the distribution of land. Due to Maoist pressure, some property owners also sold their land in a minimum price to the poor.

Similarly, it significantly supported to end the traditional exploitative production relationships such as *Haliya/Bista* system in the hills and *Kamaiya/Kamlahari* system in Fulbari. Sharma and Donini (2012) discuss that the Maoist discourse on injustice weakened such types of semi-feudal labor arrangements and other caste-based discriminations. In Birpath, Maoists conducted campaign among the Dalits households

that they should not work as *Haliya*. They also warned the patrons not to use them in that relation. They also punished some of them who worked in spite of awareness. In addition to this, they were against *Balighare* relations. They conducted campaigns that the patron must pay in cash instead of grain. Now, the relations of *Haliya/Kamaiya* no more exist in the study sites. Most of Dalits have already left the relations of *Balighare*.

6.5.2 Conflict and Food Transfer

Maoists organized frequent blockades, strikes and other disturbances that had tremendous negative impacts on the movement of food from Terai to hills and mountain. These interventions obstructed people's access to market and other economic activities. Local people remember that it was a major reason for price hike during the period. Maoists had fixed the specific percentage of tax with bus, mule/sheep/porter that transported food. In Fulbari VDC, local leader of Maoist had fixed 30 percent tax on the food that the shopkeepers brought from India. They established loose checkpoint in the border area to assess the amount of food the traders brought. The shopkeeper added the tax to the price of food and other products.

Government army had also restricted the movement of food from market to village area. The army regulated this control at various times and at various locations. The army permitted fixed amount that they could move to the rural areas. They needed written permission for transportation. In Barabis, army had banned the trade of food. There was fear among the army that the insurgent will use the food moved to the rural area. Because of the restraint, local traders, in Barabis and Birapth, said that the amount of food traded in that time was very limited.

The study does not find any evidences that the insurgents captured food of aid. However, there was fear among the development workers that they could plunder it. Keeping it in mind, WFP food aid programme had changed its strategies from Food for Work to Cash for Work. Cash had limited chance of raiding because it becomes property

of rural people once the programme pay to them. However, the Maoist had extorted food from villagers. In Barabis, each household gave food as tax to them. Rural people also provided food to the Maoist when there was mass gathering of their cadres in the concerning villages.

Maoists had destructed physical infrastructures used for movement of food such as bridges and government offices. NPC (2007) report claimed that the conflict has destructed infrastructure of worth equivalent to NPR 5000 million (about 71 million US dollar). In the study area, Maoist had burned the office of Nepal Food Corporation in Sanfebagar in 2002. This has negative impacts on the availability of cheap food to the concerning VDCs.

However, there are some positive impacts of conflict on exchange entitlement of the poor. Maoist raised the issues of unequal wage between men and women. Development organizations working in local area also talked about the issue. Since then there is equal wage system between men and women for non-specialized work. Similarly, they raised the issues of minimum wage for farm and non-farm laborers. This supported to increase the wage of laborers. Recent wage of laborers is supportive for increasing their food purchasing power. In addition to this, they had transferred food from rich to the poor people through illegal mechanism. In Fulabri, there was evidence that they had looted food from the rich people in another district; they brought it in the village and distributed it to the poor people where they used to take shelter. Some households regularly received such food by which they could survive for 2-3 months in a year.

The Non-Governmental organizations have launched significantly income generation activities and other empowerment programme that address the causes and effects of conflicts in the sites. Upreti et al. (2012) argue that they designed a number of social protection initiatives in Nepal, to some degree at least, as responses to the impacts of the conflict. Local people agree that conflict compelled the development organizations to work in these places. These organizations are now providing food aid, cash for work

programme and improved agricultural inputs. They are also conducting income generation activities that increase the access of the poor people to food. In addition to this, they create awareness about food-based discriminations.

6.5.3 Conflict and Nutritional Achievement

The study does not find any significant negative impacts of conflicts on consumption aspect of food security. However, it has some influences on food utilization part. It exerted adverse effects on the construction of drinking water related programmes planned by government and non-government organizations. As I have already discussed, the Government army had banned the movement of iron sockets and water tanks, it hindered some drinking water projects in the study sites.

Nevertheless, Maoist empowered women's group to eliminate food based discriminatory practices with them. The groups organized campaigns to allow women to consume milk and meat products during menstruation, pregnancy and lactating time when they need nutritious foods. They also initiated empowerment activities for equal distribution of nutritious foods (meat, vegetable etc) during scarce time. They talked against the practice of eating leftovers and eating last. They actively organized campaigns to control alcohol consumption by their male counterparts.

Similarly, Maoist also raised the issues of discrimination of Dalits. There was cultural practice among high caste people that they should not give milk products to the low caste people. Maoist raised the issues and said that it is an inhuman behavior. Some respondents said that the Maoist forcefully changed the practice. Now most of the high caste people give milk to them. There is no discrimination in restaurants to have milk tea.

Concluding Remarks

Construction of road and establishment of market has provided the opportunities of commercialization of farming, reduction and stabilization of food prices, regional integration of business, business opportunities for rich and labor for poor, and consumption of readymade food. In addition to this, these infrastructures have also been breaking traditional social structure such as relations of patron and clients. Seasonal migration to India is still an important livelihood strategy among the poor. It has created shortage of agricultural workers as well as exerted negative impact on skills and education of children. It is the major source of income essential for purchasing food and paying loan. In recent years, the practice of going to India is reducing among high caste households. The male out-migration has increased the number of households with women head. The participation of these women in market and development work has increased. However, it has increased their workload and some of them are suffering from HIV/AIDS.

Dalits are suffering from social exclusions, which make them vulnerable to food insecurity. They were alienated from land ownership through religious, economic and political institutions. Both Janjati and Dalits suffered from discriminatory land registration process as well as informal land tenure institutions. They faced exclusions in exchange entitlement because caste system determines the earning opportunities. Cultural practices still create obstacles for them not to consume milk and its products. In addition to this, they are still discriminated from the facilities of drinking water and health services. Ten years of Maoist conflict has both positive and negative impacts on the livelihood and food security of them. On the negative side, it has increased barren agricultural land (absentee tenure), resulted in shortage of laborers in agriculture, reduced the availability of agricultural inputs, obstructed food movement and made price hike, destructed NFC depots. Very few infrastructures of drinking water and health were constructed during that time. On the positive side, it supported to end exploitative relationships, discrimination of women/Dalits as well as unequal wage between men and women.

CHAPTER SEVEN

POLICIES AND INSTITUTIONS

This chapter portrays the picture of Government policies and their implementation mechanisms related to food security. It discusses their strengths and limitations with respect to protection and promotion of food entitlements of marginalized groups. In addition to this, it describes about local formal and informal institutions, which influence the use and impacts of the policy interventions.

I have framed this chapter using entitlement perspective. In the first section, I have reviewed the most important policies that the Government has made in the past. In this part, I have examined the achievement of periodic plans, agricultural perspective plan, and agriculture policy. In the next section, I discuss about ranges of specific policies that have direct connections with production, exchange and consumption entitlements of the people. In this part, I have analyzed the contribution and impacts of these policies on food entitlements of the marginal communities.

7.1 Review of Policies Relevant to Food Security

This section reviews the past policies relevant to food security and its impacts in the study sites. It examines the provisions included in the policies, analyzes whether they were met or not, and what were the reasons behind these situations.

7.1.1 Policies dealing with food production

Agricultural policies of Nepal have been giving high priority to achieve the agricultural growth and food security objective of the people. Following are the major policies that the Government of Nepal has prepared which deal with food security issues of Nepal.

- The Government has been continuously focusing on improvement in food production from its first five-year plan (1956/57-1960/61). Planned development process of Nepal was initiated by making this plan. It has completed ten periodic five-year plans and three three-year plans until 2013/14. In these regards, the first objective of the first periodic plan was to improve agricultural production and create employment opportunities. Since second three year plan (1961/62 -1963/64) to eight five year plan (1991/92 -1996/97), the focus has been on the provision of irrigation facilities to improve the production. Until eight plans, there was no separate plan that could integrate all agricultural inputs simultaneously for development of agricultural sector in Nepal.
- Government of Nepal in 1995, during ninth five-year plan, prepared Agricultural Perspective Plan (APP) with the support of Asian Development Bank (ADB). The Plan was a milestone for agricultural development and food security. This was a 20-year Master Plan. The plan had aims to increase food production and reduce poverty of marginal farmers (NPC, 1995). It had a target to increase per-capita food production in hills and mountain from 219 Kilograms to 362 Kilogram by 2014/15. Its strategy was to accelerate growth through technology-based green revolution (APPROSC and John Mellor Associates, 1995). In this regard, it had four priority areas, i.e. irrigation, road, technology and fertilizers. However, the plan faced many issues since its formulation. Many evaluators blame that the plan did not address the issues of gender and social inclusion (ANZDEC, 2002). They complain that the plan was not suitable for resource poor farmers (Cameron, 1998). They also argue that the plan was supply-driven; mostly focusing on availability aspect of food security

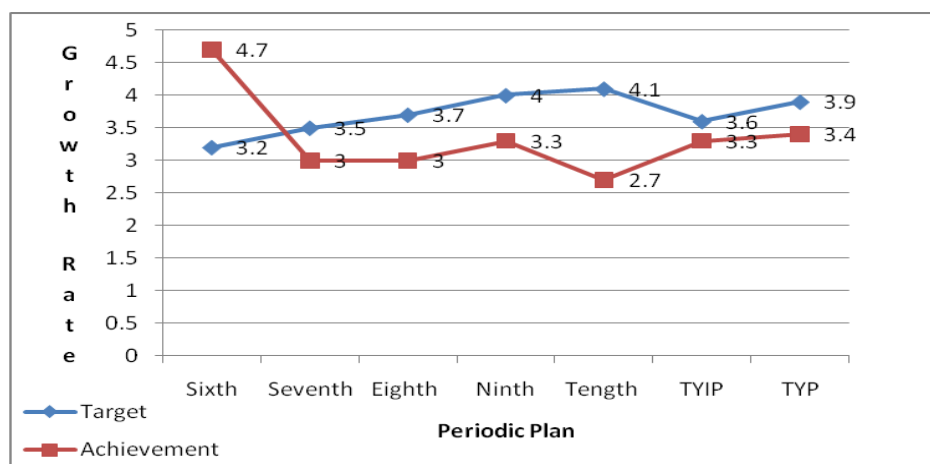
(ADB, 2009). The Government has reviewed the plan at different stages. It has carried out reviews in 2001-2005 during the Agricultural Sector Performance Review (ASPR) and in 2006 for APP Implementation Status Report (APP-ISR). This review also shows that the performance of this plan has not satisfactory.

- Then, Government of Nepal prepared National Agricultural Policy in 2004 to accommodate the wider issues regarding agricultural growth. Paudel and Adhikari (2010) say that the Government brought this policy since APP was not implemented effectively. The policy holds long-term vision of developing sustainable agriculture for food security and poverty reduction. It includes specific objectives to increase agricultural production and productivity and to make agriculture competitive with regional and world markets by developing commercial agricultural system. The policy also deals with the land resource endowment of the people. However, investment in agricultural sector and efforts to attract private sector investment by building adequate physical infrastructure for agricultural commercialization has been inadequate as guided by the policy (NPC, 2010). Most of the strategies related with the food security are prepared on the basis of this policy. However, this policy is a broader framework dealing with agricultural growth. It does not deal with the broader dimensions of food security.
- Recently Government of Nepal has prepared Agriculture Development Strategy implemented since 2015. This strategy focuses on livelihoods, food and nutrition security. It has just been formulated and has been in the process of implementation.

However, there are many evidences that the objectives and targets of the plans have not been achieved so far. The trends of agricultural growth show that the targets have not been achieved as planned. Figure 7.1 indicates that the plans against achievements of agricultural growth rate fixed by Government of Nepal since sixth five-year plan (1978/79-1982/83). The data on agricultural growth rate are available since that plan. The figure indicates that there has been low and almost stagnant agricultural productivity. In

sixth five-year plan, the growth rate of agriculture was 4.7 percent while the plan was 3.2 percent. This was only periodic plan when the Government achieved targets. After that, the progress in all periodic plans has been below the target.

Figure 7.1: Trends of target achievement in agricultural growth rate (%)

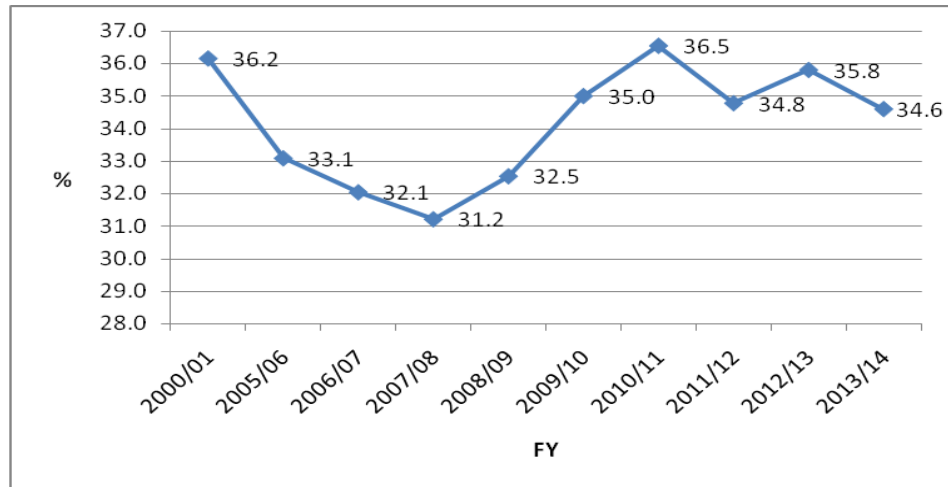


Source: NPC Periodic plans

People in the study sites also experience that the trend of food production has been decreasing in the recent days. Group discussions with the farmers and Key Informant Interviews confirm that per-capita production of food in the site is very limited. The information from district profile shows that the productivity (yield/hectare growth) of paddy and maize in the region is only 0.97 ton /hectare while national average is 1.07 tons (FAO/WFP, 2007).

Similarly, there have been ups and downs in the contribution of agricultural sector in the GDP of the country. Figure 7.2 demonstrates the annual contribution of these sectors since 2000/01 to date. It shows that there has not been stable percent of input. In the year 2000/01, its contribution was 36.2 percent. It reduced to 31.2 percent in 2007/08. Then there was an increase up to FY 2010//11. In this year, the contribution was 36.5 percent. After that, it started to decline up to recent years. In FY 2013/14, its contribution was 34.6 percent.

Figure 7.2: Trends of contribution of agricultural in GDP (%)



Source: MOAC, 2014

7.1.2 Policies dealing with access and affordability

It was first time the Three-Year Interim Plan (2007/08 – 2009/10) had outlined the food security policy in separate chapter. This plan had outline different dimensions of food security covering social, economic and geographical issues of Nepal. The next Three Year Plans (2010/11-2013/14) gave priority to the market to increase the access of the people to food. They had a provision for cheap market.

However, the Government policies of Nepal have been focusing on poverty reduction objective since it Seventh Five Year Plan (1985/86-1990/91). The policies give major priority to the food security objective of the people. These policies adopt food purchasing power of the people as one of the major indicators to measure poverty. Poverty in the country has been reducing. However, the rate of reduction among different caste groups is diverse. Table 7.1 shows that it has been reducing slightly among Dalits. It shows that food-purchasing power among them has not been increasing as expected by the policies of Nepal.

Table 7.1: Trends of poverty reduction among different caste groups
(Poverty headcount rate)

Categories	1995/96	2003/04	Change in %	2010/11
Upper caste	34.1	18.4	-46	10.3
Terai-middle caste	28.7	21.3	-26	28.7
Dalit	57.8	45.5	-21	43.6
Newar	19.3	14	-28	10.3
Hills Janjatis	48.7	44	-10	28.3
Tharu (Tarai Janjatis)	53.4	35.4	-34	25.9
Muslim	43.7	41.3	-6	20.2
Others	46.1	31.3	-32	12.3
	41.8	30.8	-26	25.2

Source: CBS (2005) and CBS (2011)

There are many reasons behind the situation. From the perspective of marginal groups living in the study sites following are some of the important causes.

Most of the interventions included in the above mentioned plans and policies have limited suitability for marginal and landless cultivators. These interventions were land based and had no impacts on marginal communities because of highly skewed land distribution in the study sites. Cameron (1998) argued that the efforts of APP lack systematic efforts to ensure the livelihood opportunities for the resource poor farmers. Key informant interviews reveal that the interventions of fertilizers, irrigation, road and technologies are nothing for them.

These policies have negligible strategies that address the issues of gender and social inclusion. Almost no policies accommodate the issues of livelihood inequalities among the people living in the rural areas. As gender and caste-based disparities are rampant in the research sites, the policies had not accommodated diverse needs of different category of people. They have not focused on asset building of the marginalized communities. They have not addressed the issues of land and institutional reform. Without these reforms, it is not possible to make the diverse caste, gender and ethnicity and economic groups food secure people.

The policies were not relevant to improve holistic food entitlement of the marginal communities. The Government has been giving priority toward poverty reduction since seventh five-year plan. Nevertheless, these policies have not been based on human capability of marginal communities. Most of the policies regarding food security have been giving emphasis on food availability issues solely in terms of its production and lower food prices. These policies do not address social dimensions of entitlement failure particularly prevalent among Dalits and women in the study sites.

The role of service centre needs to be made more effective. The recent policies have envisaged the role of service centre and extension agents to transfer technology up to the farmers. Nevertheless, it is very difficult for farmers to get the service of extension agent. Farmers in Fulbari during focus group discussion said that the extension agents from agricultural service centre occasionally visit the farmer's site. But they mostly visit the sites of rich land owning households. On the other hand, farmers in Birpath and Barabis stated they do not notice that any official from agriculture office visited their farm.

There has been a lack of coordination among major stakeholders specified in the policies. For example agricultural policy 2004 and Three-Year Interim Plan (2007/08 – 2009/10) sought strategic coordination among forestry, livestock, local development and other agencies. In all districts of the research sites, there are coordination committee under District Development Committee. Nevertheless, I found negligible joint activities among them. Sometime it creates conflict among the agencies because of unclear roles among them. For example, Department of agriculture had constructed road up to producer pocket in Kailali. However, later the Department considered that it was the role of the ministry of local development.

There are limited linkages among objective, strategies and programmes of these policies. These plans include the issues of income, food self-sufficiency, and change in food habits of the vulnerable groups. Conversely, there are very few clear-cut activities

that address these issues. In addition to this, there is a discontinuity of plan and strategies relevant to the marginal communities. For example, Three-Year Interim Plan (2007/08 – 2009/10) has included the social dimension of food distribution. It recognizes the caste and gender based discrimination in food insecurity. Yet, there were hardly any strategies that could reduce or eliminate such discriminations. Subsequent plans have eliminated these provisions.

7.2 Effectiveness of Contemporary Policies

In this section, I have discussed about the policies related to food production, access to food and consumption. The policies related to food production are ownership of land, fertilizers, irrigation, seeds and forest. The policies related to exchange entitlement are price stabilization and income. The policies related to food consumption include food safety, health and drinking water.

Table 7.1 outlines the pertinent policies dealing with food entitlement in the study sites. Policies related to food production are Land Reform Act 1964, Seed Policy 2000, Fertilizer Policy 2002, Irrigation Policy 2003 and Forest Act 1993. Similarly, the policies that support exchange entitlement are Trade Policy 2009, Agri-Business Promotion Policy 2007, Labor Employment Policy 2004, and Public Service Commission Act 2008. At present, the policies that are relevant to food consumption and utilization are Food Safety Policy 1994, Consumer Protection Act and Regulation-1996, Nutrient Policy 2003, Health Policy-1991, and Water Resource Act 1993.

Table 7.2: Key policies related to food entitlement

Production Policies	Land Reform Act 1964 (2021 BS) Seed Policy 2000 (2056BS) Fertilizer Policy, 2002 (2060) Irrigation Policy 2003 (2060) Forestry Act-1993 (2049) and Community Forestry Guideline 2007 (2065 BS)
Distribution Policies	Trade Policy 2009 (2067) Agri-business Promotion Policy 2006 (2064) Labor Employment Policy 2004 (2062) Public Service Commission Act 2008(2066)
Consumption and Utilization Policies	Food Safety Policy 1994 (2052) Consumer Protection Act and Regulation-2054/56 (1996) Nutrition Policy 2003 (2061) Health Policy 1991 (2046) Water Resource Act 1993 (2048)

Source: Desk review, 2012

There are many structures and their institutions to implement these policies. Major structures involved in the implementation of production-based policies in the study districts are District Agricultural Development Office (DADO), District Forest Office (DFO), District Irrigation Office (DIO), and District Land Reform Office (DLRO). EU/FFP, WFP/SAPPROS, HELVETAS and Agro-vets support these Government institutions. Similarly, major structures involved in the implementation of policies related to access to food are District Administration Office (DAO) and District/Village Development Committee (D/VDC). Transport agencies, market, WFP/Mercy Corps, FIAN, Food sovereignty network and Food security networks support in this area. Similarly, major structures involved in the food consumption and utilization policies are District Health Office (DHO), District Livestock Development Office (DLSO) and Department of Food Technology and Quality Control (DFTQC). Consumers' Associations and UNICFP support these institutions.

7.2.1 Policies Dealing with Food Production

7.2.1.1 Ownership of Land

Redistribution of land has not occurred in Birpath and Barabis to date. Caplan (1972); Nepali (2010); Acharya and Bhandari (2011) argue that restructuring of land is a crucial policy for agricultural transformation. Still seven percent of total households are landless and 20 percent are semi-landless in the study sites. Table 7.2 reveals that 15 percent of Dalits and 11 percent of Janjati are landless. Land Reform Act of 1964 and its fourth amendment in 2001 are the major policies that address the issues of land ceiling and redistribution in Nepal. Fourth five-year plan (1971-1975) of Government of Nepal has introduced the issue of land reform. For the implementation of these policies, the Government has formed different commissions. In this regard, Badal Commission formed in 1994 was as an important milestone policy document. The then Deuba Government introduced the concept of land bank in 2003. Local people say that there has not been a land survey since the last thirty years.

Table 7.3: Landlessness among different categories in the study villages

Categories		Possession of land		Total
		Yes	No	
Upper Caste	Count	192	3	195
	%	98.5%	1.5%	100%
Janjati	Count	55	7	62
	%	88.7%	11.3%	100%
Dalits	Count	96	17	113
	%	85.0%	15.0%	100%
Total	Count	343	27	370
	%	92.7%	7.3%	100%

Source: Household Survey, 2012/13

However, there has been redistribution of land in Fulbari. Table 7.3 shows that 76.2 percent respondents reply that they got land from the Government. In 1981, the

Government launched Resettlement Programme. The Fifth five-year plan (1975-1980) had introduced that provision. During that time, many households from Hills and Mountain region across the country were encouraged to settle in the VDC. The Government provided two *Bigha* and five *Katha* land to each 92 households. Then, the Badal commission formed in 1994 also distributed ten *Kattha* land to some remaining households. Farmers who benefitted from the land reform are self-sufficient on the food.

Table 7.4: Percent of households receiving land in study villages

VDC	Data	Households receiving land		Total
		Yes	No	
Fulbari	Count	96	30	126
	%	76.2	23.8	100
Birpath	Count	0	122	122
	%	0	100	100
Barabis	Count	0	122	122
	%	0	100	100
Total	Count	96	274	370
	%	25.9	74.1	100

Source: Household Survey, 2012/13

In this regard, there are some issues of exclusion during land distribution. Indigenous *Tharu* people raised the concern that the people who migrated from hilly region across the country got land in the first lot. They were not in the list of land receiver. Dalits experienced caste based exclusion. They remember that sixteen families of *Gandarvas*, a Dalit caste group, were unable to get land because of their caste. The *Tharu* and Dalit community say that the land that they got is located in marginal area affected through the flood. They describe that flood already destroyed 30 percent of their land.

7.2.1.2 Seed Policies

Use of quality seeds is very limited in the study sites. Agricultural and Food Security Country Investment Plan (2010) of the Government has prioritized quality seed as an important element for food production. Tenth Five Year Plan (2002-2007) focused

on the massive campaign for the use of quality inputs to increase agricultural productivity among marginal farmers. Three Year Plan (2010/11 - 2012/13) has given priority on the supply of seeds in simplified way in the rural areas. However, most of the farmers in all VDCs still use the old degenerated and infested seeds of poor quality. They cannot get better seeds as they have demand. There are little skills to produce qualitative seeds in the sites.

Informal source still dominates the distribution of seeds. MOAC (2012) record shows that contribution of the formal sector in the sharing of seeds is less than 10 percent of the total requirement. Table 7.4 shows that 11.9 percent of total farmers use subsidized seeds through service providers; otherwise, they use their own seeds and seeds from other sources. Seed Act 1988 (2045 BS) has a provision of compulsory truthful labeling (TL). However, the informal source does not assure the quality of seeds. They sell these seeds without any kind of quality assurance system. Farmers complain that such types of seeds have lower germination percentage. There is a fear among the farmers that informal sector could sell old stock (seeds bought in previous years but not sold). Seeds distributed through agro-vet needs to fulfill certain requirement such as labeling. There are many evidences that they sold open seeds without labeling and coverage.

Table 7.5: Source of seeds in the study sites

VDC	Data	Seed types			Total
		Own	Subsidies	Other	
Fulbari	Count	66	26	34	126
	%	52.4	20.6	26.9	100
Birpath	Count	89	8	25	122
	%	72.9	6.6	20.5	100
Barabis	Count	85	10	27	122
	%	69.7	8.2	22.1	100
Total	Count	240	44	86	370
	%	64.9	11.9	23.2	100

Source: Household Survey, 2012/13

The supply of improved seeds is very limited. Seed Act of 1988 and Seed Regulations 1997 signifies that contribution of the use of improved seeds in agricultural production is immense. MOAC (2012) record shows that the share of the National Seed Company (NSC) to the total cereal seeds supply is less than 2 percent. Table 7.5 shows that only 35.4 percent farmers use improved seeds. In Fulbari, the rich farmers use improved varieties of rice such as Radha 400, Haldiya 1, Mithila, Sarju 52, Chadani and Mahima. In Barabis and Birpath, they use Kamala 4, Radha-4, Krishnavog etc. However, most of the poor farmers use traditional seeds in the later two VDCs. Farmers also experience that the agencies do not distribute improved seeds in time. In Fulbari, DADO distributed hybrid rice named Radha 21 in the mid of July while farmers need it in mid June. It was the cause of low production in 2010 in the VDC.

Table 7.6: Farmers using improved seeds

VDC		Use of improved seeds		Total
		Yes	No	
Fulbari	Count	71	55	126
	%	56.3	43.7	100
Birpath	Count	23	99	122
	%	18.8	81.2	100
Barabis	Count	37	85	122
	%	30.3	69.7	100
Total	Count	131	239	370
	%	35.4	64.6	100

Source: Household Survey, 2012/13

There is limited functional coordination among seed distributing agencies. Seed Vision 2025 (2013-2015) has focused on a strategy of community-public-private partnerships in the promotion of improved seeds. It has also concentrated a seed system development based on value chain model. There is a seed management committee under DADO in the districts. DADO, NGOs and Agro-vets are major institutions that distribute seeds in the sites. DADO distributes seeds through its local service centers to target beneficiaries. In some cases, it also distributes through NGOs and cooperatives. NGOs

distribute vegetable seeds. NGOs in Fulbari also provide seeds of potato, rice, wheat and Rajma (kidney bean) to flood affected households. Agro-vets sell varieties of seeds to the farmers. During discussion with them, I found that there is less belief among them. The contribution of community and private sectors in the production of quality seeds has not been seen as planned.

The seed replacement rate is very low in Birpath and Barabis while it is satisfactory among the rich farmers in Fulbari. The National Seed Policy (NSP) 2000 emphasizes on varietal development, seed multiplication and quality control. There is need of a seed replacement rate of 25 percent for desirable impacts, which implies that farmers require to replace improved seeds every four years before seeds degenerate beyond value (Basnyat, 2010). Farmers in Birpath and Barabis said that they are using same seeds from last 15 years. The awareness about the importance of seed replacement is very low among them. On the other hand, they do not get appropriate seeds to replace old one.

This study finds that the access of the poor and marginalized farmers is very limited in the subsidized seeds. Agriculture policy 2004, Tenth Five Year Periodic Plan (2002-2007) and Three Year Plan (2010/11 - 2012/13) has given emphasis on the supply of seeds in a simplified way in the rural areas. The policy divides farmers into two groups – small and big ones and aims to provide more resources to the small farmers. However, supply of subsidized seeds does not benefit most of the semi-landless and marginal cultivators because the Agriculture Policy defines resource poor farmers as those owning less than 4 hectares of land. The Government has been implementing Mission Programme in Bajura and Birpath. It provides transport subsidies up to service centre and sells seeds in 25 percent, 50 percent and 70 percent reduced price. There is very little information about the provisions among the Dalits and marginal cultivators. On the other hand, these seeds are suitable to those farmers who have purchasing power. In addition to this, DADO distributes these seeds through first come basis; resulting in unavailability to the late comers who are mostly poor.

Poor farmers perceive that the seed distribution through DADO is biased favoring the land-lord. Seeds Act 2045 (1988) says that the convenience and economic interest of the public should be given priority when distributing seeds. Similarly, Agro-business Promotion Policy 2064 (2006) emphasizes the effective role of service centers for quality agricultural inputs and services. However, there is a complicated process to get the seeds. There is provision of application. Government agency distributes these seed packets in an equal amount to those farmers who submit a letter of request to the respective DADO or Agriculture Service Centers. Citizenship certificate is one of the criteria set by them. The offices do not consider the size of the land and poverty level of applicants. It means if a household sends 5 members to apply for seeds, each one of the family members would receive seeds without verification of family names, their relations and their level of well-being. The Agriculture Development Strategy (ADS) prepared recently has provision of "Voucher System" to increase the access of the poor farmers to improved seeds. This provision might be an opportunity to strengthen seed supply targeting the poor farmers in future.

The participation of Dalits and marginal cultivators in community seed programme is very limited. DADO provides source seeds of maize to the farmers who produce seeds in mass scale and sell at the local level. However, the land of the Dalits is not suitable for this seed production. Not only Government seeds, but also the seeds distributed through non-governmental organization have no adequate targeting approach. For example, European Union Food Facility Program through FYFA Nepal in Fulbari supported improved varieties of rice such as *Haldinath* and *Boronath* and varieties of wheat such as *Bhrikuti* and *Gautam*. It granted 10 Kg of paddy and 12 Kg of wheat. However, it only supported the landowners who have land area of 10-to15 *Kattha*. It also supported the system of rice and wheat intensification. It provided machine and technology for seeding but only to the farmers who have land with irrigation.

The participation of marginal cultivators in seed self-dependency programme is very limited. Agriculture Bio-diversity Policy 2063 (2007) focuses on the protection and promotion of farmers' indigenous knowledge, skills and practices when promoting seeds. However, the registration of agro-biodiversity and allocation system has not been initiated in the sites. To do so, DADO has established varieties of demonstration sites of seed production. In Barabis, the office has established orange, potato, cauliflower and tomato pocket area. In Birpath, it has established the pocket area for potato and maize. However, the poor and marginalized farmers have limited land for the demonstration. The land is also not irrigated, and is far from their settlement making it difficult to protect from theft and livestock.

The group approach of interventions does not benefit the marginalized and semi-landless farmers. The Agriculture policy 2004 has an approach of enhancing food security of small farmers through group approach (FIDA, 2012). In this regard, it focuses on the pocket packages strategies and technology transfer in all districts of research sites. However, there is limited participation of Dalit farmers in the agricultural groups. Table 7.7 shows that only 7.1 percent of them participate in the group. To be a member of the groups, the household must have land tenure. There are no specific provisions to target small farmers within the group. In practice, influential members of groups benefit from limited support of service providers.

Table 7.7: Households representing in agricultural groups in the study villages

Categories	Data	Members in agricultural groups		Total
		Yes	No	
Upper Caste	Frequency	65	130	195
	%	33.3	66.7	100.0
Janjati	Frequency	17	45	62
	%	27.4	72.6	100.0
Dalits	Frequency	8	105	113
	%	7.1	92.9	100.0
Total	Frequency	90	280	370
	%	24.3	75.7	100.0

Source: Household Survey, 2012/13

7.2.1.3 Fertilizer Policies

The impacts of removal of subsidies in fertilizers seem to be negative among rich farmers. Nepal's fertilizer distribution prior to 1997 was under a state monopoly in subsidy, with AIC (Agricultural Input Company) being solely responsible for import and distribution of fertilizers. The liberalization of the fertilizer sector in 1997 phased out the subsidy (Thapa 2006). The Government dissolved AIC and anticipated that the private sector would play active role in its distribution. After removal of subsidy, the distribution of fertilizers started taking place through open market. Records show that total supply of fertilizers in the country did show some increase immediately following the policy reforms (Pullabhotla, et al., 2011). However, the price of fertilizers increased. Due to the transportation cost incurred to transport from Terai to hill, the cost of fertilizers is higher in Birpath and Barabis. As most of the fertilizers are needed during the rainy season when there is no transportation and problem of storage capacity, the quantity of supply of fertilizers also reduced. It reduced the purchasing power of medium and large farmers because they need such inputs. Shortage of fertilizers also forced them to reduce amount of fertilizers used. However, the availability of fertilizers for the poor improved. The poor had limited access to subsidized fertilizers earlier. They can purchase it in open market now. The use of fertilizers among them, though not significant, has increased.

The use of chemical fertilizers in Birpath and Barabis is very limited. Still the use of compost manure dominates the use of fertilizers in Birpath and Barabis. National Fertilizer Policy 2058 (2002) has focused on the provisions that enhance fertilizers' consumption in rural areas. Tenth Five Year Plan (2002-2007) has emphasized on the massive campaign for the use of quality inputs to increase agricultural production and productivity. FAO (2003) shows that, in general, the use of fertilizers accounts for approximately 50 percent of the yield increase of the grain. However, Table 5.3 shows that only 12.4 percent of total respondents use chemicals fertilizers. Among them, there is limited awareness about appropriate mix of different components of chemical fertilizers.

Because of price hike of chemical fertilizers in the open market, dependency of farmers on the Indian market can be seen. Major reason behind the situation has been that the fertilizers in the Indian market are cheaper than in the Nepali market. Market Survey of this study in Dhangadi shows that formal market price of fertilizers in Gaurifanta, Indian market near to Dhangadi, is 15-20 percent lower than its market price in Dhangadi. It also increases smuggling; undermining legal fertilizer trade. Farmers believe that almost all of the fertilizers in Terai come through this informal source.

Black market limits the quality of fertilizers even though the National Fertilizer Policy 2002 has highlighted on transparent, competitive and effective system of fertilizers distribution. The Fertilizer (Control) Order 1999 has specified the roles and responsibilities of the Fertilizer Unit of the Ministry to control the quality of fertilizers. However, there is an estimation that three times more of such fertilizers are imported as compared to the official imports (Thapa, 2006). Black markets impose an inflated cost on the farmers due to high prices and inferior quality of the fertilizers (Samriddhi, 2011). In Fulbari, there were also unofficial imports of fertilizers through the open borders with India. Farmers believe that the quality of this fertilizer is not better than the quality of compost manure they have been using traditionally in Nepal in terms of its effect on soil productivity. Farmers, not only in Fulbari VDC, but also in Birpath and Barabis significantly use these types of fertilizers. Market also promotes such fertilizers because farmers even in hills and mountains can purchase it in a cheaper price.

The transport subsidy introduced by Government in 2009 for fertilizers reduces the price of it in Birpath and Barabis. Without it, price differential is very high due to transport and handling costs in those areas. The cost of these fertilizers is lower than the ones sold by the private sectors. In Barabis, the Agricultural Input Corporation transports fertilizers through vehicles or mules to Martadi. Then, it transports up to service centres including cooperatives, which sell it. In Birpath, there are petty shops that sell fertilizers and pesticides. Earlier, the farmers had to travel for two days to bring the fertilizers. Now

they get it through cooperatives and petty shops. In Bajura, DADO annually distributes urea-40, DAP-19 and potas-2.5 MT. In general, it distributes 77.8 MT of total chemical fertilizers in pocket areas.

However, the supply of subsidized fertilizers is critically below the demand of local people. National Fertilizer Policy 2002 was formulated to support agricultural production by ensuring supply of good quality fertilizers. The amount of subsidized fertilizers is determined based on the coupon for the district. AICL distributes about 120,000 tons of subsidized fertilizers. However, the alleged demand is 500,000 tons annually (GON, 2012). In 2011, there was shortage of fertilizers in the study sites. Farmers in Barabis say that Agricultural Input Corporation of Betalmandav sells fertilizers but in a very limited amount. Therefore, they are obligated to purchase it from private shops.

Marginal cultivators are not entitled to get benefit from subsidized fertilizers. In the district, Chief District Officer (CDO) headed fertilizers supply and distribution management committee looks after the affairs of distribution of subsidized fertilizers. The cost of these fertilizers is the same for all farmers. Because of low purchasing power of the poor farmers, they cannot purchase it. On the other hand, they need cash; they cannot purchase fertilizers in credit. Subsidized fertilizers are sold through designated cooperatives, otherwise farmer needs to visit district headquarters. Farmers also have to provide valid proof of land ownership to obtain the subsidized fertilizers creating problems for tenant farmers.

In the distribution of chemical fertilizers, the agency gives importance to Urea. National Fertilizer Policy 2058 (2002) promotes integrated plant nutrients management system for efficient and balanced use of fertilizers. In practices, lesser importance given to balanced use of fertilizers. DADO Achham recommends 15.25 Kg (Urea 9.5 Kg, DAP 3.25 Kg and Potas 2.5 Kg) and 9.48 Kg (Urea 5.68 Kg, DAP 2.2 Kg, Potas1.6 Kg) for paddy rice in irrigated and non-irrigated land respectively. Similarly, it recommends 16.28 (8.8 Kg of Urea, 5.4 Kg of DAP and 2.1 Kg of Potas) and 10.36 (3.36 of Urea, 5.4

Kg of DAP and 1.6 Kg of Potas) respectively for wheat in irrigated and non-irrigated land. For maize, the office recommends 10.95 Kg per *Ropani* in Bajura district. However, farmers do not use chemical fertilizers in appropriate mixture. There is very little awareness among the farmers about it.

7.2.1.4 Irrigation Policies

Withdrawal of subsidy on shallow tube-well has no effect on the irrigation patterns of small and marginalized farmers. Government had the policy of direct capital cost subsidy and credit facility to the farmers from 1980-2000 (Kansakar, 2006). The study finds that some large, farmers in Fulbari benefitted from the subsidy. On the other hand, the small and poor farmers did not get benefit because they could not provide collateral for the loan or afford initial amount of down payment to run the tube-well. There was perception among the poor that the provision was only for the property owners and they had not expected to approach for the provisions.

The subsidies also could not bring any significant changes among the large farmers. Large farmers mostly used it for the production of paddy and wheat. There was limited supply and use of improved fertilizers, technologies and seeds simultaneously with irrigation. As the subsidy policy envisaged close coordination between irrigation and agricultural line agencies, it could not happen as expected. After policy shift in 2001, the Government withdraw direct subsidy on irrigation and has a provision of indirect subsidies. It is collateral free loan provided to groups for shallow tube well. However, the access of the small and marginalized farmers is very limited again. It demands a minimum of 4 hectares of agricultural land, whereas these farmers have scattered and limited land. I also observed that there is social problem to consolidate the land of individual for the purpose. Farmers say that the agencies select such project based on the political influence; the small farmers have no approach to the scheme.

There are many conflicts over entitlement to water resources in Birpath and Barabis VDC. Water Resource Act 1993 and National Water Resource Strategy 2002 vest the ownership of all water resources on state and disregard the private ownership (Pradhan, 2006). However, there are water sources in the private land in the VDCs. The landowner does bargain with Government apparatus for personal use of water by constructing irrigation dams in their land. The poor and marginalized community needs to bear additional cost to use such water.

Area of land with irrigation is very limited in the study sites. Irrigation Policy 2003 has given emphasis on the availability of round the year irrigation facility through effective management of existing water resources. Sharma (2008) argues that the improvement in irrigation would increase yield of rice and wheat by 30 to 40 percent. However, table 7.8 shows that only 42 percent of total land in the study sites is under irrigation. Area of irrigated land in the Birpath (hills) and Barabis (mountain) is only 31.57 percent and 30.4 percent respectively while in Fulbari (Terai) it is 53.7 percent.

Table 7.8: Status of irrigation in study sites

Districts	Irrigated land (Area in hec)	Non irrigated land (Area in hec)	Total Land	Irrigated land (%)
Fulbari	21.5	19.5	40	53.7
Birpath	6	13	19	31.6
Barabis	7	16	23	30.4
Total	34.5	48.5	82	42.1

Source: Household Survey, 2012/13

In Birpath and Barabis, there are practices of irrigation system managed by the farmers themselves. There are five community-managed small irrigation facilities in Barabis. Irrigation Policy 2003 and Irrigation regulation 2003 are major policies that guide this system of irrigation. However, the sustainability of such irrigation system is questionable. There are issues of regular maintenance and technical feasibility because of lack of sufficient fund with the group. There is a good participation of women and Dalits in Irrigation User Committee. Irrigation Regulation (2003) has provision of 33 percent

representation of women and at least two members from Dalit and other excluded. However, the marginalized community says that there is no provision of equitable distribution of water among the users. Because land of Dalits are marginally located, they face many difficulties to find time for irrigation.

Farmers in all VDCs use some sorts of non-conventional irrigation system such as sprinklers and plastic ponds. Irrigation Development Vision 2005 has also given priority to these irrigation systems. They mostly use such irrigation system in potato and vegetable farming. They use water more efficiently through the system. These systems are very costly for the poor, and they cannot afford it. Some NGOs such as FAYA Nepal and RUDEC also provide this input in cost sharing basis. However, the access of the poor in such provisions is less because of incapability to share money, less approach with the NGOs and unsuitability of land for the irrigation. In Fulbari, pumping set based surface water irrigation from river is in practice. To irrigate the land through pumping set, it costs 250 NPR per hour. It is costly for the poor, and almost impossible to afford.

Master Plan for Irrigation Development in Nepal 1990 focuses on identification, zoning and declaration of irrigable areas for agricultural purpose. However, the Government has not initiated this in the sites despite mentioning in the document. Irrigation policy 2060 (2003) envisages involvement of private sectors in irrigation inputs. However, the involvement of private sector in irrigation is not happening. There are virtually no large irrigation projects. Large and reservoir backed irrigation schemes have been not been initiated. In Barabis, there is Khokala river between two and four wards having potentialities of large irrigation channel but not constructed though local people have been making doing tremendous efforts.

The practice of ground water irrigation system has been happening in Fulbari. Groundwater Development Strategies (1987/1994) regulate the use of such water. While the poor mostly use surface irrigation system, the rich farmers use ground water irrigation system in the VDC. They use irrigation through deep boring. It is expensive for the poor.

It costs 300 NPR per hours. Diesel price hike adds extra cost. The poor cannot afford it because of fragmented nature of their agricultural land. It costs extra for the poor because they need to construct it in many places. There is also group based deep boring irrigation system in the VDC. However, the group excludes the poor because they do not get information about it.

7.2.1.5 Forest Policies

Promotion of forest based food production has not been given priority in the study sites. The Master Plan for the Forestry Sector (1989) had envisaged to improve in the food production through better forest management. World Bank (2002), Fentahun and Hager (2009) and FAO (2013) state that forest based food have been important components of food security, rural diets, and nutrition for millions of people. It has also been important for income (Dembner, 1995; Byron and Arnold, 1999; Arnold, 2002; Sunderlin, et al. 2005; Dhakal, et al., 2011). In Chapter 1, I have discussed about the use of forest-based foods in the study sites. However, forests are not managed in a way to contribute to the agricultural production. On the other hand, the implementing agencies have not preserved and managed forest-based foods in the sites.

The potentialities of forestland for food production have not been utilized properly. Master Plan for Forestry Sector (1989) mentioned that scientific forest management contributes to agricultural production. But it does not say how the forestland can be used for food production. In Kailali, some groups of landless farmers had captured a community forest. It shows that the land is under contestation regarding land reform. The Leasehold Forestry Policy 2002 and Pasture Development Program Guideline 2002 allow the leasing of degraded forestland to poor communities. The policy is very relevant for the landless to produce food. However, the policies give focus to the below poverty line instead to giving priority for landless people.

Community forest has been supporting directly or indirectly in the promotion of agricultural production. Table 7.9 shows that about 92 percent of total households are members of the groups. The group has its own fund. Community Forestry Development Programme Guideline 2007 has a provision that 35 percent of the total income of the group has to be expended for the empowerment and development of women, Dalit, and Janjati living below the poverty line of well being ranking. The group has provided loan to these category households in all VDCs. It supports to purchase agricultural inputs as well as to purchase food.

Table 7.9: Memberships in Community Forestry User Groups

Categories	Members in CFUG		Total	
	Yes	No		
Upper Caste	Count	186	9	195
	%	95.4	4.	100.0
Janjati	Count	55	7	62
	%	88.7	11.3	100.0
Dalits	Count	98	15	113
	%	86.7	13.3	100.0
Total	Count	339	31	370
	%	91.6	8.4	100.0

Source: Household Survey, 2012/13

However, the committees made by local institutions sometimes block the traditional forest based food entitlement of the marginal community. The executive committee of the group has the power to regulate and control the forest products the group use (Khadka, 2009). The committee has interest in the protection oriented forest management while the poor have a focus on its utilization. The protection-oriented forest management strategies limit the use of forest-based foods.

7.2.1.6 Provisions of Village Development Fund

Dalit farmers in focus group discussion say that the VDC grant²² does not address their need. VDC allocate 15% of targeted budget for Dalits. Nevertheless, this budget in all VDCs expended in construction of local road. The Government provides this budget, which plays an important role for food production in the study sites. Local Body Resource Mobilization and Management Operation Procedure Manual (2013) has been brought into implementation in order to manage this grant. Of the total 50 percent programme budget, all VDCs in the study sites allocate 15 percent for agricultural development. This has supported the farmers to purchase improved agricultural inputs and receive training/exposure visit on scientific agriculture. The budget is expended through local agricultural groups while most of Dalits are not members in the groups. In some case, the groups expend the budget for non-agricultural sectors. In Birpath, the group expended such budget in the area of school building.

7.2.2 Policies Dealing with Exchange Entitlement

7.2.2.1 Stabilization of Food Price

Food subsidy: The subsidized food has a very important role in the stabilization of price of food in the districts. The Government has different policies and strategies to steady price of food in the study sites. Timmer (2000) and Coxhead (2000) argued that price stabilization policy is important for food supply where the share of agriculture is declining. In this regard, food subsidy is one of the policies considered to protect consumer welfare against food price increases (Ramadan and Thomas, 2011). NFC has provision of transport subsidies in food since long time in Achham and Bajura districts. However, the reduced price by NFC has limited benefit to the marginalized community because of limited approach of targeting of this agency as discussed in section 5.2.3.

²²Ministry of Federal Affair and Local Development of Government of Nepal provides Grants (conditional/unconditional) to local bodies (VDC). Each VDC receives minimum NRs 1.5 million to 3 million grants from the budgetary allocation of capital grants.

However, the Government policy to reduce the number of NFC depots and total food to be distributed on subsidy has negative impacts on food price stabilization. Major thrust of this reduction was in limiting the role of public sectors and encouraging the role of private sectors in food supply. NFC withdrew sales depots from 29 districts, and reduced number of depots from 135 to 67 in the whole country. Similarly, the number of branch offices has been reduced from 26 to 19 in 2000. Most of the 68 abandoned depots are located in accessible areas. In Achham, depots of Kamalbazar and Sanfe have been closed down. From Kamalbazar the farmers of Birapth used to purchase food. However, considering the longer run in the context of new vulnerability such as the negative impacts of climate change, there is a need to establish some form of public food distribution either in the form of ration card system or running cheap food distribution to poor and marginalized communities in all regions.

Construction of physical infrastructure: The physical infrastructure has been playing important role on reducing the price of food in the sites. To stabilize the price, the Government has been focusing on the construction of physical infrastructure. GTZ (2006) and Sharma (2012) argue that the construction of road and bridges has crucial role in reducing the price of food. Nepal's recent Three Years Plan has focused on road, bridge and ropeways construction in the region with the aim of minimizing transportation costs of goods and services. The role of road in the reduction of food price has been analysed in section 5.2. Nevertheless, there is seasonal link of road in all VDCs. During rainy season, the service of road is disconnected. During that time, the price of food goes up. At other times, the cost goes down again. Regularization of road by building bridges can help people to acquire required food in affordable price.

Provision of food stock: The provision of food stock is not in practice in the region. The Three-Year Interim Plan (2007/08 – 2009/10) and Three Year Plan (2010/11 to 2013/14) has the provision of food stock at the rate of 10 percent, 7 percent and 5 percent of total production in Terai, Hills and Mountain region. It has an important role in the stabilization of food price. However, there is discontinuity and irregularity in these

programmes. This provision was included in first three-year plan, and has not been included in the later plans. However, local old people say that there was system of village food bank 30 years ago at community level. Farmers in Birpath and Barabishad deposited certain sum of food during that time. However, local elite, who was responsible collection of food, misused it. There was also lack of policy to distribute such food.

Provision of cheap shops: The provision of cheap shops has not become successful in the sites. The Three-Year Interim Plan (2007/08 – 2009/10) and Three Year Plan (2010/11-2013/14) has the provision of cheap shops and food credit to provide minimum food need to the vulnerable groups. In Betalmandav of Barabis, there was one cooperative shop providing food at a cheap price. The Government had also supported the shop. It could not sustain because the management committee faced the loss. There is a practice of *hatbazar* been in Fulbari, but there is no practice of it in Birpath and Barabis. This *hatbazar* has an important role in the stabilization of food prices. Farmers sell and buy local products in the bazaar.

However, discontinued Minimum Support Price (MSP) has created insecurity of paddy price among farmers in Fulbari. Following liberalization, the Government of Nepal discontinued it. Amaral and Peduto (2010) argue that the minimum price support mechanism reduces risks for crop producers during the harvest and is an important mechanism to reduce the price volatility that is intrinsic to the agricultural sector. Kailali district was the area from where the NFC procured paddy periodically from local farmers at a price equal to or above the price fixed by corporation. The mechanism had ensured the market with suitable price for the paddy farmers. It also had assured the appropriate and timely payment for the products. The cost and benefit of paddy farming was predictable. After the liberalization, NFC started to purchase food from local markets and the farmers were forced to sell their paddy at the market in the time of harvest because they need to pay loan borrowed for purchasing agricultural inputs. In addition to this, they have no guaranteed market where they can get an appropriate price.

7.2.2.2 Income and Employment

Farm based income

Commercial production of agriculture is in initiation stage in the research sites. Agro-Business Promotion Policy 2006 has an objective to transform the current subsistence-oriented dispersed agricultural production system into commercial consolidated system. Similarly, Tenth five-year plan (2002-2007) had focused on cultivation of high value cash crops in marginal regions. Bhatta, et al. (2008) sees the importance of kitchen gardens. In the study sites, twenty percent farmers produce cash crops. However, these productions in the study sites are in scattered form. There is a need to implement an integrated approach by which the farmers can earn from these types of farming. Commercialization of farming is possible in Fulbari because farmers can consolidate their agricultural land. It is very difficult to do it in Birpath and Barabis.

The Government has not given priority on the productions of crops based on comparative advantage in the region. Nepal's Trade policy 2009 and Trade Integrated Strategy (NTS) 2010 identified 19 areas of comparative advantage from the perspective of trade potential. Among them, agriculture and food security products are cardamom, ginger, honey, tea and coffee. There are potentialities of ginger and honey in the region. However, the Government has not focused on the productions of these crops. There is a need of preparing a list of geography-based products, focusing on micro-climatic advantage. Similarly, Agro-business Promotion Policy 2006 has a plan to establish economic zones (Commercial production Areas, Organic production areas, and Export oriented Production Areas). Nevertheless, the Government has not initiated such types of zonings in the region. As discussed by Frison et al. (2011), there are possibilities of local food production that may increase the agricultural biodiversity as well.

The potentialities of earning from Indian market have not been harnessed. The Commerce Policy 1993 has an objective to make trade more liberal, competitive and

market oriented. In the region, major food trade has been taking place with India. Indian market can guarantee a large and growing trade for Nepalese agricultural products (FAO/WFP, 2007). Farmers are unable to produce the products in a mass scale. For example, the Government has established an agricultural product collection centre in Fulbari but it does not function well because farmers do not collect their farm products. As a result, the price of Nepali product is higher than that of India. In addition to this, there is no clear mechanism of information between Nepal and different states of India. Therefore, information gaps exist which may hinder food trade. This information gap also hampers in pricing of Nepali food products. Difficult terrain in hills and mountains is the major factor contributing to the poor degree of market integration.

Off-farm income and employment

Only a limited number of youths are involving in the off-farm (agriculture based) self-employment activity. The Government has introduced the Labor Employment Policy 2004. Its strategies also include youths-targeted rural promotion of self-employment agri-based business (Pokharel, 2012). The Government has a provision to provide hundred thousand NPR in loan to youth. There is a limited awareness among the youth about the provision. To get this fund they need to follow complex steps such as preparation of business plan, which is very difficult for them. I do not see any programme focusing on youth. When they reach to working age, most of them go to India for seasonal work.

Non-Governmental Organizations are also providing agriculture based economic empowerment to the people living in the study sites. Table 7.10 shows that 60.8 percent of total sampled households benefit from NGO income generation activities. It also shows that more Dalits groups receive advantage from the inputs than those of other social groups are. They are supporting to establish farm and non-farm based enterprise. Nevertheless, NGO based IGA are not seem sustainable because these are short-term activities.

Table 7.10: Household benefiting from NGO income activities (IGA)

Categories	Data	NGO based IGA		Total
		Yes	No	Yes
Upper Caste	Count	106	89	195
	%	54.4	45.6	100
Janjati	Count	38	24	62
	%	61.3	38.7	100
Dalits	Count	81	32	113
	%	71.7	28.3	100
Total	Count	225	145	370
	%	60.8	39.2	100

Source: Household Survey, 2012/13

Non-farm (Non agriculture based) income and employment

Affirmative action policies: The reservation system plays important role to increase the income and purchasing power of marginal groups. The Government of Nepal has the provisions of affirmative action for marginalized person and groups. Ordinance on Public Service Commission Act 2008 of the Government of Nepal has reserved 45 percent of total seat for them. Of which, 9 percent is allocated for Dalits, 33 percent for women, and 27 percent for indigenous/Janjati and 22 percent for Madhesi people.

Some women all VDCs and Janjati in Fulbari have benefitted from the provision. However, general assumption is that Dalits do not fulfill the majority of allocated quotas as they fail to pass examination due to low competency level among them. In Birpath one applied for Kharidar and in Barabise one Dalit youth applied for Subba in 2013, but could not success. In addition to this, the level of education among them is low. There is a need of long-term capacity and empowerment plan for them. In addition to this, there is a lack of provisions, which include the issues of their women.

Social protection policies: Social protection allowances in the study sites play important role for exchange entitlement of targeted people. Since 2009, the Government has been providing monthly allowances to all the citizens above 70 years, all Dalits above 60 years, all single women above 60 years, and all widows below 60 years and all

physically disabled people. Social Security Operational Manual (2012) has been prepared to make the allowance distribution system more systematic and effective.

An estimate from Focus Group Discussion shows that about 70% of this allowance is expended for purchasing food. All senior citizens who have citizenship card are getting the allowance. VDC distributes the allowances in the period of four-month. It provides opportunities of bulk of money to the citizens. However, there are many hurdles to get these allowances. For senior citizens to be an eligible he/she should make and renew ID card annually. It is a very troublesome work for them. Some of the Dalits have no citizenship card. For the differently abled people, there is quota system. Not all of them are entitled to get the allowance. There is no clear strategy how to expend the money. Therefore, there are probabilities of misuse of money particularly from Dalit community as the VDC gives it cash. If there is provision of money transfer through banks, it could increase their access to banking process. There is a need of regular monitoring of social security allowance.

7.2.3 Policies Dealing with Food Intake

7.2.3.1 Food Safety Policies

The Government has not enforced the implementation of food safety rules in the research sites. To ensure safe food, the Food Act 1996 (2052) has provisions to ban production and sale and distribution of inferior or unsafe food items. Enforcement of this Act is the major regulatory activity of the Department of Food Technology and Quality Control (DFTQC). Nevertheless, the structure of this organization does not exist in the study sites. There is only one Inspector in Dhangadi who is responsible for quality control of the whole region. Some time, the Act disempowers the production of local crops. For example, there is a problem in the production of oil in Fulbari. In Dhangadi, the local inspector of Department reported that there was arsenic in the oil. Then the

production of the local oil was banned. There are many evidences that the shopkeepers mix inferior quality of rice with superior quality.

Similarly, concerning agencies have not given priority to safety of animal-based foods in the sites. Animal Health and Livestock Services Act 1998, Animal Health and Livestock Services Regulation 1999, Animal Slaughterhouse and Meat Inspection Act 1999 and its Regulation 2001 are major policies regarding safety of animal-based food. These policies are under the jurisdiction of the Department of Livestock Services. Animal disease surveillance and management of animal quarantine check posts are some of the major responsibilities of the DLSO. However, the technical capacities of the DLSO cannot perform these interventions (Bajagai, 2012). There are no slaughterhouses in all sites; the butchers prepare meat in open space. The safety of meat is not supervised. People of Fulbari bring meat from India without quarantine check.

In addition to this, there is no practice of investigating agricultural product from the perspective of its safety. Plant Protection Act 1972 is the policy that guides safety of pre-harvest agricultural products. Enforcement of this act comes under the jurisdiction of DoA. Some of the major activities of this act are extension of Good Agricultural Practice (GAP) to the farmers, pest surveillance; pest risk analysis and management of plant quarantine check posts. However, the intervention of agricultural agents is not directed towards these issues. There is no systematic grading of food item. Farmers themselves categorize their products.

The issues of pesticides particularly in vegetables are a burning issue in the research sites. The Pesticide Act 1991 and Regulations 1993 regulate the use of pesticides in agriculture including maximum residue limit of pesticides. There are no procedures of checking the amount of pesticides in vegetable. Farmers usually notice that new types of pest and disease infect vegetables and fruits. Most important issue regarding the safety of food is that there are lots of gaps and overlaps in the roles and responsibilities of the organizations, which make the regulation process more complicated.

7.2.3.2 Health Policies

The access of the local people to local health service centre has increased in recent days. Table 7.10 shows that 86.5 percent of total households visited the local health posts at least once a year. There are many reasons for this increased visit. The Health Posts are located nearby to the VDC office. People who visit to the VDC office also visit the Health Posts and vice versa. In addition to this, the health posts regularly organize settlement visit campaigns during which the officials visit the settlements weekly. It encourages the people to visit the Health Posts.

Table 7.11: Households visiting Health Posts

Categories	Households visiting health posts			Total
	Data	Never	At least one time	
Upper Caste	Count	38	157	195
	%	19.5	80.5	100
Janjati	Count	0	62	62
	%	0	100	100
Dalits	Count	12	101	113
	%	10.6	89.4	100
Total	Count	50	320	370
	%	13.5	86.5	100

Source: Household Survey, 2012/13

However, there is limited coordination between health and agricultural agencies that may contribute in the production of healthy food. National Health Policy (2048) and Health Service Act (2053) are major policies that incorporate food security issues. These policies laid the vision of “all Nepali people living with adequate nutrition, food safety and food security”. Their missions are to improve the overall nutritional status of children, women of childbearing age, pregnant women, and all ages through the control of general malnutrition and micronutrient deficiency disorders (MOHP, 2010).

In addition to this, these provisions are scattered. Health Sector Strategy (2004) and National Nutrition Policy 2061 focus on controlling specific vitamin and mineral deficiencies largely through health centre activities. In all VDCs, local Health Posts

provide Micro-vitamin Andiron capsule to pregnant women to compact with its deficiency. In Barabis, Miss Bajura, a local NGO, distributes vita-mix to women. In Barabis, there is another mother nutrition programme, in which, the Government provides five small chickens to pregnant women with the objective of rearing them for nutrition and income generation. These provisions support well to control nutrition deficiency among women.

Nutrition allowances to Dalit children: It has raised awareness among the Dalits that they should give attention to the health condition of their children in all VDCs. The Government of Nepal through its fiscal policy of 2010 provides monthly NPR 200 Child Protection Grant to two Dalit children (less than five years of age) from a family. They say that this allowance has been fruitful in purchasing food items for home, and expending in education of their children. However, there is an issue that not all eligible Dalit children get the allowances. DDC allocate fixed number of quota to the VDC due to limitations of fund. Not only fixed number but also the children do not get full amount of allowance. They are entitled to get NPR 2400 per year but mostly they get NPR 700-800. There are also some hurdles to get this allowance. There is need of birth registration while most of them have no registration card. In addition to this, the parents are unaware of such facilities in some districts. Moreover, the VDC gives the money to guardian of the children. The guardian sometime expend in other area such as purchasing clothes, paying loan etc, though it is meant for the purpose of nutrition. There is necessary to build appropriate strategies for its expenditure by which this money could use for purchasing nutritious food for the children.

7.2.3.3 Drinking Water Policies

Still there are some settlements of Dalits that need facility of improved drinking water. Water Resource Act 1993 and National Water Resource Strategy 2002 have given drinking water the first priority. In the research sites, there are some water sources under the private land. In Birpath, the owner has created an obstacle to construct drinking water

project because of which Dalits are obligated to drink contaminated water. Figure 7.3 shows the source of drinking water for Dalits of ward four of Birpath VDC. The source is open. Sometime, people bring their livestock for water in the source.

Figure-7.3: Unsafe source of drinking water in Dalit settlement in Birpath



Source: The researcher, 2013

Concluding Remarks

The Government policies have been continuously focusing on improvements in food production from the first five-year plan (1956/57-1960/61). However, the review of trends of these policies shows that the objectives and targets of the plans have not been achieved so far. In addition to this, the productivity of marginal people of the region has not improved as expected. Major reasons behind the situation include limited linkages among objectives, strategies and programs of these policies. The interventions lack livelihood opportunities for the resource poor as most of them focus on the land owning

farmers. The policies and their interventions have also given very limited attentions on the formulation of strategies that address the issues of gender and social exclusions. In practice, there has been a lack of coordination among major implementing agencies as well as negligible awareness about interventions and its institutional mechanism among the poor and Dalits.

Regarding production entitlement policies, there are many policies dealing with land ownership and use improved agricultural inputs. There still the issue of land redistribution in hills and mountain. The impacts of policies dealing about improved agricultural inputs are very limited among marginal cultivators. Major cause of limited access include that the amount of supply of agricultural inputs in the region is negligible. The supply of subsidized inputs is very limited and biased towards large land owning farmers. Informal source dominate the supply of seeds and fertilizers. In addition to this, Group approach of interventions does not favor Dalits and marginal cultivators.

Regarding exchange entitlement policies, Dalits, women and marginal cultivators are deriving benefits from food price-stabilization policies (NFC, road, and market), equal wage policies, and NGO based interventions. In addition to this, vulnerable groups such as old aged, single women and physically disabled persons expend major portion of their social protection allowances on food. However, both off- and non-farm based income and employment policies have negligible impacts in the region. There are no specific policies focusing on the marginal youth living in the research sites.

Regarding consumption and utilization policies, the Government has not enforced food safety policies because of limited work force as well as gaps in responsibilities of the implementing agencies. It has been giving limited attention to pesticides in vegetable farming and animal based foods. Some households of Dalits still drink water from open source and Janjati defecate in open space. However, awareness about consumption of nutritious food has increased in recent days due to effective health campaign of health posts.

CHAPTER EIGHT

ALTERNATIVE FOOD ENTITLEMENT OPPORTUNITIES

In the previous chapters, I have talked about the state of food security in the study sites as well as factors and policies that affect it. Within these situations, I have observed and found some innovative practices that may improve the food entitlement of the marginal communities living in the region. These practices are uncommon, and need to be institutionalized through appropriate policies and institutions.

This chapter presents some noticeable alternative livelihood opportunities in the study sites. I have looked at these opportunities from the perspective of food entitlement. Therefore, I have put forward my findings on the topics of production, exchange and consumption entitlement.

In the first section of this chapter, I have discussed about alternative production entitlements such as the use of available land resources and production of cash/organic crops. In the second section, I have discussed about emerging income opportunities in the sites. In the last section, I have discussed about alternative consumption patterns suitable to the people living in the sites.

8.1 Potential Production Entitlement

8.1.1 Use of Available Land Resources

Chapter 7.1 discussed that the production capacity of resource poor farmers (marginal and landless) has not increased as expected. Farmers say that limited access of marginal cultivators to land is one of the major factors behind narrow production among

them. In these regards, some poor farmers are using available land to produce food and other crops. The poor are using land available in public, community and private area. However, there are very limited studies and documents that show how they use the land, how it empowers the marginal people, and what are the policies and institutions regarding these alternative forms of land use.

This section gives a brief introduction of the innovation, its practices in the study sites and relevant literature and policies to present my result and discussions.

8.1.1.1 Leasing of Public Land

Patches of land governed by rural public institutions are called public land. The land exists in the form of grazing land, road and channel side, school land, ponds, and riverside. Deuja (2007) argues that about one fourth of arable land which is classified as public land is underutilized and unmanaged. According to Nepal's Agricultural Policy 2004 and Three-Year Plan 2010 local Government body can lease this land to the poor farmers for farming. Similarly, Agricultural Commercialization Policy (2007) has emphasized on long-term lease of the barren land to the landless people for commercial and cooperative farming. Some international development organizations such as DFID UK funded Livelihoods and Forestry Programme (LFP) and Netherland Development Organization funded BISEP-ST have been promoting such practices in mid-Terai of Nepal. They are supporting community based public land management. In this system, the VDC leases the area of public land to the groups of poor households for specified period (LFP, 2003). In this land, the targeted households cultivate both cereals and cash crops. This study also finds practice of these sorts of mechanism in the research sites.

The public land has the potentialities of promoting poor people's access to land. In Fulbari ward number one, local body (VDC) in collaboration with DADO has leased three ponds to a committee of 15 households of the poor. The poor are farming fish in the pond in the model of agro-forestry. The poor farmers said that the leasehold has increased

their ownership to the pond. From the case of LFP, Kunwar, et al. (2008) argues that the leasing of public land for the poor upholds their right in land. Farmers in focus group discussion inform that it will be beneficial for the poor if the concerned agencies lease the land available in the school and grazing area to them.

Key Informants of this study discuss that this form of arrangement provides the opportunities of utilization of unused and underutilized rural land. Yadav (2008) argues that the agreement is very important for utilization of wasteland. Similarly, Jamarkattel and Baral (2008) and Mallik (2008) argue that such type of land not only supports the utilization of unused land but also contributes to the poor and excluded to generate income through cultivation of cash crops. In Fulbari, local body (VDC) has leased a large portion of riverside land to seventeen flood victim households. Local people used the land for grazing in the past. The body has leased the land individually for five years. In this model, individual household has a contract with the body. They cultivate cash crops such as lentils. The study also finds similar benefit in Fulbari. The beneficiaries of this lease land said that they derive significant portion of their income through the sale of lentils.

However, there is a need of policy guideline that promotes such types of lease land. Kunwar et al (2008) argue that the lack of appropriate legislation discourages the poor to invest in the restoration of public land. In Fulbari, both leasehold groups say that they are unable to do large investment such as construction of check dams in riverside and pond. They are also unable to coordinate with financial institution for loan. They say that the Government may withdraw its agreement at any time. On the other hand, the concerning authorities are also in the situation of confusion about such arrangement. When I discussed with the VDC staff of Fulbari, the staff showed their concern that the poor can capture the land as there is a lack of specific guidelines.

In addition to this, there is also the issue of targeting the neediest people. In this regard, how the concerned body makes allocation of such land is an important dimension

of targeting (Boramy, 2009). For example, the VDC in Fulbari has also leased some parts of its land and ponds through the process of auction. Some schools have also leased its land for grass cultivation through this process. If responsible agencies make a through the process of auctioning the land, the poor cannot compete with the economically prosperous people. In this situation, they become unable to benefit from such provision. Therefore, some of my respondents say that there is the need of specific provision that deals with the issue of what sort of land can be allocated for the deprived households.

8.1.1.2 Contract Farming

Contract farming is the arrangement for farming between property owner and farmer. The proprietor can lease his land to the individual farmer, group of farmers or to a business company. Though, there is no legal provision of contract farming in Nepal, recently Ministry of Agriculture in the support of USAID has prepared a draft of the Contract Farming Guideline. It is in the Cabinet and in the process of promulgation. This legal provision makes sure that the property owner will use properly his/her cultivable through contract and leasing system. The guideline address the issues related to company farming as well as small farmer farming. In the study sites, this kind of arrangement for individual contract as well as cooperative based group farming is in practice.

Contract farming has been emerging as a new form of land tenure in the study sites. The Government has recently prepared Loan-providing Guideline (2014) for providing grants to the targeted farmers who commercialize vegetable production through contract farming. It has a provision to provide one lakh NPR. This grant provides 100 percent subsidy for leasing land and 50 percent subsidy for purchasing materials. The guideline targets the Dalit and Janjati cultivators. In Fulbari, one land-lord has leased its 10 *Kattha* land to a household for two years in 2013. It is for agricultural production purpose. The farmer pays 20000 NPR (200 USD @ 100) per year to the property owner. In Birpath, the poor farmers in the group discussion said that they are talking with rich farmers for such arrangement. This includes regular and seasonal fallow land of

landholders. In this regard, I observe that the group based contract farming may be one of important income earning strategies among the poor. For example, in Barabis, one landlord has leased his land to 40 poor households. Miss Bajura, a local NGO, has supported for this arrangement. A person from the NGO roughly calculated that each individual earned about 10000 NPR (1 USD = Rs100) in 2013.

In my opinion, the contract farming may support to resolve the issues related to absentee ownership. In Bajura and Birpath, the poor farmers say that there is significant area of lands with absentee land ownerships. These lands are from *Thakuri* families. The families live in Terai, Kathmandu or even abroad. They have also land in Terai especially in Kanchanpur, Kailali, Bardia and Banke. They have performed agricultural activities in Terai but have left fallow land in hills and Mountain. They just want to maintain their land tenure in the region. If appropriate legislation guides the provision of leasing such land, it creates a good option for the poor farmers to have an access to land.

Nepal needs specific policy guidelines to regulate wider range of contract farming. The existing law fails to address leasehold farming practices, as landowners are reluctant to allow others cultivate their land, fearing the leasers might claim permanent tenancy. The proposed guideline is limited in scope, and especially focuses on big contract farming. There are also needs of clear provision of insurance on farm products such as crops and animals with incentives to insurance companies, which sell insurance policies for all kinds of farming system including contract or poor focused lease farming.

8.1.1.3 Utilization of Forest Land

Many evidences show that the forestland has been the major source of agricultural land through its conversion (Fischer and Heilig, 1997; Barbier, 2004; Sand, 2005). FAO (1995) report shows that about 19 percent of total crop production increases in poorer countries through expansion of forestland to cultivated land. Conversion of forestland into agricultural land in Nepal is also historical phenomenon. Hobeley and Malla (1996)

argue that people were encouraged to harvest timber and fuel wood in one year and they converted the land into agricultural land in another year before 1955. From 1978 to 1991, people converted much of forest into cultivated area (Pradhan and Pradhan, 2006).

However, on the condition of sensitive and fragile geography, such type of conversion is difficult in Nepal. There are many evidences that the forest protects land and other resources under stress. Instead of conversion, there are potentialities of some alternative forms of use of forestland for agricultural purposes. Nepal's forest policies also allow these alternative forms of forestland use. There are two types of these forms of forestland use in the study sites. I have discussed these potentialities below.

Use of Community forestland

Community forest is a forest in which the Government hands over part of its forest to traditional user for conservation, management and utilization of the forest. The user forms Community Forest User Group (CFUG) and executive committee to manage the forest. Forest Act 1993 and its regulation 1995 and Forestry Sector Policy 2000 are the major policies that deal with community forest of Nepal. Within the community forest, there are sufficient patches of barren lands. The CFUG can allocate these patches of land to the poor for production purpose. Community Forestry Guideline (2007) has a provision that the user groups can allocate barren land available in the forest to the poor people. DFID funded Livelihoods and Forestry Programme in Nepal has promoted this sort of practice in its working districts. The programme's report shows that it is very beneficial for the poor user. This is also very practical for the study sites. There are 10, 6 and 9 CFUG in Fulbari, Birapth and Brahabise VDC respectively. Table 4.3 shows that 91.72 percent of total households of the samples are members of the community forestry in the study sites.

The practice is a very cost effective method of providing land tenure to the poor because it works through participation of local community. In Achham district, 100 users

have allocated 48 hectare of barren land to 48 poor households. The District Forest Officer (DFO) says that actually landless and the poor may benefit from this because they are identified through the process of participatory well being ranking. The group selects the people from the categories of the poor. The categories are included in the constitution of the group. Simultaneously, the beneficiaries groups say that it can increase cohesiveness among different social groups through equitable distribution of resources, and social inclusion practices in the land.

I observe that it also supports to prepare environmentally sustainable location specific integrated land management plan. In Achham, the group has formed a sub-group of the poor within it. This sub-group is entitled to use the allocate land. The sub-group, in the support of user committee and forest official, prepares site-specific plan focusing on the crops that they will cultivate. It also supports to promote joint investment between user committee and the sub groups. User committee has provided matching fund to the group.

However, there are priority contradictions between user committee and the sub-group of the poor. As the land is the land of the forest, the user committee has the priority to cultivate forest-based crops, which support sustainable management of the forest. On the other hand, the poor like to cultivate food crops, which may support their food self-sufficiency. In Achham, the poor are cultivating agriculture-based cash crops such as turmeric and ginger as well as forest based cash crops such as NTFPs. Therefore, how the priority of sustainable forest management and food security is synchronized is an essential component of such land allocation.

In addition to this, the period of land allocation is also an issue. The group can allocate the land for the poor for a period of five years, the period of operational plan agreed with District Forest Office. This can increase tenure insecurity among the poor. There is no security whether the poor can get or not the allocated land again. Because of this, they cannot investment in multi-year crops.

Use of Leasehold Forestland

Leasehold forest is a forest on which the Government has handed over a part of its forestland to an individual or a group of people. The Government forms the group from poor households. It may be the group of a business company. Forest Act 1993 and its Regulation 1995, Forestry Sector Policy 2000 and Leasehold Forestry Policy 2002 have provision of poor focus leasehold forest. In this programme, the Government gives a degraded land to the group of poor households for a period of 40 years. The Government of Nepal has launched this programme in 32 districts of the country. In Achham, there are three- Kotgaida, Sainedi and Kailashkhola- leasehold forests. These leasehold forestry groups include 34.7-hectare land to the 41 households. They are cultivating cash crops. DFO Achham said that it is becoming an option of land tenure for the poor. The demand for such forest is increasing in the district in recent days.

The practice provides long-term tenure to the poor. The period of the lease of such land is forty years. The Government provides registration certificate to the group of the user. It gives security to them. They also did investments that improve the productivity of such land. The group gives report to the DFO annually. Within the group, each individual has parcel of land where they cultivate. It is a kind of land tenure given to the poorest household.

However, there is much evidence that shows that the groups exclude the poorest in the leasehold forest programme. Leasehold forestry policies focus on the poor but it does not focus on the landless people. During the process of hand over, the target groups are left and non-target groups may benefit from it. How actually the landless and marginal cultivators benefit from the hand over process is an important issue. On the other hand, the Government transfers the degraded land to the poorest people without specific support package.

Moreover, there are also issues of priority with the Government whether it hands over forest to the groups in the form of community forest or leasehold forest. In both forestry programmes, the Government transfers management right of its forest to the local community. Existing forest policy gives priority to the community forest where all kinds of households are included as users. However, this forest does not specifically target the poor. Community and DFO are more interested to prepare community forest instead of leasehold forest. On the other hand, the leasehold forests are specifically handed-over to the poor.

8.1.2 Production Potentialities

The potentialities of cash crop cultivation are emerging in the study sites. The Government has been focusing on the cultivation of high value cash crop among the marginal cultivators. It has also launched a new initiative called “One-Village-One-Product” programme. The programme gives priority to the commodities with adequate export potential. López-Casero and Bhujju (2009) see the importance of banana farming for the sifting cultivators that can increase their income. In Fulbari, flood affected farmers cultivate banana in the land left by flood (Figure 8.1). The cultivation is becoming major source of income among them. It has upgraded the economic condition of these farmers. Campilan (2008) finds that potato cultivation has potentialities to contribute to multiple food security and the livelihood goals of remot farmers. There are high potentialities of promotion of local potato called *tharu potato* in Fulbari. It has a very good taste. People in India favor this potato and its market in India is immense. The Federation of Nepalese Commerce and Industry district chapter of Kailali organized this potato exhibition in 2010 to extend its market. However, the potato farmers require an enabling environment for production, utilization and marketing. There are also potentialities of promoting potato in Birpath and Barabis.

Figure 8.1: Banana farming in Fulbari



Source: Researcher, 2012

The concept of organic farming has been emerging in the sites. The Government policies of Nepal such as Agriculture Policy 2004, Agro-business Promotion Policy 2006 and Interim Five Year Plan 2015 to 2017 have also focused on the promotion of such farming. The demand of such product is also high in city area now because of changes in lifestyle and increased role of consumer ethics in food markets. Not only the Government institution of District Agriculture Development Office, but also many NGOs and private sectors are now supporting such products. The productions of organic cereals, vegetables, and fruits have good market in India from the hilly and mountain region. The study sites have good linkages with Indian market; these products may become important income source for the people. In this regard, in Fulbari, there is potentiality of fish farming. Farmers can produce good quality sugarcane in Bajura and Birpath. There are potentialities of fruits production in Birpath and Barabis

The production and use of organic manure in recent days has increased. Tenth five-year plan has focused improvement in compost manure (*gothemal* and *gahut*) to improve the productivity of the agriculture sectors of the vulnerable groups. Farmers are now aware that chemical fertilizers reduce the quality of soil. Farmers remember that

they had used only compost manure before 25 years. There was good productivity of soil in that period. When they experiences drought, they started using chemical fertilizers instead of organic manure. Now, the productivity in the area has declined so much that without use of chemical fertilizers, soil does not support production. Therefore, some farmers again initiated the production and use of compost manure and local seeds instead of chemical fertilizers and improved seeds.

8.2 Alternative Exchange Entitlement

Osmani (1993); Hazell and Haddad (2001) state that development of the non-farm economy in both rural and urban areas become alternate sources of income for marginal communities. The study also finds that the people living in the region have been adopting non-farm sectors such as seasonal migration to India as alternative sources of income. In addition to this, new area of non-farm income opportunities such as wage labor, works in gulf countries, tourism are also growing in the region.

8.2.1 Traditional Earning Practices

The food insecure households have been migrating to India to cope with food insecurity. Responses from KII and FGD show that seasonal migration to India has been in practice from last 30 years from Birpath and Barabis when local people realized the scarcity of food. To cope with the scarce situation, the poor started to migrate to India for seasonal work.

For the migrating households, remittance is the major source of expenditure for food in the study sites. Table 6.4 shows that each migrated households earn 20261 NPR (\$ 202 @ 100) annually from India. They expend 44.5 percent of the total income for food. They expend the income either to purchase food directly or to pay loan related to food.

Table 6.4: Households expending of remittances in food

Area	Sum	%
Education	2668	13.1
Health	1603	7.9
Pay loan	4438	21.9
Business	1295	6.2
Clothes	764	3.8
Food	9015	44.5
Other	478	2.3
Total	20261	100

Source: Household Survey, 2012/13

8.2.2 Emerging Income Opportunities

New income opportunities are emerging in the region. Table 8.2 shows that 41.3 percent of the total respondents said that there are new opportunities in the region. The perceptions about these new income sources are different among different social groups. The table shows that 58.1 percent of Janjati said that they have experienced the new areas. While, only 19.5 percent of Dalits replied that there are new opportunities.

Table 8.2: Farmers perception on new income area in the study area

Categories		New Income Area			Total
		Yes	No	Don't Know	
Upper Caste	Count	94	95	6	195
	%	48.2%	48.7%	3.1%	100%
Janjati	Count	36	26	0	62
	%	58.1%	41.9%	.0%	100%
Dalits	Count	22	91	0	113
	%	19.5%	80.5%	.0%	100%
Total	Count	152	212	6	370
	%	41.1%	57.3%	1.6%	100%

Source: Household Survey, 2012/13

Non-farm wage labor opportunities

As I discussed in chapter 6.2, the construction of road has brought alternative sources of labor for the poor in the research sites. The work in construction areas such as rural road, schools, private buildings etc are increasing in Birpath and Barabis. Construction of private and public building has also increased in the recent days because of easy availability of rod, cements and other construction materials in cheap prices. These are new sectors for wage laborers. In this area, the laborers also get a decent wage. For example in Birpath, the laborers get wage of NPR 500 (5 USD @ Rs 100) for stonework and NPR 1000 (10 USD @ Rs100) for cement work- such as constructing pillar and linter- while in the agriculture they only get NPR 250 (2.5 USD @100). Similarly, the manufacture of rural road, bridge and irrigation channels has been underway in all villages. The programme of district and village development committees has also been focusing on the building of such infrastructure. The work demands huge amount of laborers. The women also have good opportunity to participate in the wage laborers. In Barabis, food for work programme has provision of at least 33 percent of women laborers in its construction work. However, these works demand skilled laborers. Due to the lack of skill among local people, the demand of outside laborers particularly from Terai and India has been also increasing. There is a need of developing the skill of local laborers on the cement work.

The process of rural urbanization has also created some business opportunities. Farmers experience that the farming business in the region is becoming costly. They need to buy chemical fertilizers, pesticides, modern seeds, ground water for irrigation, agricultural equipments, and pay for agricultural laborers. Parker and Pant (2011) argue that urbanization brings shifts in livelihood activity to non-farm and non-land based forms of employment. In the research sites, the small business such as hotel, grain shops, haircut saloons, and meat shops have been increasing in newly established markets. There are also opportunities for laborers. They are being involved in load and unload works. For example, about a dozen laborers regularly do these types of manual works in a

small market of Betalmandab market. Some sorts of skill development training such as mobile repairing, electricity, plumbing, grill, and grain-processing mill may support youth to establish small business in rural market. There are potentialities of computer based skill development training, enhancing capacity and language skills of youths. To increase employment opportunities among them it is necessary to intervene the youths who have passed SLC.

Migration to other countries

Employment opportunities in the gulf countries and Malaysia have been increasing for youths in the study sites. A number of youths from Fulbari and some from Birpath and Barabis have migrated to these countries for labour work. Table 8.3 shows that 3.2 percent of total households send at least one member of their home to these countries for employment.

Table-8.3: Households migrating to countries other than India for work in the study villages

Category	Data	Migration to countries other than India		Total
		No	Yes	
Upper Caste	Count	189	5	195
	%	96.9%	3.1 %	100%
Janjati	Count	59	3	62
	%	95.2%	4.8%	100%
Dalits	Count	110	3	113
	%	97.3%	2.7%	100%
Total	Count	358	11	370
	%	96.8%	3.2%	100%

Source: Household Survey 2012/13

The remittance from these countries plays a crucial role for the households' income in Fulbari. People in Birpath and Barabis are aware about the opportunities of employment in these countries but there is a lack of local agents who can provide information about the process of application and contact with recruiting agencies. The poor households hesitate to go for such employment because it needs huge amount of

investment. Members from the rich and proprietor, who used to go to India earlier, now go to these countries. However, it has been developing new form of inequality because it has increasing the income gap between migrated and non-migrated people. The access of the poor households to such kinds of job is limited.

Tourism

Tourism is the fastest growing industry in the globe. Nepal Tourism Board (NTB) data shows that the travel and tourism contributed 4.6 percent of GDP in 2014. Recent three-year plan (2010-2013) has focused on the balanced and equitable development of rural area through tourism promotion. Tourism Master Plan prepared in 1972 has focused on decentralized pattern of tourism development. In 2008, it has also prepared an updated National Tourism Policy. The country has promoted its brand “Naturally Nepal: Once is not enough”. All these policies have given high priority to the tourism for economic growth of country.

The study sites are important destination for tourists. For tourism, there is need of attraction, transport and accommodation (Shrestha, 2008). In the region, there are water, natural scenery and tradition-based attractions. Department of Tourism 2009 confirms that the region is still untouched and unexplored from the perspective of tourism. The region embraces some of the potential attractions, ranging from the largest herd of Swamp Deer in Asia at Suklaphanta National Park to the majestic beauty of the alpine meadows, forest and lakes at Khaptad and mount Api and Saipal. There are 12 lakes in mountain area of the region. Budi Ganga River of the region has enormous potentialities for rafting. The tradition of *Deuda* folklore, native life and customs are unique. The Raute tribe in the region still lives by hunting and gathering, moving from place to place. Tourists can see and experience the unique *Tharu* culture in the Terai, Hindu culture in the mid-mountains and Tibetan culture in the northern part of the region. In Achham, Ramaroshan area is the virgin area in terms of lake, mountain and vegetation. In Barabis, there is the potentiality of trekking route from Safebagar, Khaptad and Jethibahurani Mountain. The trekking trail to Rara Lake in Mugu also goes through

the site. Regarding transportation, the road has touched all the districts of the region. Dhangadi city is growing in terms of tourism development, construction and hotel business. As marketing is also very important element for tourism (Bhatia, 1983), local people organize *mahotsav* every year in the region. As discussed by Honey and Gilpin (2009) tourism enables communities that are poor in material wealth but rich in history and cultural heritage to leverage their unique assets for economic development, and the region has enormous potentialities for it.

Tourism has potentialities of diversification of income in the study sites. Ashley et al. (2001) and Richardson (2010a) stated that tourism is a very important source for economic diversification in marginal areas. Road links the region with India. It is easy to access from Delhi (6 to 7 hours over land) by interesting route through the hills towns of Uttaranchal. NTB (2014) record shows that 26 percent of total tourists are Indian. Most of them travel by land. The region has the opportunity to attract these tourists. As recent focus of Nepal's tourism policy is on community-based tourism, there are potentialities of such attractions.

The challenges for effective tourism development in the sites include shortages of skilled local staff and safety conditions in the area. Skill development training to SLC appeared or passed youths and girls and linkages with hotel and tourism associations seem potential in the area. There is need of establishment of tourism centre in the region. There is need of upgrading the airport of Dhangadi, 30 KM from Phulbari as well as reopening of Sanfe airport, 20 KM from Barabise.

Forest based entrepreneurship

There are potentialities of involvement of poor and marginalized communities in the forest based business. Marginal communities such as many Dalit make their living through woodwork. The region is highly rich in forest resources and Non-Timber Forest Products (NTFPs) (Awasthi, 2009). Nepal's recent periodic plan (2010-2013) and

forestry policy 2014 has focused on the establishment of forest based enterprise and economic empowerment of the poor. A UN programme named MEDEP has been also providing technical and financial support in the creation and establishment of micro-enterprise in the districts. As urbanization is on the rise, demand of good quality furniture has also increased. Skill development training for traditional wood workers and establishment of furniture enterprise may increase their income. In Kailali, there are sufficient *sal* leaf potentialities of establishing leaf plate making enterprise. Roy (2006) discussed that the NTFPs has considerable potential to mitigate the existing food deficit problem in mountain region. In Birpath, there is sufficient availability of *ritha*, *lokta* and *jhya*. External traders buy these species. There are potentialities of involving the marginalized communities in the collection of these species. In these regards, their capacities need to be improved. In addition to this, they can be involved in the cultivation of economically viable NTFPs.

8.3 Prospective Consumption Pattern

How local people will change the increasing consumption of market rice will to other varieties of local food is important alternative consumption pattern in the region. Increasing trend of consumption of rice has increased dependency of poor on market and aid. The production of rice in the region is low. However, the production of maize, barely and potato in the region can be increased satisfactorily. The alternative pattern of consumption in the region may be the consumption of potato, maize and barely. In Kailali, the production of potato is good. The typical *Tharu* potato of the district is very tasty, small in size and insect resistance. Maize and barely of Birpath and Barabis have good taste and are nutritious. The cost of these crops is half of the price of rice. If we change the habit of eating towards potato, barely and maize, it will sustainable. Use of agricultural inputs for the production of these crops is also very low. Service providers have given very little attention to increase the production of these crops.

Concluding Remarks

In the conditions of resource scarcity and existing situation of food security, some alternative practices are emerging in the region that may improve the food entitlement of the marginal communities. These opportunities are also supported by existing policies of the Government of Nepal.

Use of available land resources and production of cash/organic crops are major alternative production entitlement emerging in the region. The poor are using available land resources through leasing public land, contract farming and utilization of forestland to produce food and other crops. Farmers have been doing off-farm cultivation as alternate to the cereal crops. The Government has been focusing on the cultivation of high value cash crops in the marginal cultivators. In the recent days, the concept of organic farming has been emerging in the sites.

Similarly, ranges of non-farm income opportunities are emerging in the sites. New areas of non-farm income opportunities such as wage labor, works in gulf countries, tourism are also growing in the region. Road has created the opportunities of non-farm wage labor opportunities in the sectors of construction of private and public building. However, developing the skill of local laborers on cement work is essential. Similarly, employment opportunities in the gulf and Malaysian countries are also potential for them. They need information, skills and institutional support to benefit from this opportunity. The study sites are also important destinations for the tourists. The challenges for effective tourism development in the sites include shortage of skilled local staffs and safety conditions in the area.

In recent days, people are aware about the alternative consumption pattern. They have adopted rice based food consumption so far, which is not the major crop in the Hills and Mountain. The alternative pattern of consumption in the region may involve the consumption of potato, maize and barely, which are locally available.

CHAPTER NINE

CONCLUSION

This chapter provides conclusions based on the findings of my research. In this chapter, I have provided key messages and recommendations that I have found from the research.

9.1 Key messages

Food entitlement framework addresses the issues of exclusion and inclusion

Entitlement theory developed by Amartya Sen in 1981 is still relevant for analyzing the issues of access to food. The concept of production and exchange entitlement of the people to acquire food they need is important for food security. In this regard, it gives special attention to the legal means and market mechanism to generate entitlement on food. However, there is a need of inclusion of broader aspects of resource endowments as well as the role of non-market institutions in the framework. More importantly, framework and concepts have not adequately addressed the issues of exclusions and inclusions. To understand food security in the context of society like Nepal, it is relevant to look at the issues from a more holistic, people-centered and participatory perspective. Building on the entitlement theory of Sen, I have developed conceptual framework for the study. I have contributed how formal and informal institutions expand and limit the entitlement of different groups. I believe that the framework captures the issues.

Seasonal migration continues to be major income strategy

Seasonal migration is a major instrument for food entitlement of the poor households. This migration is an institutionalized practice among them. At least one male family member from almost the entire poor houses migrates to India for seasonal labor. The remittance is a major income strategy among them, which they essentially expend for purchasing food. In addition to this, it is a very viable mechanism for them to cope during loss in agricultural production, hike in food price, death of family members and livestock as well as risk of natural disasters. It is the only option for them to deal with these vulnerabilities. However, this practice is not sustainable from their perspective. It has increased the number of female household heads. Though female are empowered to manage their household and community affairs, they face many types of social and economic liabilities in the absence of their spouses.

The Government policies are unable to promote marginal cultivators

The Government policies so far are unable to target the households who have limited land. The Government of Nepal has promulgated and implemented different policies and planned interventions since 1956/57, when first five year periodic plan was made, to improve the livelihoods and food security situation of the people. However, most of the policies so far have focused on households who have sufficient agricultural land. These policies have given high priority to the production of food. Nevertheless, the productivity of the marginal cultivators has not changed. These interventions do not focus on increasing the production of minor cereals such as maize, barely and millet, which are very important for food security of marginal communities. On the other hand, the production of these minor products has been decreasing in the region. As a result, it has increased the dependency of marginal communities in market and aid food. More importantly, there are negligible policies, strategies and interventions that can promote non-land based livelihood opportunities. Simultaneously, the policies are unable to include adequate provisions that address the social dimension of food insecurity. These policies do not implement any provision that address the issues of the inequality and discrimination based on caste, gender and ethnicity.

Food distributions have limited targeting approach

Nepal's food distribution programme is unable to target the most vulnerable groups. Nepal Food Corporation (NFC) has been selling subsidized food in the hills and mountain parts. Simultaneously, the WFP has been conducting labor based food distribution activities. These support structures lack appropriate targeting methods. These agencies follow top down approach of food distribution. How much food needs to be distributed is not decided based on how much the needy people require but it is decided on the basis of how much the service providers have. The agencies have limited amount of food available for distribution. These structures are not very inclusive, transparent and participatory. Sometime, the political power and local leaders influence the supply of food. In addition to this, both organizations focus on the supply of rice giving negligible attentions to local food grains such as barely, wheat and potato.

Food security programs lack broader livelihood approach

Food security programs in the region give high priority to food giving little attention on broader livelihood based interventions. The implemented programmes include very little activities that improve personal and household assets, strategies, institutions and outcome of the marginal community. For example, the food aid has implemented construction work and distribution of food. It uses local laborers and provides short-term employment to them. However, these interventions do not develop the skills of the laborers. There is a high demand of skilled laborers who can work efficiently with cement, rod and bricks. Similarly, Nepal Food Corporation sells food in subsidized price. Nevertheless, it does not address the issues of income and purchasing power. They have no interventions that focus on entitlement promotion. These systems of food distribution are incomplete, with the emphasis mostly on food availability, and access issues seen solely in terms of lower food prices. In addition to this, these programs also do not cover food utilization and vulnerability to food insecurity dimensions.

Social inequities exist in food security activities within households and society

The poor from socially marginal groups (Dalits, women, Janjati) are the most negatively affected groups from food insecurity and hunger in the region. The food insecurity is pervasive among the poor and landless households from all social categories. However, the poor from socially marginalized groups such as Dalits face many forms of social, economic and cultural risks to secure their food need. In the situation of strict social norms, they face many troubles such as limitation of land, decent income earning opportunities and quality food. They have deficit food production, limited access to food as well as unhealthy consumption of food. There are noticeable number of members in their communities who face regular hidden hunger. On the other hand, the poor from the upper caste face food production deficit. Nevertheless, they do not need to face critical period of hunger because of their good access to resources and network in societies.

Historicity makes Dalits vulnerable

Historical injustice inflicted upon Dalits has been a major cause for them to be vulnerable to starvation and hunger. Major reasons behind the situation are that the traditional caste based institutions have not allowed them to own land, develop their human capabilities and dignity of life. The cultural practice of untouchability and traditional patron-client relationship has still hindered their means of livelihoods. Not only to own the land, they are also discriminated to get appropriate education. It is a general perception among rural people is that they do not need to study even now. Their education status is still below national average. As a result, they are unable to perform decent work and employment. As a result, most of them are forced go to India for seasonal works to make a living. They still face discrimination in the access to the services of drinking water, sanitation and health services, which are essential for better utilization of food. Malnutrition among the children of this group is significantly high.

Gender based institution still functioning

Gender based institution still influence the food entitlement of women from all categories of households. The institutions regulate production, access to resources and consumption of food among them. Women do not enjoy the ownership of land due to institutions of patrilocality and patrilinearity. Still, culture does not allow Upper Caste women to consume sufficient animal products such as milk, meat and ghee during menstruations, pregnancy and delivery when they most need the sufficient consumption of these products. Dalit women particularly are not trusted for shared tenancy and contract farming. Among Dalits, the practice of eating leftover food is still at work because of scarcity of food. Dalit women need an authority letter of a male for any commercial endeavour while most of them work as household heads. However, the Janjati women are relatively independent; they have wider opportunities for labor work, to secure their food compared to women from other social categories.

Social change is happening

The study observed changing patterns in gender institution in aggregate terms and in women's production, access and consumption entitlement. Women's ownership in land has been increasing in recent days. Major factor behind the situation is that the Government of Nepal provided incentive of 30 percent reduction in registration fee if he/she registers the land in the name of female. Women from high caste *thakuri* family in hills and *Brahamin/ chhetry* family in Terai are benefiting from this provision. Such women also have increasing opportunities for the employment because of their improved educational status and good social networks with state mechanism. At present, there are also some changes in household customs of food distribution. However, there is different pattern of changes among women from different social groups. The practices of eating at the last and eating left-over are significantly changing among high caste women. Among Dalits, there still are practices of eating residual foods. These practices are related to scarcity of food at home.

The traditional patron-client relationship such as *Haliya*, *Kamaiya*, *Kamlahari*, *Balighare* between Dalits/*Tharu* and Upper Caste has been changing. These were important institutions in the past for food production and distribution. The factors for change include both supply side and demand side factors. In supply side, there is limited production among patron as their population increased and their landholding sizes declined. They could not provide food as required to the client. On the demand side, the clients are aware that it is a system of exploitation. They united themselves and made joint efforts to break up this feudal system of production and distribution. At present, the Government of Nepal government has formally declared liberation of these clients from their patrons. However, market has been a major factor for changing these institutions. Market has been providing deficit food to the poor people. It also consumes the labor of previous clients.

Infrastructure / Roads generate many opportunities

Construction of road has generated many forms of opportunities and changes in the region. In the case of food security interventions, the construction of road seems very useful in the resource scarce areas instead of other forms of support such as direct distribution of food. In the region, the road has facilitated the establishment of many small markets - a very significant change in the study sites. These small markets have increased the availability of cheap food for the poor. The road has promoted regional movement of goods and services in Terai, Hills and Mountains. Major remarkable modification is that it has encouraged market based food production, distribution and consumption. It has also supported farmers to initiate the commercialization of their agriculture. In addition to this, it has created diverse income opportunities among different categories of people such as business chances for the rich and non-farm laborers opportunities for the poor.

Multi-faceted Strategies and Potentials

In spite of resource scarcity, people are trying to adopt different innovative forms of strategies to secure their food need. The poor households are cultivating different crops through the mechanism of leasing public land, contract farming and utilization of forestland. These new types of land tenure may resolve the grievance and problems associated with land reform issues. At present, they are doing off-farm cultivation and promoting organic farming. The construction of road and process of rural urbanization has also supported to diversify the income of local households. In addition to this, there are potentialities of earning through migration to countries other than India, promotion of local tourism, and establishment of forest based entrepreneurship. If the government and other support agencies can institutionalize these practices through appropriate policies and support mechanism, these may be alternative forms of food entitlement among the marginalized communities of the region.

9.2 Recommendations

Public interventions still crucial

The bigger issue is that whether the system of public food distribution needs to stop or continue in the region. After construction of road, in the name of liberalization, some depots of Nepal Food Corporation have been closed in Achham district. The depots were supportive for the poor because they provided food in cheap price. There is no mechanism of public food distribution in Kailali since it is a food surplus district. However, there is the need of some mechanism of the Government to support the vulnerable communities even in food surplus areas. These mechanisms may be the provision of voucher, cheap shop, food cards or others.

Access of the poor to land needs to be promoted

I discussed that agricultural land still matters for food entitlement of the people living in resource scarce areas. Institutions that promote people's access to land seem to be a precondition for achieving food security as well as broader livelihood objectives of the marginal communities. To do so, there is need of transforming informal land tenure to formal tenure because many households still own agricultural land through the former system. To increase the access of the landless households to the land, the Government has many options. It can make policies that promote the households to use available barren land in the area.

Strength based income source

Food purchasing power of the people is an important element for acquiring food they need. In these regards, diversification of income sources is an essential component. These diversifications seem sustainable once the people broaden their strategies based on their strength. Recently, the road and other infrastructure have created many sectors of strength. It requires making investment in such sectors. Simultaneously, it is better to upgrade the labor skill of youths. Focus needs to be given to launch skill development programmes based on the demands at Indian and abroad labor market.

Specific policies required

The Government policies of Nepal dealing with food security are very general. There is a need of specific policies, strategies and activities that address the issues of food insecure groups such as marginal cultivators among all caste groups, Dalits and women. It needs interventions that improve holistic food entitlement of the marginal communities. For marginal cultivators, interventions that can enhance their productivities may prove

fruitful. For Dalits, strategies that can improve their livelihood assets can derive sustainable impacts. For women along with Dalits, the policies need to address the social dimensions such as caste and gender based discriminations of entitlement failure among them. There is also a need of linkages among objective, strategies and programmes of these policies.

Innovations need to be institutionalized:

In the study sites, some innovations such as use of available land resources and production of cash/organic crops, emerging income opportunities and alternative consumption patterns are in practice. These practices may improve the food entitlement of the marginal communities living in the region. These practices need to be institutionalized through appropriate policies and institutions. The Government and other development agencies need to promote these practices through appropriate inputs. There are needs of interventions that enhance the access of Dalits and other marginal cultivators to these practices.

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ANNEXES

Annex 1. Household Survey Questionnaire

1. Basic information

- 1.1 Name of household head
- 1.2 Name of respondent
- 1.3 Sex
- 1.4 District
- 1.5 VDC
- 1.6 Ward Number
- 1.7 HH number
- 1.8 Social category
- 1.9 Economic class
- 1.10 Nearest neighbor's name
- 1.11 Date of Data entry

2. Household (common cooking) information

SN	Relation to the members	Gender	Age	Education	Occupation	Marital status	Health status
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							

2.1) Has anyone from the HH migrated for job?

- 1) Yes 2) No

2.2) if yes,

How many.....where.....

3. Livelihoods assets

3.1) Have your HH land?

- 1) Yes 2) No

3.2) if yes,

Khet (irrigated) area.....Pakho (non-irrigated) area.....

3.3) Have you given land in lease?

- 1) Yes 2) No

4. 4) Have you taken land in lease?

- 1) Yes 2) No

- 3.4) Has woman in your HH of Ownership on land?
1) Yes 2) No
- 3.5) Have you sold land from last five years?
1) Yes 2) No
- 3.6) Have you purchased land from last five years?
1) Yes 2) No
- 3.7) Are you members in forest user groups (CFUG, LHFG)?
1) Yes 2) no
- 3.8) Have you private forest?
1) Yes 2) No
- 3.9) Are your house members in cooperatives/saving credit?
1) Yes 2) No
- 3.10) Are your house members in any political parties?
1) Yes 2) No
- 3.11) Where your relatives are reside?
1) In this VDC only 2) In this VDC and other district including Terai 3) In this VDC,
other district and Kathmandu
- 3.12) Have you rear cattle?
1) Yes 2) No
- 3.13) If yes, number of
Cow.....buffalo.....oxen.....goat/sheep.....pig.....
- 3.14) Have you milk producing cattle?
1) Yes 2) No
- 3.15) Have your own house?
1) Yes 2) No
- 3.16) If yes, types of house:
1) Cemented 2) stone 3) Thatched
- 3.17) If yes, location of house:
1) Plain 2) slope 3) prone to land slide/flood
- 3.18) Have you mobile?
1) Yes 2) No
- 3.19) Have you solar or electricity?
1) Yes 2) No

3.20) Have you bank account?

- 1) Yes 2) No

5. Food security information

4.1) Annual food production (last year)

SN	Food items	Production (Quintal)	Amount sold (Quintal)	Purchased amount (Quintal)	Remarks
1.	Rice				
2.	Maize				
3.	Wheat				
4.	Barley				
5.	Millet				
1.	Potato				
2.	Pulses				
3.	Oil seeds				
4.	Others				
5.	Vegetables				
6.	Milk				
7.	Meat				

4.1.2 Have you fruit trees?

- 1) Yes 2) No

4.1.3 If yes, how many trees you have.....

4.1.4 How many months are you sufficient on own production of vegetable.....

4.1.5 Have your house collect forest based food?

- 1) Yes 2) No

4.1.6 Have you purchase meat/fish?

- 1) Yes 2) No

4.1.7 If yes, what amount per year? Meat.....Fish.....

If deficit, go to the question number 5.3

4.1.8 Have you find any changes in food production system?

- 1) Yes 2) No

For detail go to the policies 9.1

4.2 Access to food

4.2.1. From where you get extra deficit food (last year)

SN	Place	Market	NFC	Community	WFP	Other
1.	Rice					
2.	wheat					
3.	pulses					
4.	Oil					
5.	others					

4.2.2 Do your households get support from community (food surplus households) during food scarce period?

- 1) Yes 2) No

4.2.3 If yes, what is the mechanism?

SN	Mechanism		
1.	borrow		
2.	Barter		
3.	Purchase		
4.	Wage		
5.	Gift		
6.	Relief		
7.	others		

4.2 Food consumption

SN	Food items	How many times in last week	Increased or decreased than last five years	Remarks
1.	Rice			
2.	Wheat			
3.	Maize			
4.	Vegetable/fruit			
5.	Pulses			
6.	Meat/ Egg/fish			
7.	Achar			
8.	Milk & product			
9.	Forest food			
10.	Alcohol			
11.	Sugar & products			
12.	Others			

4.3.1 Has there any change in cooking style?

- 1) Yes 2) No

4.3.2 Do you experience any difference between food you consume before and now?

- 1) Yes 2) No

4.3.3 Do you experience any changes in nutrition knowledge?

- 1) Yes 2) No

4.3.4 Do your house different food allocation practices?

- 1) Yes 2) No

4.3.5 Do your household food discrimination practices with women?

- 1) Yes 2) No

4.4 Food utilization

4.4.1 What is the source of your drinking water?

- 1) Tap 2) Well 3) River 4) other

4.4.2 How much time it takes to collect water.....

4.4.3 How far is the health post from you house (in hours)?

4.4.4 Who does check up in health post?

- 1) Doctor 2) CMA 3) HA 4) Other
- 4.4.5 How many times did you visit health post in last year?
- 4.4.6 How many times did you check up with doctors in last year?
- 4.4.7 How frequently does the local health volunteer visit you house (times/year)
- 4.4.8 Has your house toilet?
1) Yes 2) No
- 4.4.9 If yes, what is the type of toilet?
Improved thatched middle
- 4.4.10 if no where your HH defeat:

4.5 Stability of food (Last year)

- 4.5.1 How many months it is sufficient from your production.....
- 4.5.2 Does your house face very difficult to find food at any time of year?
1) Yes 2) No
- 4.5.3 If yes, which are the most critical months for your house?
- 4.5.4 Does your house remain hunger at any time of the year?
1) Yes 2) No
- 4.5.5 How many days do you remain without acceptable food?
- 4.5.6 Which family members do remain in this condition?

6. Food distribution and governance

5.1 Public food distribution through NFC (Nepal Food Corporation)

- 5.1.1 Did your household buy food from NFC last year?
1) Yes 2) No
- 5.1.2 If yes, which month mostly you go to NFC.....
How frequently you go (day/month).....
- 5.1.3 What food items you purchased.....
- 5.1.4 How much you purchased...in kg, How many months you use it,
- 5.1.5 Do you feel any improvement in food distribution from NFC?
1) Yes 2) No
- 5.1.6 Do you feel any inequalities in the distribution of such food?
1) Yes 2) No

5.2 Food aid/WFP (World Food Programme) and humanitarian support (Red Cross)

- 5.2.1 Is your house benefiting from food distribution from food aid?
- 5.2.2 If yes, from where
1) Aid 2) Red cross 3) School meal 4) Others
- i. What is the mechanism to get food?
1) Cash 2) work 3) other
- ii. How much you get such food.....
- iii. How many months you use it.....
- iv. Are these opportunities available always?
1) Yes 2) No
- 5.2.6 How far you need to go to get food of aid?

- 5.2.7 Do you feel any improvement in food distribution from aid?
 1) Yes 2) No
- 5.2.8 Do you feel any inequalities in the distribution of such food?
 1) Yes 2) No

5.3 Food distribution through market

- 5.3.1 Does your household purchase food from market?
 1) Yes 2) No
- 5.3.2 If yes, where you usually go to purchase food:
 1) Local retailer 2) Mills 3) hat bazaar 4) other
- 5.3.3 Where is the market located?
 1) In your village 2) your VDC 3) your district 4) other
- 5.3.4 What you buy from the market.....
- 5.3.5 How frequently you go to market to purchase food.....
- 5.3.6 Is there price differentiation among different shops?
 1) Yes 2) No
- 5.3.7 How you purchase food?
 1) Credit 2) cash 3) labor,
- 5.3.8 Have your house storage facility?
 1) Yes 2) No
- 5.3.9 If yes what is the types of storage: Tin, mud, bamboo, other

7. Intra-family distribution of food

- 6.1 From abovementioned food distribution, do all members of your household have sufficient amount of food to eat?
 1) Yes 2) No
- 6.2 If no, which members of your household is more food insecure?

8. Entitlement and access to food

7.1 What is your annual Households Income and Expenditure (last year?)

SN	Source of income	Annual income	Area of expenditure	Annual expenditure
1.	Sale of food crop		Food	
2.	Sale of cash crop		Meat	
3.	Agriculture wage labor		Health	
4.	Non-agricultural wage		Education	
5.	Self employed		Agriculture	
6.	Government job salary		Clothes	
7.	NGO/Private company		Others	
8.	Sale of livestock			
9.	Remittance			
10.	Total			

7.2 Is your household annual income sufficient for annual expenditure?

1) Sufficient 2) good 3) very difficult 4) not at all

8.3 If not, what you do to fulfill expenditure requirement?

1) Credit from money lender 2) credit from bank 3) Credit from groups 4) others

8.4 Have your house benefit from new area of income?

1) Yes 2) No

8.5 Have your house experience new areas of expenditure?

1) Yes 2) No

9. State of vulnerability and adaptation mechanism

8.1 Usually what types of risk you face?

1) Climatic 2) health 3) conflicts 4) unemployment 5) price hike 6) others

8.2 If you climatic effect what is the major climatic risk?

1) Drought 2) Floods 3) late rainfall 4) disease and 5) others

8.3 What is the percentage of loss in the production of food?

8.4 Do you feel any effects of Caste, and ethnicity status on food security of your household?

1) Yes 2) No

8.5 Do any members in your house drink alcohol?

1) Yes 2) No

8.6 If yes, do you make alcohol?

1) Yes 2) No

10. Policies and development initiatives

9.1 Production

9.1.1 Have your house ever received land from Government?

1) Yes 2) No

9.1.2 What do you use for irrigation?

1) Channel 2) pumping set 3) Small irrigation 4) Water harvesting.

9.1.3 Who did support this irrigation?

1) VDC/DDC 2) NGO 3) self

9.1.4 What kinds of manure are you using?

1) Chemical 2) Compost 3) both

9.1.5 How much you use fertilizer annually: Chemical:

9.1.6 from where you get it?

1) Government subsidies 2) market 3) NGOs 4) other

9.1.7 Are you using improved cereal seed?

- 1) Yes 2) No
- 9.1.8 Where you get it?
1) Government subsidies 2) market 3) NGOs 4) other
- 9.1.9 Do you have cultivated improved vegetable?
1) Yes 2) No
- 9.1.10. Where you get it?
1) Government subsidies 2) market 3) NGOs 4) other
- 9.1.11. Are you using insecticides/pesticides?
1) Yes 2) No
- 9.1.12. Where you get it?
1) Government subsidies 2) market 3) NGOs 4) other
- 9.1.13. Have you received loan to purchase agricultural inputs?
1) Yes 2) No
- 9.1.14. Have you received loan from bank?
1) Yes 2) No
- 9.1.15 Have you get training on food production and agriculture?
1) Yes 2) No

9.2 Distribution and exchange policies

- 9.2.1 Are you getting standard wage determined by CDO?
1) Yes 2) No
- 9.2.2 Have you benefit from child allowances, old aged allowances, nutrition for pregnant women?
1) Yes 2) No
- 9.2.3 Have your household benefited from any targeted activities relevant to food security?
- 9.2.4 Is your house benefit from any women based activities?
1) Yes 2) No
- 9.2.5 Is your house benefit from any remote area development activities?
1) Yes 2) No
- 9.2.6 Is your house benefit from any social inclusion based activities?
1) Yes 2) No
- 9.2.7 Is your house benefit from any differently able people based activities?
1) Yes 2) No

9.3 Consumption policies

- 9.3.1 Is your house benefit from regular pregnancy check up benefit?
1) Yes 2) No
- 9.3.2 Is your house benefit from sanitation?
1) Yes 2) No
- 9.3.3 Is your house benefit from drinking water?
1) Yes 2) No

Annex 2. KII stakeholders

SN	Name	Stakeholders	Address
1.	Ananda Raj Bajracharya	Ministry of Agriculture	M@E Department, Kathmandu
2.	Naresh Raj Sharma	Ministry of Agriculture	DADO, Dhangadi, Kailali
3.	Bramadev Saha	Ministry of Agriculture	DADO, Martadi, Bajura
4.	Bal Gobinda Pathak	Ministry of Agriculture	DADO, Mangalsen, Achham
5.	Keshav Raman Acharya	Agri-Develop Bank	Ramsahapath, Kathmandu
6.	Gokarna Pd Sharma	Ministry of MOFALD	LDO, DDC, Dhangadi, Kailali
7.	Ganesh Basnet	Ministry of MOFALD	VDC, Fulbari, Kailali
8.	Keshav Raj Puri	Ministry of MOFALD	VDC, Barabise, Bajura
9.	Surendra Ghimire	Ministry of MOFALD	DDC, Mangalsen, Achham
10.	Kabi Raj Khanal	MOHP	Ramsahapath, Kathmandu
11.		MOHP	DHO, Dhangadi, Kailali
12.	Rama Aryal Panthi	MOE	Singadurbar, Kathmandu
13.		MOE	DEO, Dhangadi, Kailali
14.	Shaha stores	Market	Dhangadi, Kailali
15.	Nama Pd sharma	Market	Fulbari, Kailali
16.	Dilli Raj Sharma	Market	Federation of industry , Dhangadi, Kailali
17.	Tapa Pd Shaha	Market	Bayaldanda, Barabise
18.	Man B. Dhimi	Market	Bayaldanda, Barabise
19.	Padam Thapa	Market	Bayaldanda, Barabise
20.	Prem Shahi	Market	Gairitand, Birpath
21.		Market	Mangalsen, Achham
22.		Market	Safebagar, Achham
23.	Pardhan Stores	Market	Baspark, Surkhet
24.	Crishtina hobb	WFP	Patan, Lalitpur
25.	Birendra Shahi	WFP	Dhangadi, Kailali
26.	Dipak Paudel	WFP	Mercy Crops, Dhangadi, Kailali
27.	Birendra Kadayat	WFP	Mangalsen, Achham
28.	Hom Nath Dahal	WFP	RAP, Mangalsen, Achham
29.	Purna audel	WFP	SAPPROSC, Martadi, Bajura
30.	Nanda Raj Regmi	NFC	Dhangadi, Kailali
31.	Bhim B Bhandari	NFC	Mangalsen, Achham
32.	Ratna B Chanda	NFC	Martadi, Bajura
33.	Tilak Adhikari	NGO/INGO	YAC Nepal, Dhangadi, Kailali
34.	Ram B Khadka	NGO/INGO	FAYA/ EU FFP, Dhangadi
35.	Lal B Chaudhari	NGO/INGO	Swyamjagriti, Fulbari
36.		NGO/INGO	RUDEC, Achham
37.	Purna B Nepali	NGO/INGO	DEC, Martadi, Bajura

Annex3. KII villagers

S N	Name	Gender	Caste	Character	Address	Remarks
1.	Nepalu Chaudhari	M	J	Social worker	Fulbari-, Pachisghar	
2.	Vanakala Sing	F	SA	Housewife	Fulbari-2, J Gaun	
3.	Manju Agri	F	D	Farmer	Fulbari-2, Dandatole	
4.	Sita Chaudhari	F	J	Farmer	Fulbari-3, Purbi Lalitpur	
5.	Mina Chaudhari	F	J	Flood victim	Fulbari-3, Purbi Lalitpur	
6.	Rajeshwori Chaudhari	F	J	Social worker	Fulbari-3, Nuwakot	
7.	Chham B Thapa Magar	M	J	Grain seller	Fulbari-6, Sitabasti	
8.	Sahabuddin Chaudhari	F	J	Flood victim	Fulbari-7, Khalde	
9.	Thakur Bishokarma	M	D	Farmer	Fulbari-9, D Gaun	
10.	Dinesh Chandra Regmi	M	SA	Politician	Fulbari-9, D Gaun	
11.	Janaki Mijar	F	D	Single women	Birpath-2, Tallohubke	
12.	Tulasa Shahi	F	SA	Farmer	Birpath-3, Tallohubke	
13.	Nandakali Shahi	F	SA	Senior citizen	Birpath-3, Muludubke	
14.	Bhan B Shahi	M	SA	Farmer	Birpath-4, Dhanedhan	
15.	Tek B Janala	M	D	Teacher	Birpath-4, Birahetole	
16.	Laxmi Janala	F	D	Farmer	Birpath-4, Birahetole	
17.	Jash B Janala	M	D	Vegetable seller	Birpath-5, Gaiditand	
18.	Chhatra B Sahi	M	SA	Teacher	Birpath-5, Bayaele	
19.	Mani Raj Bhandari	M	SA	Senior citizen	Birpath-5, Bayaele	
20.	Mina Tamata	F	D	Hotelier	Birpath-5, Gaiditand	
21.	Madhava Pd Bhandari	M	SA	Ex-VDC Secretary	Birpath-5, Bayaele	
22.	Lal B BK	M	D	Tradition occupation	Barabise-2, Dalitwada	
23.	Taradevi Thapa	F	SA	Single women	Barabise-3, Nuwakot	
24.	Rawanti BK	F	D	Senior citizen	Barabise-4, Singada	
25.	Nirmala BK	F	D	Teacher	Barabise-4, Singada	
26.	Hira Nepali	F	D	HIV victim	Barabise-5, Tallokapri tole	
27.	Urmila Shaha	F	SA	Teacher	Barabise-5, Tallokapri tole	
28.	Chandra Nepali	F	D	Senior citizen	Barabise-6, Dungritola	
29.	Varat Thapa	M	SA	Social worker	Barabise-6, Dungritola	
30.	Jalu Wod	M	D	Farmer	Barabise-7, Deulisen	
31.	Ram B Bista	M	SA	Farmer	Barabise-8, Bailtole	
32.	Chandra Badi	F	D	Landless	Barabise-8, Bailtole	

Annex 4. Details of Focus Group Discussions

SN	Place of FGD	Types	Participation		Total	Remarks
			Male	Female		
1.	Fulbari -1-Fulbari, Kailali	Women	0	7	7	
2.	Fulbari -2, J Gaun Kalilak, Kailali	SA	6	1	7	
3.	Fulbari-3, Purbilalitpur, Kailali	Tharu women				
4.	Fulbari-6, Sitabasti, Kailali	Mix	3	1	4	
5.	Fulbari-7, Khalde, Kailali	Janjati women	0	5	5	
6.	Fulbari-9, D gaun, Kailali	Dalit	4	1	5	
7.	Fulbari-9, Baibahatole, Kailali	women	0	6	6	
8.	Birpath-1, Badarkhet, Achham	Dalit women	0	3	3	
9.	Birpath-2, Tallodubke, Achham	SA Women		4	4	
10.	Birpath-3, Dubke, Achham	Dalit women	0	4	4	
11.	Birpath-4, Birahetole, Achham	Dalit	4	0	4	
12.	Birpath-4, Dhanekhet, Achham	Mix	7	0	7	
13.	Birpath-5, Gairitand, Achham	Mix	5	0	5	
14.	Barabise-1, Madiwada, Bajura	Women	0	4	4	
15.	Barabise-1, Selapakha, Bajura	Mix	12	0	12	
16.	Barabise-2, Bhandartole, Bajura	Women	0	4	4	
17.	Barabise-4, Sigada, Bajura	Dalit women	0	8	8	
18.	Barabise-6, Dungritola, Bajura	Dalit women	0	11	11	
19.	Barabise-6, Thapawada, Bajura	Women	0	7	7	
20.	Barabise-7, Deulisen, Bajura	Women	0	9	9	
21.	Barabise-9, Simalkot, Bajura	Mix	8	1	9	

Annex 5. Glossary of key terms

Access to food: Access to food refers to the ability of people to obtain food, by purchase, production, or by food distribution (Sahley, 2005).

Adaptation: Adaptation is adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which prepare people to moderate harmful effects or exploit beneficial opportunities (IPCC, 2007).

Ailani : Agricultural land that farmers regularly cultivate. The land is owned by the Government, but not registered in the name of households.

Availability: Availability of food refers to the sum of production (net of 12.5 percent allowance for feed, seed and wastage), net recorded imports and net depletion of government stocks.

Baali ghare: It is caste based informal institution in Nepal in which the Dalits provide occupational labor to higher caste. In turns, the higher caste gives certain amount of grains to them.

Chhaupadi: It is the gender based institution on which women live in cow shed during his menstruation cycle.

Chronic food insecurity: It is the situation in which people face inadequate diet caused by the inability of the people to acquire food. It affects households that persistently lack the ability either to buy enough food or to produce their own (World Bank, 1986).

Coping strategies: It is the short term adjustment that the people adopt in response to the crisis.

Dalit: Communities who by virtue of atrocities of caste-based discrimination and untouchability, are most backward in social, economic, educational, political, and religious fields, and have been deprived of human dignity and social justice (National Dalit Commission, 2010).

Damai: A term denoted to a group of low caste group who prepare clothes.

Deuda: A tradition of special songs and dance prevailing in western Nepal.

Dharma Bhakari: A system of religious grain-store, where people used to donated food grain regularly in the past, which was distributed to the people adversely affected by various crisis.

Entitlement: It refer to alternative sets of utilities derived from environmental goods and services over which social actors have legitimate effective command and which are instrumental in achieving wellbeing.

Exclusion: It is the prevention of individual, certain groups of community and people of area from livelihoods capital, PIP (Policy, Institution and Process) and strategy. It is due to the non-consideration of such people from access to and benefit from such livelihood elements.

Famine: There are two types of famine. Boom famine: massive expansion of economic activities but some sections of population lose their entitlement cause famine. Slump famines: General decline of economic condition as through drought and other hazards.

Food security: Food security exists when all people, at all times, have physical and economic access to enough safe and nutritious food to meet their dietary needs and food preferences for an active and healthy lifestyle (World Food Summit, 1996).

Food sovereignty: It is an alternative model for agriculture and agricultural trade in order to meet state obligation to respect, protect and fulfill the right to food (UN, 2010).

Food utilization: Food utilization is the ability of households, and all their members, to properly absorb food in order to benefit from its nutrient and energy content.

Gender: Gender refers to identities or roles assigned to *men and women* through early socialization, and how they affect relationships, rights, responsibilities, resources, and rewards. (USAID, 2007)

Globalization: Globalization is a complex process where consumers, farmers, workers, retailers and processors are all connected through the production and consumption of world commodities.

Good governance: Good governance implies an agency-structure interaction with regard to the rules of the game and institutions, which can't be considered purely the result of actor's aggregate preference (Hufty, 2011).

Haliya: *Haliya* was a ploughman and master relationships between low and high caste households in Far and Mid -Western hills and mountain of Nepal. The low caste groups worked for proprietor to pay interest of loan that he or his father or grandfather had borrowed from master.

Hunger: Hunger is usually understood to refer to the discomfort associated with lack of food (IFPRI, 2011).

Human security: The concept of human security states that individuals are co-equal with the state and state security is the means for individual and community security, not the end itself. According to UNDP Human Development Report (1994), the human security has two main aspects: safety from chronic threat such as hunger, disease and repressions as well as protection from sudden and harmful disruption in the pattern of daily life (UNDP, 1994:23).

Institutions: Institutions is considered as both rule of law (North, 1990) as well as regularized pattern of behaviors (Leach et al. 1999). Both formal and informal institutions are important.

Jagir: Land tenure institution of Nepal in which the Government used to assigned land to government employee as emoluments.

Janjati : The term Janjati refers to indigenous peoples or nationalities of Nepal who are outside the traditional Hindu *Varna* caste structure (USAID, 2007).

Kachhi house: House made by mud wall and thatched roof.

Kamaiya: *Kamayai* is a kind of relationship between *tharu* and high caste landlord in Terai of Far and Mid-Western region of Nepal. It is the informal institutions where the borrower works for the moneylender in the interest until he/she pays whole loan.

Kamalahari: In this informal institution, *Tharu* households who work as *Kamayai* send their child daughter to the home of patron from Maghi. Instead, the patron provides land for sharecropping to the Kamiya.

Kami: A term denoted to a group of low caste group who prepare iron tools and gold ornaments.

Khet: Irrigated land usually used to grow paddy.

Madhesi : Madhesi (**Madheshi**) are a group of people, of Indian origin, living in lower land of Nepal. (USAID, 2007)

Mahatsav: Mahotsav is an annual festival celebrated by people.

Malnutrition: Malnutrition refers more broadly to both under-nutrition (problems of deficiencies) and over-nutrition (consumption of too many calories in relation to requirements, with or without low intake of micronutrient-rich foods). Both conditions contribute to poor health.

Marginality: Marginality implies limitations (Kirkby and Moyo, 2001).

Marwadi : The Marwari (Marwadi) are an Indian ethnic group living in Nepal. They are mostly involved in trade and business in Nepal.

Pakho: Non-irrigated land usually used for growing dry crops such as maize and millets.

Price volatility: Price volatility measures the relative rate at which a price of a commodity varies from one period – day, month, or year – to another (IFPRI, 2011). If the price of a commodity moves up and down rapidly over a short time period, it has high volatility. If the price almost never changes, it has low volatility.

Price spike: A large, quick, temporary rise or fall in price (IFPRI, 2011).

Public land: The lands are common property resource which are mostly under the jurisdiction of local government as per the local self governance act 1999 (Jamarkattel and Baral, 2008). Public land includes barren unregistered land, public ponds, roadside, canal side, river bank and institutional land (LFP, 2003).

Rasad godam: It was the paddy store house in Nepal before 1990 BS. Government collected paddy as a tax and distributed to official, army and religious institutions.

Resilience: The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC, 2014).

Resource endowment: Endowments refer to the rights and resources that social actors have.

Right to food: The concept of the rights to food applies the principle of human rights declaration. It states that people have rights to claim to state to protect their rights on food.

Risk: Risk is often represented as probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard (IPCC, 2014).

Ropani: A measure of land in the hill region. It is equivalent to 5476 sq ft or 0.05 hectare.

Sarki: A term given to a group of low caste group who traditionally make shoes.

Social capital: Social capital as is the norms and networks of society that enable collective action (World Bank, 2007).

Social protection: It is public actions carried out by the state or private agencies that can enable people to deal more effectively with risk, vulnerability to crises or change and that help to tackle extreme and chronic poverty (DFID, 2006).

Starvation death: It refers to death directly attributable to the inability to acquire any food, rather than to the indirect consequences of enfeeblement (Dreze, 1993).

Sudra : It is group of households in lowest position among one of the Varnas in the traditional four-section division in the Hindu caste system.

Tharu: The *Tharu* people are an ethnic group indigenous to the Terai, the southern foothills of the Himalayas in Nepal and India.

Tole: It is small hamlet usually formed by similar caste in far-western region of Nepal.

Tourism: Tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes (UNWTO, 2007).

Transitory food insecurity: It is a temporary decline in a household's access to enough food. It results from instability in food prices, food production, or household incomes - and in its worst form it produces famine (World Bank, 1986).

Under-nutrition: It is the result of inadequate intake of food –in terms of either quantity or quality – or poor utilization of nutrients due to infections or other illnesses, or a combination of these two factors.

Undernourishment: It refers to the condition of people whose dietary energy consumption is continuously below a minimum dietary energy requirement for maintaining a healthy life and carrying out light physical activity (FAO/WFP, 2007)

Vulnerability: Degree to which people, property, resources, systems, and cultural, economic, environmental, and social activity is susceptible to harm, degradation, or destruction on being exposed to hostile agent or factor.

Annex 6. Conversion table

SN	Unit	Conversion	Remarks
1.	1 khet	4 pathi seed	
2.	4 pathi seed	2 rapani irrigated land	
3.	1 katta	50 kg	
4.	1 bigha	13.31 ropani	
5.	1 kattha	0.665 ropani	
6.	1 ropani	1.5 kattha	
7.	1 quintal	100 kg	
8.	1 Bigha	20 Kattha	
9.	1 Bigha	6,772.63 m ²	
10.	1 Bigha	72,900 sq.ft	
11.	1 Bigha	20 Biswa	
12.	1 Bigha	.677263 hectare	
13.	1 Bigha	1.6735 acre	
14.	1 Bigha	13.31 Ropani	
15.	1 Kattha	20 Dhur	
16.	1 Kattha	338.63 m ²	
17.	1 Kattha	3,645 sq.ft	
18.	1 Dhur	16.93 m ²	
19.	1 Dhur	182.25 sq.ft	
20.	1 Bigha	13.31 Ropani	
21.	1 Ropani	16 aana	
22.	1 Ropani	508.72 m ²	
23.	1 Ropani	5476 sq. ft	
24.	1 Ropani	508.83771 m ²	
25.	1 aana	4 paisa	
26.	1 aana	31.80 m ²	
27.	1 aana	342.25 sq.ft.)	
28.	1 paisa	4 daam	
29.	1 paisa	7.95 m ²)	
30.	1 Hectare	1.5 Bigha	
31.	1 Hectare	19.965 Ropani	
32.	1 Hectare	19.965 Ropani	

Annex 7. English and botanical name

SN	Local name	English name	Botanical name
1.	Dhan	Rice	<i>Oryza sativa</i> L.
2.	Gahu	Wheat	<i>Triticum aestivum</i> L.
3.	Makai	Maize	<i>Zea mays</i> L.
4.	Jau	Barley	<i>Hordeum vulgare</i>
5.	Kodo	Millet	<i>Paspalum scrobiculatum</i>
6.	Uwa	Naked Barley	<i>Hordeum nudum</i>
7.	Bajra	Pearl Millet	<i>Pennisetum typhoides</i>
8.	Kaguno	Foxtail Millet	<i>Setaria italica</i>
9.	Cheena	hog millet	<i>Panicum miliaceum</i>
10.	Mash	Black gram	<i>Vignamungo</i>
11.	Chana	Chickpea	<i>Cicer arietinum</i>
12.	Masuro	Lentil	<i>Lens culinaris</i>
13.	Matar	Peas	<i>Pisum sativum vararvense</i>
14.	Arhar	Red gram	<i>Cajanus cajan</i>
15.	Soyabean	Soyabean	<i>Glucine max</i>
16.	Rajma	Kidney bean	<i>Phaseolus vulgaris</i> L.
17.	Mitthe Phapar	Buckwheat	<i>Fagopyrum esculentum</i>
18.	Bodi	Cow Pea	<i>Vigna unguiculata</i>
19.	Gahat	Horse Gram	<i>Dolichos biflorus</i> L.
20.	Siyau	Apple	<i>Malus sylvestris</i>
21.	Angur	Grape	<i>Vitis vinifera</i>
22.	Amba	Guvava	<i>Psidium guajava</i>
23.	Katahal	Jackfruit	<i>Artocarpur heterophyllus</i>
24.	Litchi	Litchi	<i>Litchi chinensis</i>
25.	Aam	Mango	<i>Magnifera indica</i>
26.	Suntala	Orange	<i>Citrus reticulata</i>
27.	Naspati	Pear	<i>Pyrus communis</i>
28.	Kera	Banana	<i>Musa paradisiaca</i>
29.	Cauli	Cauliflower	<i>Brassica oleracea</i>
30.	Aaalu	Potato	<i>Solanum tuberosum</i>
31.	Lauki	Bottle gourd	<i>Lagenaria siceraria</i>
32.	Baigan	Brinjal	<i>Lolanum melongena</i>
33.	Bandgobi	Cabbage	<i>rassica oleracca</i> var,
34.	Tamatar	Tomato	<i>Lycopersicon esculentus</i>
35.	Piyaj	Onion	<i>Allium cepa</i>
36.	Marich	Black peppe	<i>Piper nigrum</i>
37.	Sukmel	Cardamom	<i>Elletaria cardamum</i>
38.	Besar	Turmeric	<i>Curumma Longa</i> L.
39.	Aduwa	Ginger	<i>ingiber officinale</i>
40.	Lasun	Garlic	<i>Allium sativum</i>
41.	Tori	mustard	<i>Brassica juncea</i>