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Remittances and livelihood strategies

A Case Study in Eastern Nepal

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Preface

With a per-capita gross national income of 540 US$[1] and a Human Development Index of 0.463[2] corresponding to rank 157 on the global scale, Nepal is one of the poorest countries in the world in material terms. Like many other countries in the group of the poorest, it strongly relies on the remittances of its citizens working abroad. These transfers provide a significant share of the foreign exchange, which is required for financing imports, sustain the livelihood of countless vulnerable households and by multifold multiplier effects stimulate the economy. The role, which international migration and the associated remittances play for Nepal's economic development has been acknowledged by the country's government of Nepal, as well as international organizations and important NGOs. At the same time, there are growing efforts to integrate out-migration and remittances inflows into Nepal's economic and social policies and into supportive development strategies of various international institutions; in particular, in this context, it is considered to use them as a tool for poverty reduction. Doing this in an appropriate way requires a solid information and data base, but although there have been considerable research activities in this area over the 00's, some major corner stones are still missing. In particular, previous research is mostly restricted by covering just some villages of Central, West and Far-Western Nepal; little attention has been paid to comparing migrants' with non-migrants' households; and a large share of the investigations is focused only on international migration to India. As such, the findings of past studies offer an incomplete foundation, and hence policy shaping calls for essential additional research results.

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[1] Figure for 2011, The World Bank on-line data base (http://data.worldbank.org/country/nepal#cp_wdi)

[2] Figure for 2012, UNDP, International Human Development Indicators (http://hdrstats.undp.org/en/countries/profiles/NPL.html

In her study on remittances and livelihood strategies, the author of this volume offers a most valuable contribution for that purpose as well as a bridging basis for further research. Her investigation explores the determinants of remittances receipts in Eastern Nepal, and the relationship between remittances and household expenditures pattern as well as investments. In addition, it provides new insights into the determinants of out-migration from rural areas. The empirical study is based on an in-depth socio-economic survey which the author conducted with great professional dedication among migrants' and non-migrants' households in remote areas of Eastern Nepal. The data gained were analyzed by descriptive and econometric methods.

The achieved results provide new insights into the migration-remittances-livelihood nexus, ranging from the profile of migrants' households as compared to those of non-migrants, over the causes of out-migration, up to the determinants and the use of remittances and their outcome for household welfare.

Although the results obtained may be applied to other countries only with great care, they still possess important international relevance and provide, in any case, valuable food for thought and follow-up research far beyond the case of Nepal.

With its specific emphases, this book is a valuable contribution to the *International Labour Migration Series* which assembles solid research work with explicit empirical foci and policy relevance.

Prof. Béatrice Knerr

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Abstract

Migration and remittances are issues of renewed interest for academics, international organizations, policy makers and nations. International migration is not a new phenomenon in Nepal; it has started some 200 years ago. Nepal has witnessed a large-scale out-migration flow of unskilled and semi-skilled labour to the South-East Asia and Middle East countries in the wake of oil boom since the 1970s, which is still ongoing. The role of migration and remittances for the economic development of the country and in reducing poverty has been acknowledged by the government of Nepal and international organizations (CBS, 2004; Lokshin, Bontch-Osmolovski and Glinskaya, 2010). The research presented in this volume investigates the determinants of remittances receipt in East Nepal as well as the relationship between remittances and household expenditures pattern, and between remittances and investments. It also provides additional insights into the determinants of out-migration. The analysis is based on a socio-economic survey of 542 migrants' and non-migrants' households in Eastern Nepal. Following the New Economics of Labour Migration (NELM), households were considered as the unit of analysis. Descriptive and econometric methods were used to achieve the study objectives. Econometric analysis includes logit and OLS regression methods. A logit model was used to identify the determinants of migration and remittances. The determinants of migration and remittances were based on the household characteristics, social capital, physical capital and regional characteristics. The OLS regression has been applied to assess the effect of remittances on various expenditure categories; mainly food, education and health. Furthermore, a logit model was applied to estimate the relationship between remittances and land, housing acquisition and business ownership.

The results show that migrants were predominantly male (94%) with an average age of 33 years. This result is consistent with the population census of Nepal (2001), which presents about 90% of international migrants as male. Almost 40% of migrants were unemployed and 30% were employed in the agriculture sector before migration, having an average of less than 10 years of education. This indicates that migrants were endowed with low level of human capital. Migrants' households were larger than their counterparts without migrants; they also enjoyed higher annual incomes and spent a larger share of their expenditures on food, healthcare and education than the non-migrants' households.

Households with more men aged "15-29 years", as well as "30-60 years", those having a "female head", being from "Hill Janajati ethnicity", having "family's previous international migration experiences", and having a house with a "semi-permanent structure" are more likely to send migrants abroad. Having a higher number of males aged "15-29 years" and "30-60 years" in the household, having a "female head", being from "Hill Janajati ethnicity", having an "extended family" and having a house with a "semi-permanent structure" increases the likelihood of receiving remittances.

The two main findings that emerge with the relationship between remittances and expenditure patterns are that remittances have significant positive impacts on food and health expenditures but no effects on educational expenditures, and hence were not significant for human capital formation (education). This result indicates that remittance income does influence household expenditure behaviour by providing additional financial support to meet their day-to-day needs. A considerable amount of remittances were used by the migrants' households to buy land and to either construct or renovate house. The results also suggest that remittances had no effects on business ownership.

Nepal's migrants have to compete with those from other labour deploying countries in the international labour market. Based on these findings, the study recommends government intervention with the implementation of specific program and polices, to upgrade the skills of workforce (semi-skilled and unskilled) on various subject matters and deploy workers according to their skills. The present research could not clarify the reason why remittances were not significant with educational expenditures. It is suggested that the high migration costs could be reduced by avoiding the use of brokers and by contacting directly to recruiting agencies. The study suggest that the use of remittances to be directed toward investments, mainly on industrial and commercial sectors. This can lead to economic growth with multiplier effects in the migrant sending region. This study was limited in analysing the impacts of remittances on household expenditures for a year. The use of remittances for various years can be helpful in presenting the impact of remittances at household level. In order to do so, extensive research on the use of remittances seems essential.

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Foreign exchange

Exchange rates conversion: 1 Euro= NRs.100 in 2009

Abbreviations

BOP	Balance of Payments
BOPM6	Balance of Payments Manual
CBS	Central Bureau of Statistics
DoFE	Department of Foreign Employment
FEPB	Foreign Employment Promotion Board
GCC	Gulf Cooperation Council
GDP	Gross Development Product
GNI	Gross National Income
HDI	Human Development Index
HH	Household
IMF	International Monetary Fund
IOM	International Organization for Migration
MFA	Multi Fibre Agreement
MoF	Ministry of Finance
MoAC	Ministry of Agriculture and Cooperatives
MoLTM	Ministry of Labour and Transport Management
MTOs	Money Transfer Operators
NELM	New Economics of Labour Migration
NIDS	Nepal Institute of Development Studies
NLSS	Nepal Living Standards Survey
NRB	Nepal Rastra Bank
NRs	Nepalese Rupees
UNDP	United Nations Development Program
VDC	Village Development Committees

1. Introduction

Labour migration is a pervasive feature of economic development (Mendola, 2010). Due to the effects of globalization and a huge amount of money remitted each year, the focus of research has shifted towards the dynamics of remittances within the framework of international migration (Campbell, 2010). In addition, remittances have become an interesting area of research for scholars to seek how these funds contribute to livelihood security in developing economies (Adams, 2005; de Haas, 2005; Adams and Cuecuecha, 2010).

Nepal, a landlocked country between India and China with a population of around 27 million (CBS, 2011), is a low-income country[1]. It has a per capita gross national income (GNI) of US$ 716 (MoF, 2012). Agriculture, which is a major source of livelihood, employs 73.9% of the labour force (CBS, 2009), and contributes to 37.4% of Gross Domestic Product (GDP) (MoF, 2012). International labour migration has become an increasingly major avenue for employment for many Nepalese. It offers wages and salaries that are several times higher than those prevailing in comparable domestic markets. It has also positioned Nepal to take advantage of the ongoing globalization of labour markets. Labour migration and remittances are important mainstay of Nepal's economy (Kollmair et al., 2006).

The history of foreign employment in Nepal dates back almost 200 years, when the British began recruiting men from the hillsides of Nepal, known as '*Gorkhas*' into the British armed forces (Lokshin, Bontch-Osmolovski and Glinskaya, 2010). Poverty, unemployment, declining natural resources, and more recently the decade-long political instability are the major causes of the

[1] World Bank (2012) classifies countries with a per capita GNI of US$1,005 and less as a low-income country.

high rate of labour migration from Nepal (Kollmair et al., 2006; Gartaula, 2009). With the integration into the global economy in the early 1990s, employment opportunities became available for Nepalese workers in the Middle East and South-East Asia (Hong Kong, Brunei, Japan, Korea and later Malaysia), which resulted in a massive out-migration of workers.

The population census of Nepal shows that the 1.92 million people (7.2% of the total population) are abroad (CBS, 2012). About 400,000 people, with an average of over 1,000 people per day, have left Nepal for work between May 2010 and May 2011 (World Bank, 2011). Nepalese migration is still on the rise, and remittances sent by migrants are one of the major sources of income for most of the rural households (Thieme, 2003). The amount of remittances sent to Nepal through official channels during 2011 reached US$ 4.2 billion, amounting to 22.3% of the GDP (World Bank, 2012a). This cash has an important income-smoothing effect to the receiving households (Thieme, 2006). Remittances enable people to invest but the extent to which they do so in practice crucially depends on the general development conditions in the labour-sending countries (de Haas, 2005). Empirical findings in West Nepal reveal that benefits of international migration are increased financial capital, better education of children, migration-specific knowledge, and increased social capital (Thieme and Wyss, 2005). However, migration to India is perceived seasonal and more often for livelihood security (Gill, 2003). In Mid-Western and Far-Western Nepal, migration to India has been considered generational and traditional to survive and cope with the food shortage (Bruslé, 2008).

A significant amount of research has been conducted in Nepal on the topic of migration and remittances considering micro and macro level impacts by local and international researchers. Moreover, existing research on migration and remittances is generally fragmentary, covering either only a few villages of

Central, West and Far-Western Nepal (Bhandari, 2004; Thieme and Wyss, 2005; Lokshin, Bontch-Osmolovski and Glinskaya, 2010; Massey, Axinn and Ghimire, 2007; Bohra and Massey, 2009; Bohra-Mishra and Massey, 2010; Bohra-Mishra, 2010; Maharjan, Bauer and Knerr, 2012a). There has been little attention paid on the determinants of the migration decision and remittances with comparison of migrants' and non-migrants' households. Some researchers have considered international migration only to India, and overlooked other countries of destination (Bhandari, 2004; Bohra and Massey, 2009). Bhandari (2004) studied the cause of migration as a relative deprivation with respect to landholdings in central Nepal. Thieme and Wyss (2005) revealed the process and role of institutional arrangement for organising migration and remittance transfer in West Nepal. A large body of literature has examined causes of migration to India, and considered social, economic and cultural factors in shaping their mobility from Nepal (Thieme, 2006; Sharma, 2007). Maharjan, Bauer and Knerr (2012b) examined the impact of male out-migration on the workload and status of the women left behind in rural Nepal. The findings of the past studies are inapplicable in the present research as the study area lies in Eastern Nepal bordering to India with different socio-economic conditions. This research aims to fill the existing research gap.

Nepal is supplying a large number of unskilled workers to the Gulf Cooperation Council (GCC)[2], East and South-East Asia. With the growing importance of remittances on the economy and national development, the government of Nepal has been focusing on foreign employment as a tool to reduce unemployment and poverty. This study aims to find out the determinants of remittances receipt and its impact on the left-behind families. Moreover, the study explores the socio-economic conditions, investments and

[2] GCC is a political and economic union of the Arab states, which includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and United Arab Emirates.

consumption patterns of migrants' and non-migrants' households. In particular, this research analyses the determinants of migration and remittances by using multilevel models to examine the influence of individual, household and regional characteristics.

This thesis is organized into eleven chapters. The introduction presented in this chapter is followed by the explanations of concepts and definitions used in the study. Chapter 3 describes the theoretical framework of the study. It basically adheres to NELM theory of migration. Chapter 4 illustrates the state of research, where current literature on the migration and remittances are discussed. Chapter 5 describes research hypotheses and conceptual framework of the study. Chapter 6 consists of a brief overview of the socio-economic framework and migration situation in Nepal. Chapter 7 focuses on the research method, data collection and data analysis including brief presentation on the study area and its selection. Chapter 8 presents and discusses the descriptive findings from a field survey that helps to build the foundation for analysis in the following chapters. The household characteristics of migrants' and non-migrants' households are presented and discussed. Chapter 9 deals with research findings on the determinants of migration and remittances. It also presents the results of the use of remittances. Chapter 10 deals with the discussion on the determinants of migration and remittances along with the impact of remittances on household expenditure patterns. Chapter 11 draws conclusions from the findings and presents policy recommendations.

2. Definitions and concepts

This chapter presents the definitions of terms used and key concepts applied in the study such as migration, remittances, family structure and caste or ethnicity.

Migration

Migration is “the movement of a person or a group of persons, either across an international border, or within a State. It is a population movement, encompassing any kind of movement of people, whatever its lengths, composition and causes; it includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes including family reunification” (IOM, 2011, p.62-63). The focus in the present research is on the country of origin or the home country, a country from which people leave to settle abroad permanently or temporarily (IOM, 2011). Migration in this study is defined as a move from one place to another place for a continuous period of at least six months.

International migration

“International migration is defined as the movement of persons who leave their country of origin, or the country of habitual residence, to establish themselves either permanently or temporarily in another country. An international frontier is therefore crossed” (IOM, 2011, p. 52). In this study, it refers to labour migrants who have moved to foreign countries in the year 2009 for more than six months. International labour migration is used interchangeably as a foreign employment in this study.

Temporary migration

According to Dustmann (2000, p.8), "a contract migration is a temporary migration where the migrant lives in the host country for a limited number of years, which is regulated by a contract." As Jones and Kittisuksathit (2003)

points out, “contract migration” comprises of individual migrant workers, unaccompanied by family, who are hired for a specific job for a fixed period of time abroad. Hence, this research follows Dustmann (2000) and Jones and Kittisuksathit (2003), who state that a temporary migrant is a migrant who returns to the household after a certain period.

Migrant

“The term migrant is usually understood to cover all cases where the decision to migrate is taken freely by the individual concerned for reasons of 'personal convenience' and without intervention of an external compelling factor. This term, therefore, applies to persons, and family members, moving to another country or region to better their material or social conditions and improve the prospect for themselves or their family” (IOM, 2011, p.61).

Knerr (1994) explains a migrant as a person who is on the move from one region (country i) to another region (country j) in an active sense and describes the situation of a person who has moved from one region (country i) to another region (country j) in a static sense. A migrant in this study is a person who has moved to a foreign country in the year 2009 for more than six months.

Migrant worker and labour migration

A migrant worker is a person who is to be engaged, is engaged or has been engaged in a remunerated activity in a state where he or she is not a national (UN Convention, 2003).

IOM defines international labour migration as a cross-border movement for purposes of employment in a foreign country (IOM, 2011). A migrant worker in the present study refers to a person who has made a cross-border movement for the purpose of work.

Migrant household

The Household Budget Survey of Nepal defines a household as all persons or a group who normally live and eat together and consider the living quarter or space occupied by them as their usual place of residence (NRB, 2008). The Nepal Living Standards Survey (CBS, 2011) defines household size as the number of members in a household.

The concept of a household in this study is similar to the one given by Koc and Onan (2004) according to which a household is extended to include not only those persons who are living together but also those who are presently residing abroad and whose principal commitments and obligations are to that household and who are expected to return to that household in the future after completion of migration. A migrant household in this study is a household having at least one migrant member abroad in the last twelve months preceding the conduction of the survey in the year 2009. The household is the major unit of analysis in this study.

Household head

The Household Budget Survey of Nepal defines "a household head as a main person in the household who generally stays in the house, and shoulders the responsibility of income and expenditure in running the household and makes decisions in all family related matters" (NRB, 2008, p.1). The head of a household is a person in the household acknowledged as head by other members (CBS, 2011a). In this study, household head refers to a person acknowledged as head by other members and is present at home to take over the responsibilities of household matters. They can be of any gender, male or female.

Dependents

Dependents are the people who depend on others in terms of the basic necessities of life (CBS, 2011a). They are maintained by others. In the present context, people of young ages (0-14) and old ages (60 years and above) are considered as dependents.

Nuclear family

Nuclear family in this study consists of a wife and husband with their children.

Extended family

Extended family in this study consists of parents and their children's families living under a single roof. In most of the extended family, it includes different generations in the family.

Caste/ethnicity in Nepal

With the promulgation of 'National Code in 1854'[3], the caste system has been a major determinant of people's identity, social status and life chances in Nepal. In this system everyone was organized in terms of their ritual purity into four broad *varnas*[4] of the classical Hindu caste system: the Brahman priests, the Kshatriya kings and warriors, the Vaisya traders and businessmen, and the Sudra peasants and labourers, with an additional group technically 'outside' the caste system because of their defiling occupations which rendered them 'untouchable' by others (Bennett, Dahal and Govindasamy, 2008). Nepal has abolished caste based discrimination in 1963, but it is still entrenched in the society. Following Bennett, Dahal and Govindasamy (2008), among seven major caste/ethnic groups, four major groups namely, Brahman/Chhetri, Newar, Janajati and Dalits were found in the study area (see Table A1). Brahman/Chhetri includes all *Tarai* (plain) and Hill

[3] National code is the prime law and unified code of the country.
[4] *Varna* refers to the categorization of the Hindu society by four castes.

Brahman/Chhetri caste groups available in the study area. The indigenous group consists of Newar and Janajati. Janajatis are further classified according to their region of origin either originating from *Tarai* (plain) or Hill. *Dalits* (oppressed) are categorized in terms of their region of origin. As they only have a small number of households belonging to this category, it is merged as Hill/Tarai Dalits into one group for analysis.

Education/Literacy

The Population Census of Nepal (CBS, 2001) defines literate as a person above 6 years of age who is able to read and write with understanding in any language. Education in this study is measured in terms of the number of years of schooling completed in educational institutions.

Occupation categories

Following the Household Budget Survey (NRB, 2008), the occupation category used in the study for household head and migrants are classified into agriculture (farmer), business/industry, service/teaching, student, wage earner, housewife and others, based on the total time spent at work. When a household head is involved in more than one job, the main occupation refers to the job at which the individual spends more time. If the time spent in two jobs is equal, then the main occupation refers to the job that yields higher income. Wage earner includes a person who secures wages from non-farm activities. The employment status is categorised as employed in agricultural sector, non-agricultural employment, and unemployed. The second category of non-agricultural employment is sub-divided into four groups, namely; service, business, wage earner and others. Student, housewife and people having no occupation are considered unemployed.

Business establishment/ownership

Business establishment/ownership includes all kinds of formal and informal trade and retailing activities owned or established by the surveyed households. It includes small industries[5] and cottage industries[6] as well.

Formal financial services

Ferrari, Jaffrin and Shrestha (2006) define the formal financial services as banks, finance companies, microfinance development banks and regional rural development banks, and financial NGOs and cooperatives as the formal sector.

Informal financial services

Ferrari, Jaffrin and Shrestha (2006) define the informal financial services as family members, friend, moneylender, *hundi, dikhuti* (informal institution similar to rotating savings and credit associations), shopkeepers, landlord and employers as informal sector.

House types in Nepal

The census of Nepal defines a house as a structure, which the household is using as a shelter and is closed or surrounded by walls or curtain made of any types of materials such as mud, wood planks, bricks, stone, concrete etc. In the population census, houses are divided into four categories depending upon the types of construction materials used in walls and roofs of the residential house (CBS, 2001).

a) *A permanent (Pakki)* house is one with both walls and roof made of permanent construction materials like cement, bonded brick, concrete, stones, slate etc.

[5] The Industrial Enterprises Act (1992) of Nepal defines 'small industries' as industries with a fixed asset of up to an amount of thirty million Nepalese rupees.

[6] The Industrial Enterprises Act (1992) of Nepal defines cottage industries as a traditional industries utilizing specific skill or local raw materials and resourced and labour intensive and related with national tradition, art and cultures.

b) *A semi-permanent (Semi-pakki)* is one where either the walls or the roof is constructed with permanent materials and the other is constructed with temporary materials.

c) *A temporary (Kachchi)* is one with both the walls and roof are built with temporary materials like wooden flakes, mud, straw, unbaked bricks, bamboo, plastics etc.

d) *Other structure* includes a residential unit that is built with non-durable materials like straw, plastic sheets, tent etc.

Manpower agency

'Manpower Agency' refers to a private company, which is established formally in Nepal under the law to recruit migrant workers to various destinations for work.

Broker or *Dalal*[7]

Broker or *Dalal* in this study refers to a person who works as a middleman to facilitate migration and acts as a bridge between prospective migrant and recruitment (Manpower) agency.

Remittances

According to International Organization for Migration (IOM) remittances are "monies earned or acquired by non-nationals that are transferred back to their country of origin" (IOM, 2011, p.83). In this research, remittances include money received by the households from the migrant members or relatives.

Hundi system

Hundi[8] is an informal way of money transfer especially found in South Asian countries. *Hundi* is derived from a Sanskrit word which means collection. Kashyap (2002) defines it as a bill of exchange that was used to make

[7] *Dalal* is Nepalese word which refers to a broker or a middleman.
[8] *Hundi* is a bill of exchange.

payments and almost served as an alternative currency. Gurung (2004) describes two steps in the *Hundi* system:

1. A person wanting to remit money to their family or relatives must pay the amount (in a foreign exchange currency) to a *Hundi whallah* (a person who is involved in *Hundi*).

2. The recipient collects this money from the *Hundi whallah's* agent in Nepal. The money is received in Nepali rupees. As an incentive for people to use the *Hundi* system, the *Hundi whallah* offers a more favourable exchange rate than the banks in Nepal. The money can be delivered within two or three days.

The *Hundi* system operates informally with little documentation. It is based on trust and good faith between the senders and *Hundi whallah*. About 80% of remittances to Nepal from countries other than India come through the *Hundi* system.

3. Theoretical framework

Many researchers have offered comprehensive discussions on migration theories (Massey et al., 1993; Jennissen, 2007; de Haas, 2010). In this chapter, relevant theories and concepts, namely, New Economics of Labour Migration (NELM), as well as theories related to social networks and human capital are explained as a background to establish the research hypotheses of this study.

3.1 New Economics of Labour Migration

The New Economics of Labour Migration (NELM) considers the household as a social entity, which takes migration related decisions jointly (Stark and Bloom, 1985; Stark, 1991), considering its wellbeing as a whole. It diversifies its labour resources to reduce income risk and/or to counterbalance failures of imperfect capital markets by sending one or more household members away for work (Stark and Lehvari, 1982). Migrants provide income insurance to the origin households in the form of remittances. According to this theory, wage differential is not a necessary condition to migrate (Massey et al., 1993). It considers remittances as the most essential motives for migrating. This theory fits to the Nepalese context where labour migration to the Middle-East or South-East Asian countries is usually for several months, or years by one or more members of the household based on an implicit household contract.

The main theories on remittances fall into three broad categories: altruism, self-interest and inter-temporal contractual agreement. The third category includes all kinds of contractual arrangements between the migrant and the household left behind, such as insurance and risk sharing, exchange, and implicit loan agreements (Thankom and Hulya, 2011). Lucas and Stark pointed three motives for remitting: pure altruism, tempered altruism or enlightened self-interest and pure self-interest (Lucas and Stark, 1985). Remittances are sent back to the family left behind due to altruistic feelings of migrant for the welfare of the family. In altruism, migrant cares about shocks,

risk and household income condition, and then send remittances accordingly. In self-interest, migrants mainly send remittances with the aspiration to inherit and invest on assets in migrants sending area by ensuring their investments are taken care by the left behind member. In tempered altruism, migrants and the family at home mutually benefit from migration, through some kind of implicit contractual agreement (Hagen-Zanker and Siegel, 2007). Usually, remittances are used to meet household basic necessities, mostly when migration is merely a survival strategy. After household maintenance, remittances are invested on land, house construction or business enterprises, which mainly depend on the need of receiving households to diversify their income.

Also, Nepal lacks well-functioning credit markets in both urban and rural areas. Micro-level studies on access to formal financial services in Nepal (Ferrari, Jaffrin and Shrestha, 2006) reveal that 28% of the households rely on informal financial services and 20% are financially excluded without any service from the formal or informal sector. Although credit institutions are available, poor people lack access to them, because they cannot offer a collateral and cannot afford the transaction cost. Under such conditions, they rely on migration, where migrants could send remittances to loosen production constraints and provide capital for other purposes. In absence of safety nets, households have to finance their healthcare themselves. Access to health facilities in Nepal depends on income (Gartaula, Visser and Niehof, 2011). In absence of a health insurance, poorer households send migrants for work elsewhere to provide remittances, if a family member is sick. The domestic non-agricultural employment opportunities are limited and there is a mismatch between a growing labour force and employment creation (Shrestha, 2008). Remittances, in NELM, are considered to have a positive impact on the economy of sending countries as households overcome

production and investment constraints with the help of migration and remittances (Taylor, 1999).

3.2 Network theory

Several researchers have acknowledged that social networks can be a crucial determinant of migration (Bohra and Massey, 2009; Gray, 2009; Massey and Esponia, 1997; Munshi, 2003; Mora and Taylor, 2006; van Dalen, Groenewold and Schoorl, 2005). Network theory of migration focuses on the vital role of personal relations between migrants and non-migrants to foster migration phenomena (Boyd, 1989; de Haas, 2008). Migrant networks are sets of interpersonal ties that connect migrants, former migrants, and non-migrants in origin and destination areas through ties of kinship, friendship and shared community origin. These networks increase the likelihood of international movement because they lower the costs and risks of movement and increase the expected net returns to migration. Network connections are a form of social capital that people can draw upon to gain access to foreign employment. Once the number of migrants reaches a critical threshold, the expansion of networks reduces the costs and risks of movement, which causes the probability of migration to rise, which in turn causes additional movement, further expanding the networks (Massey et al., 1993; 448-449). Social capital is defined "as the sum of the resources, actual or virtual that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu and Wacquant, 1992 as cited in Massey and Espinosa, 1997). The social tie to someone with current or previous international migration offers a source of social capital. Several empirical studies have shown that effects of social capital differ from people to people and location settings (Curran, Garip, Chung and Tangchonlatip, 2005; Fussell and Massey, 2004), which may be shaped by gender relations and sending or receiving community contexts (Garip, 2008).

3.3 Human capital theory

T.W. Schultz (1961) is considered as the first economist to put forward the concept of human capital. He aggregates the acquired skills, abilities, knowledge, and qualifications possessed by an individual under the term 'human capital' (Schultz, 1961 as cited in Zhao, 2008). The amount of human capital determines the labour market position of individual workers, which in turn determines their employment status and income level (Jennissen, 2007). According to Becker (1962), human capital accumulates through education and experience. Human capital framework sees migration as an investment decision, and a result of rational cost-benefit analysis (Sjaastad, 1962). With regards to human capital theory of migration, the prospective migrants choose the destinations that are maximizing the net present value of their expected future income, less various direct and indirect costs of migration (Borjas, 1990; Massey et al., 1993). Differences in the human capital among migrants can lead to diverse returns on their migration investments. Migrants are selected depending on the specific type of labour demand in migrant receiving areas, which also depends on the specific skills and educational background they possess (de Haas, 2008). According to human capital migration theory, factors such as the education level, skills, age, risk taking capacity, capacity to face new situations, entrepreneurship and ethnicity drive migrants' self-selection (Taylor and Martin, 2001).

4. State of research

This chapter presents the state of research on determinants and impacts of migration and remittances. Individual, household and community characteristics can be the major components that drive out-migration. Remittances, the earning of migrants sent back to the families, can be used for various purposes. It can be used by the households for daily survival or for asset accumulation. The household expenditure patterns of migrants' households can vary from their counterpart, non-migrants' households.

4.1 Determinants of migration

Gőrlich and Trebesch (2006) investigated the determinants of migration from Moldova. The data for the study came from a household survey conducted by Centre for Sociological Investigations and Marketing (CBS-AXA), in October to November 2004, covering 3,668 households. The study estimated general migration decision using a logit model. Household characteristics, poverty perception variables, network variable and community variables were included in the model. The findings of the study confirmed that the network effect, migration experience and poverty had a positive association with out-migration in Moldova.

Mora and Taylor (2006) investigated the selectivity of migration for two distinct migrant destinations (internal and international). The data for the study came from the Mexican National Rural Household Survey (*Encuesta Nacional a Hogares Rurales de Mexico*, or ENHRUM), a nationally representative sample of rural households surveyed in 2003. The survey included 7,298 individuals from 1,782 households. It provides detailed data on assets, socio-demographic characteristics, production, income sources and migration. The dependent variable was the migrant destinations (internal and international), and a multinomial logit model was used to find out the determinants of out-migration. Individual characteristics, family

characteristics and community characteristics were considered to influence a migration decision. Individual characteristics included years of completed schooling, age, gender, status in household and marital status. Family characteristics included physical capital in the form of land, livestock holdings and equipment (proxied by number of tractors owned by the households) and human capital of family members, migration networks and an index of family wealth. Community characteristics included frequency of transport, accessibility, and presence of local nonfarm enterprises. Age, sex, marital status, migration networks, and accessibility were positively associated with international migration. Household heads' schooling was negatively associated with international migration of household head. It was explained that household heads' schooling increased the productivity of labour in family production activities, thereby raising the opportunity cost of migration.

Bohra and Massey (2009) examined a factor that predicts internal and international migration from Chitwan, Nepal. The study used longitudinal data from the Chitwan Valley Family Study (CVFS) conducted in 1996 in South Central region of Nepal. The survey contained 1,773 households and 5,271 individuals between the ages of 15 and 59. Life history calendars were compiled to create accurate annual data on place of residence, military service, schooling, age, ethnicity, employment and marital status. A multinomial logistic regression model was used as the outcome variables had three mutually exclusive destinations versus staying at home. Variables incorporated in the model to predict out-migration (internal and international) were human capital, social capital, physical capital and neighbourhood socioeconomic conditions, while demographic variables were used as control variables. Social capital, human capital and ethnicity variables appeared statistically significant with out-migration. The study also revealed that overwhelming migration from Chitwan was to India.

Gray (2009) examined the factors of out-migration from a rural area in the Southern Ecuadorian Andes to three competing areas: local, internal and international destinations. The cross-sectional data for the study was collected in 2006 from 397 households from 36 rural communities in Loja province, a region of rapid out-migration. Multinomial discrete-time event history model was used to predict out-migration. Demographic characteristics, human capital, social capital, physical capital, access to land, land quality, rainfall harvest fluctuation and control variables were incorporated in the model to predict out-migration. Social capital, in the form of previous migration experience and current international migration experience, was statistically significant with international migration. Likewise, human capital variable was statistically significant with international migration. The results revealed that international migration was mostly from land-rich households, whereas local and internal migration was most likely from land-poor households. It revealed that determinants of out-migration from the study area differ strongly by destination types. He concluded that international migration from rural Ecuador was highly influenced by human capital and least influenced by agrarian and environmental conditions. Following researchers (Mora and Taylor, 2006; Bohra and Massey, 2009; Gray, 2009), international migration in this study was modelled as a function of household variables, social network, physical capital and regional characteristics.

4.2 Determinants of remittances

Studies on determinants of remittance transfers are based on the data that include either by surveying migrants in the destination country (Amuedo-Dorantes and Pozo, 2006) or by surveying the remittance receiving households in origin countries (Schrieder and Knerr, 2000; Gubert, 2002). Osili (2004) used a matched sample by surveying migrants at their destination and receiving households at their origin.

Schrieder and Knerr (2000) conducted a study in the North-West and West provinces of Cameroon. The objective of the study was to analyse the potential of migration with remittance strategies in stabilising the income of rural households. The microeconomic survey covered 385 adult individuals ages 15 and older from 140 households in a relatively remote rural setting. The survey captured information on demographic, income, expenditure, financial transactions and consumption situation of the survey sample. The individual household members were considered as the basis of analysis. Two econometric models were used namely, probit to analyse access to remittances and tobit to see the amount of remittances received per respondent. Individual and human capital characteristics, household member's labour and asset endowment and liquidity characteristics were included in the model. Age was statistically and positively significant to the access to internal remittances, at a decreasing rate. Wealth variables were found significant to access to remittances, suggesting that wealthier household members were more likely to receive more remittances. The study concluded that remittances do not benefit the poor households when the potential remitter does not expect any sizeable inheritance.

Amuedo-Dorantes and Pozo (2006) studied the likelihood of household remittance receipts in the Dominican Republic. The data for the study came from Latin American Migration Project (LAMP), which was conducted in seven communities in the Dominican Republic from 1999 to 2001. The econometric model used in the study was simultaneous probit model. The household remittance receipt was modelled as a function of the personal household head characteristics, household characteristics and regional characteristics. The study reveals that the female-headed households were 28% more likely to receive international remittances than male-headed households. Business ownership raised likelihood of receiving international remittances by 20% points. Remittance receipt was 9% points less likely

among households residing in urban areas. The study concludes that business ownership attracts remittances. The authors explain that the existence of a family business may signal to the availability of good investment opportunities at the home country. Alternatively, remittances may respond to a bequest motive.

Campbell (2010) examined the remittance behaviour of internal labour migrants of Botswana. The data for the study was obtained by the author from a nationally representative survey conducted in June-August 2004 as a part of the Southern African Migration Project (SAMP). A stratified and cluster sampling method was used to collect data, which covered 1,160 households with a total of 6,744 persons. The logistic regression method was applied to model likelihood of remittance receipt by the households. Migrants' visit to household and household member's visit to migrants were statistically significant to remittance receipt. Household heads with only primary education or no education were twice more likely to receive remittance than their more educated counterparts. Households who borrowed money were about twice more likely to receive remittances than those that did not borrow money. The likelihood of receiving remittances from internal migrants was four times greater than that of international migrants. The study concludes that a low-income family may improve their living standards if one or more family members migrate.

Pfau and Giang (2010) examined the characteristics of remittances recipients using Vietnam living standards surveys for the years 1992-93, 1997-98, 2002 and 2004. The logistic regression analysis was applied to explain determinants of remittances receipt. The explanatory variables in the model involved household characteristics and regional characteristics. The study concluded that international remittances were received more likely by the elderly, female-headed household and unemployed household head.

4.3 Socio-economic impact of migration and remittances in origin countries

Labour migration has been envisaged by households to augment income and to improve economic well-being of household members in origin communities (Semynov and Gorodzeisky, 2008). Remittances are the central and most tangible link between migration and development (Ratha et al., 2011; Mendola, 2010). The surge of studies on migration and development in migrant sending area has received renewed interest by policy makers and researchers since early 2000 (Kapur, 2003; Ratha, 2003; Adams and Cuecuecha; de Haas, 2010). Remittance receipts are associated with the reduction in poverty, increased household resources devoted to investment, and improved health and education outcomes (Ratha et al., 2011).

4.3.1 Impact on poverty

Remittance can help to reduce the poverty level by raising the income of poor recipient households. Adams (2004), in a micro-level study of Guatemala, compared the poverty headcount, poverty gap and squared poverty gap of households that received remittances from international and/or internal migrants, with those who did not receive remittance income. The head count poverty index measures the percent of the population living below the poverty line, which ignores the depth of poverty. The poverty gap index measures (in percentage terms) how far the average expenditures of the poor fall short of the national poverty line. The squared poverty gap index indicates the severity of poverty. The study used data from a national survey done by the *Instituto Nacional de Estadistica* in Guatemala during the period of July to December 2000, and included 7,276 households. The survey had detailed information on income, expenditure, education, financial assets, household enterprises and remittances. The size of the poverty reduction depends on how poverty is measured. According to the poverty head count ratio, including internal remittances in household expenditure reduced the level of poverty by 0.6% and including international remittances in such expenditure actually increased

the level of poverty by 1.1%. The squared poverty gap fell by 21.1% when internal remittances were included in households' income, and fell by 19.8% when international remittances were included in such income. This was true because households from lowest deciles had received 50-60% of their total income from remittances. The study confirmed that both internal and international remittances reduced poverty, where remittances had a quantitatively larger effect on the severity of poverty rather than on the poverty rate.

Adams and Page (2005) examined the impact of migration and remittances on poverty. The cross-country study consisted of information on international migration, remittances, inequality and poverty for 71 "low income and middle income" developing countries[9]. The study used ordinary least square (OLS) methods with instrumental variables. It was found that a 10% increase in the share of international migrants in a labour sending country would lead to a 2.1% decline in the share of a people living on less than US$1[10] per person per day. Likewise, 10% increase in per capita official international remittances would lead to 3.5% decline in the share of a people living in poverty. The study confirmed that both internal and international migration and remittances significantly reduced the level, depth and severity of poverty in developing countries.

The out-migration and remittances have been instrumental in poverty reduction and improving the living standard of people in Nepal (Seddon, 1999; Shrestha, 2004; Lokhsin, Bontch-Osmolovski and Glinskaya, 2010). Lokshin, Bontch-Osmolovski and Glinskaya (2010) studied impact of work-related migration on poverty in Nepal. The study was based on the data from

[9] World Bank (2012) classifies low-income countries are those with 2010 GNI per capita $1,005 or less; and middle-income countries are those with 2010 GNI per capita of $1,006-$12,275.

[10] World Bank measures poverty by establishing a dollar-valued poverty line ($1.25 person per day or $2 person per day) for international comparison. It reflects the proportion of people in developing countries whose income is less than $1/day or $2/day.

Nepal Living Standard Surveys of 1996 (NLSS-I) and 2004 (NLSS-II), conducted by the Nepal Central Bureau of Statistics. They estimated a model of household migration decisions jointly with the consumption equations by the methods of full information maximum likelihood (FIML) approach. The findings of the study revealed that almost 20% of the decline in poverty in Nepal between 1995 and 2004 was due to increased work-related migration and remittances inflows. They further point out that in absence of migration, the poverty rate in Nepal would have increased from the currently observed 30.0% to 33.6%. The study concluded that the strategy for economic growth and poverty reduction in Nepal should consider aspects of the dynamics of internal and international migration. Another qualitative study done by Nepal Living Standard Survey (CBS, 2004) found that poverty was reduced by 11% in Nepal between 1996 and 2003. The major contributors in reducing poverty during that time period were remittances, increase in agricultural wage and decline in dependency ratio. One can conclude from the empirical evidence the vibrant role of remittances in reducing poverty.

In contrast, Rahman (2000) concludes a negative role of migration on the sending economies, taking a case of rural Bangladesh. He examined developmental consequences of international labour migration by interviewing 60 returnees from Singapore. The study found that more than two-thirds of the migration costs from each worker were piped out from both the village and national economy to the foreign recruitment agents who were based in Singapore. The majority of returnees (72%) had borrowed money from the traditional moneylenders to cover migration costs. It also revealed that these local moneylenders were benefiting mostly as the returnee had to pay on average 52.41% of their accumulated savings on loan repayment for migration costs. The study confirmed that the contract migrant returnees from Singapore did not fuel the local economy with remittances and skill

acquisition, rather labour migration drained local resources that retard the development (Rahman, 2000).

4.3.2 Impact on education

Remittances can augment households' income, thus increasing the ability of households to cover the cost of education. Several empirical studies illustrate positive effects of remittances on education outcomes (Cox-Edwards and Ureta, 2003; Hanson and Woodruff, 2003; Thieme and Wyss, 2005; Acosta, 2006; Mansuri, 2006; Yang, 2008; Calero, Bedi and Sparrow, 2009). Using a 1997 household survey from El Salvador, Cox-Edwards and Ureta (2003) examined the effect of remittance income on schooling choices, which revealed that receiving remittances lowers the likelihood of leaving school among individuals aged 6-24 years old in El Salvador. They also found that households receiving remittances spend more at the margin on education. With the comparison of income from remittances and income from other sources, the authors found that remittance income has a much stronger positive impact on school retention rates than income from other sources. It was found that in urban areas of El Salvador, the average level of remittances lowered the risk that a child will drop out of elementary school by 54%. The study confirmed a positive role of remittances on education.

Hanson and Woodruff (2003) in an empirical study from Mexico found that after controlling for observable characteristics and instrumenting for migration, the effect of remittances on child schooling in rural communities was positive for girls in the households with relatively uneducated mothers. Households with more educated mothers, belonging to migrant households, did not seem to have an effect on child's schooling. The study revealed that gains in schooling were greater for girls in the age group of 13-15. It also confirmed that overall children in migrant sending households completed significantly more years of schooling.

Thieme and Wyss (2005) studied the migration process in West Nepal. Their results were based on a case study conducted in 2002. The study used descriptive statistics and concluded that migration and remittances had a positive effect on the education of children. The authors explained the long-term investment in human capital would enhanced the children's chances of getting a better-paid job in Nepal or abroad in future, which would help to secure the retirement of the parents.

Acosta (2006) examined the economic effects of international remittances on households' spending decisions. The data for the study came from an El Salvador survey and used OLS techniques with instrumental variables approach. Migration networks and household migration history were used as instruments for remittances. This study found that remittances in El Salvador are helpful only for girls (11-17 years old) and young boys (11-14 years old), but not for older boys (15-17 years old). The author concluded that the remittances were found to reduce child labour and adult female labour supply.

Mansuri (2006) in an empirical study in Pakistan found that remittances had a positive and significant effect on a child's education. The data for the study came from the Pakistan Rural Household Survey (PRHS) 2001-02, covering 2,531 rural households in 143 villages in 16 districts across all 4 provinces. The study found that children in migrants' households were more likely to stay in school and accumulate more years of schooling in comparison to their non-migrants' households counterparts in the same village. The school enrolment rates increased in rural Pakistan by 54% for girls and by 7% for boys, than those of non-remittances receiving households. Likewise, girls in migrants' households had about 1.5 more years of schooling compared to the non- migrants' households in the same village, while boys had about a grade more. The children from migrants' households were also found less likely to

be involved in economic work and reported working for substantially fewer hours.

Yang (2008) studied the impact of remittances using a household panel data from the Philippines. The study found that the positive exchange rate shocks during the 1997 Asian crisis led to a significant increase in household remittances from overseas. It also found that the households experiencing more favourable exchange rate shocks raised their non-consumption disbursements in educational expenditures. It also revealed the probability of school attendance rises and child labour decreases as the value of remittances increases due to appreciation of a migrant's currency against the Philippine peso. The study concluded that the positive exchange rate shocks during the 1997 Asian crisis led to enhanced human capital accumulation.

Calero, Bedi and Sparrow (2009) examined the relationship between remittances and human capital investment, focusing on outcomes such as school enrolment and child labour. The study used data from a nationally representative living standard household survey for Ecuador from 2005 to 2006 and used instrumental variable (IV) probit model. The probability of being enrolled in a school and participating in income generating activities were modelled as a function of remittance transfer, individual and household characteristics, regional labour markets and economic condition. The study revealed that recipient households had spent 89.4% of remittances for education, food, health and rent; 3.1% for real estate; 1.2% for business investments; 2.9% for loan repayment and remaining for other purposes. The result confirmed that remittances had increased school enrolment and decreased incidences of child labour, especially for girls in rural Ecuador.

Cattaneo (2010) examined the relationship effect of remittances on education expenditure. An Engel curve framework was employed to analyse household consumer behaviour. The data for the study came from Albania Living

Standard Measurement Survey (ALSMS) conducted between April and September 2002. 62% of total households reported positive spending on education. This study accounts for the censored nature of the education expenditure using Heckman two-step as well a semiparametric model for sample selection. It was found that household income had a positive and well-determined impact on education expenditure.

In contrast, McKenzie (2006) found that migration lowered the educational attainment of children, which he explains due to parental absence as well as with lower future return from schooling to children who intend to migrate. Mckenzie and Rapoport (2010) found that the likelihood of children completing high school in migrants' households was reduced by 13-15%. The possible explanation for this result might be due to the large share of Mexican migration to the United States for unskilled work and opportunity cost of gaining an additional year of schooling was small when domestic employment opportunities were limited. The effect of remittances on education is generally inconclusive, and seems to vary from country to country.

4.3.3 Impact on health

Remittances can increase access to the health services of individuals who receive them. Migration and remittances may help to improve child health outcomes, lowering infant mortality and increasing birth weights. Studies that find a positive relation between remittances and health outcomes include Hildebrant and McKenzie (2005), Lopez-Cordoba, (2006), and Ponce, Olivé and Onofa (2011).

Hildebrant and McKenzie (2005) found that remittances from US migration to Mexico had helped in improving child health outcomes, such as lowering infant mortality rates and increasing birth weights. The two factors responsible for improvement in health outcomes were household with higher income and those with increased health knowledge among the mothers. On

the other hand, preventive health care in terms of breastfeeding, visits to doctors and vaccinations were less likely for migrants' children. Lopez-Cordoba (2006), examined the relationship between remittances and child health in Mexico using data at the municipal level. He confirmed that 1% increase in the share of remittance recipient households reduced the infant mortality by 1.2 per thousand.

Ponce, Olivé and Onofa (2011) evaluated the impact of remittances on health outcomes in Ecuador. Data for the study was drawn from the Living Standard Measurement Survey (LSMS) of 2006, collected by the National Office of Statistics of Ecuador (INEC). The study had used OLS with instrumental variables techniques. It was found that remittances had an impact on heath expenditures and some preventive issues such as de-worming and vaccination. Further, it was found that remittances had significant effects on medicine expenditures when people were sick. The study confirmed that remittances were used for both preventive and emergency situations.

4.3.4 Impact on business ownership

Remittance is expected to help smooth household consumption and make investments in the productive activities like small enterprises. Jones and Kittisuksathit (2003) assessed the impact of international migration on quality of life in Penn district in Thailand. The survey data was collected in December 1997- February 1998, covering 719 households. The households were categorised into returned migrant households, current migrant households and non-migrant households. A qualitative study found that 17% of the returned migrant households, compared with 4% of the current migrant households and 10% of the non-migrant households were found having businesses. A high proportion (58%) of businesses in returned migrant households were established during 1982-90, which reflected the so-called golden era of Thai labour migration to the Middle East in the late 1970s and

early 1980s. The study concluded that a significant minority of returned migrants had used their foreign earnings for longer-term income generation.

Amuedo-Dorantes and Pozo (2006) investigated the links between household remittance receipt and business ownership in the Dominican Republic. The data for the study came from Latin American Migration Project (LAMP), which is an extension of Mexican Migration Project (MMP). The data was derived from surveys conducted in seven communities in the Dominican Republic from 1999 to 2001. The study used a simultaneous probit model. The business ownership was modelled as a function of the receipt of money transfers from abroad, personal household head characteristics, household characteristics and regional characteristics. Households receiving remittances reduced the likelihood of owing a business by 4%. The possible explanation for this was that while remittances may loosen the budget constraints' faced by some households when it comes to business ownership, these monetary inflows also induce an income effect that raises the reservation wages of those household members. As such, remittances may induce purchase of leisure and of other goods and services, including housing and education. It concluded that remittances do not loosen capital constraints faced by the households with regards to business ownership in the Dominican Republic.

Kilic et al. (2009) assessed the impact of past migration experience of Albanian households on non-farm business ownership through instrument variables regression techniques. The data for the study came from the 2005 Albania Living Standard Measurement Survey. One additional year in Greece increases the probability of household business ownership by 6%, a similar experience in Italy or farther migrant destination raises the probability by over 25%. This may reflect higher earning potentials in other countries as well as difference in the skill acquisition and human capital accumulation in the different migrant receiving countries. The study concluded that past

household migration experience exerts a positive relationship on the likelihood of owing a non-farm business.

4.3.5 Impact on housing

Migrant families allocate their savings toward investment goals, which include the purchase of land or acquisition of a home or a small business as shown by Massey in the case of Mexico (Massey et al., 1987 cited in Osili, 2004). Mexican migration to the United States is another important source of case study material on migrants and housing investment in the country of origin (Osili, 2004). Adams (1991) using data from international migration from rural Egypt studied the relationship between remittances and housing investment. About 54% of remittance income was spent on house construction or renovation. Migrant households tend to view remittance income as an opportunity to tackle one of their immediate concerns, replacing their crowded and traditional mud-bricks houses with modern red brick buildings. Additionally, the process of building houses provides substantial employment opportunities to the local people in the village.

Osili (2004) studied the relationship of economic ties that migrants maintain in their communities of origin, taking the example of US-Nigeria migrants. The survey was conducted in two stages, which included matched sample of migrants and their households, in both the U.S. and Nigeria. The first stage of survey consisted of 112 Nigerian migrant households in Chicago and contained detailed information on demographic variables, migration experience, remittances and assets in the Unites States and Nigeria. The second stage of data collection was composed of 61 home families in Nigeria using the names and address supplied by the initial U.S. sample. This matched sample presented a new opportunity to examine the impact of home households' characteristics (demographic variables, remittances, assets and shocks) on migrants' investment pattern. The objective of the study was to

find the migrant's decision to invest in housing in the community of origin during the period of work and residence abroad. A probit and tobit model was used to investigate the likelihood of housing investment and share of annual household income on housing investments in their hometown. Factors such as migrant's characteristics, home household characteristics and community characteristics were used in the econometric model. The author concluded that a large proportion of remittance income in Nigeria was spent on housing. It was found that older migrants and those with higher incomes were more likely to invest in housing. At the mean, a 10% increase in migrants' income increases the probability of investing in housing by 3% points. These remittance expenditures on housing represent an important form of local investment, where local people can benefit from the employment opportunities and increased demand for local construction materials. The distance to the state capital was statistically significant with negative sign, showing likelihood of investment on housing decreases in the communities away from the state capital. However, the empirical results supports that migrant tends not to invest in less-developed communities, other things being equal.

4.3.6 Impact on agriculture

Lucas (1987) in an empirical study in South Africa found that emigration initially decreased local agricultural production, consistent with a loss in labour supply, but later increased crop productivity and cattle accumulation in the long run. Adams (1998) in an empirical study found that international remittances raised the propensity to acquire irrigated land in rural Pakistan. He explains that the propensity to acquire land was greater through remittances. Qualitative studies indicate a large range of potential impacts of

out-migration and remittances on agriculture, with intensification of commercial agriculture (de Haas, 2006) in Morocco.

Mendola (2008) examined the impact of migration on technology adoption. The study used cross-sectional data conducted by the Institute of Development Studies (Sussex, UK) in 1994/95 from 5,062 households from rural Bangladesh. Econometric models applied in the study were OLS for technology adoption and multinomial logit model for determinants of migration. The author had considered heterogeneity of migration by differentiating between temporary-domestic, permanent-domestic and international movement. She found that international migrant households were more likely to adopt modern farming technology in terms of high yielding varieties (HYVs) of rice, thus achieving higher productivity. Furthermore, the study indicated that the asset-poorer households resorted to domestic migration in the absence of financial capital to support cross-border migration, which did not drive production enhancements.

Maharjan, Bauer and Knerr (2012a) investigated the impact of international labour migration on subsistence agricultural production in the Western Mid Hills of Nepal. The data for the study was obtained from a household survey covering 280 households. The study revealed that international migration led to negligence of cereals (paddy, wheat, maize and millet) production. It also confirmed that international migration had no association with material inputs such as fertilizer. The study concluded that international migration did not help to make a shift from subsistence farming towards more profitable commercial farming.

4.3.7 Impact on household expenditures

Empirical research also shows the remittances are spent on consumer goods rather than on investment (Cohen and Rodriguez, 2004; Koc and Onan 2004). Cohen and Rodriguez (2004) in rural Mexico found most (92%) of the

remittances spent on daily and household expenses with about a portion (8%) of remittances going to business startup or investments. Using data from the 1996 Turkish International Migration Survey (TIMS-96) covering 1,564 households and 4,680 individuals, Koc and Onan (2004) studied the use of remittances sent by international migrants to the households in Turkey. The data were analysed by descriptive statistics. It revealed that almost 80% of remitted earnings were spent on daily expenses, 7% on healthcare, 4% for expenses related to marriage, 3% for land or house purchase, and remaining 5% for other purposes. This suggests that remittances were used to improve the standard of living of left-behind families. The study concluded that the way the remittances were used varied according to the economic status of the migrants' households.

Zarate-Hoyos (2004) examined the consumption patterns of remittance-receiving households in Mexico. The data for the study came from the National Household Income and Expenditure Survey (ENIGH) and used regression analysis. The author presents Mexican households allocated a larger share of current expenditures to investment and savings than do non-remittance receiving households. Further, remittance-receiving households had lower income elasticities for current consumption and for consumer durable goods expenditures than do non-remittance receiving households. Using data from the Household Income and Expenditure Survey (ENIGH), Airola (2007) examined expenditure patterns of migrants' and non-migrants' households in Mexico. The author found that among the remittance receiving households, a greater share of total income was spend on durable goods, healthcare and housing. The consumption on food was statistically significant but was negative which indicated lower share of household budget in food. This study found weak evidence of an increase in spending on education and clothing.

Adams (2005) studied how remittances affect the marginal spending behaviour of households, using data from a national household survey done by the *Instituto Nacional de Estadisitica* in Guatemala in 2000, covering 7,276 households and OLS regression. The result showed on average households without remittances spent 59% of their incremental income on consumption goods (food and consumer goods), while those receiving international remittances on the margin spent 56% for that purpose. He found that households receiving remittances spent 14.8% less on food than non-remittance receiving households. He states that marginal spending patterns of international remittance receiving household was qualitatively different from that of households which did not receive remittances, as they viewed remittances earnings as a temporary source of income and spent more on investment than consumption goods. Further, he found that marginal spending of households receiving international remittances on housing and education was 2.2% and 58.1% more than households that did not receive remittances. The study concluded that remittances receiving households spent more on education, health and housing and less on food than households that did not receive remittances. Likewise, Taylor and Mora (2006) found that international migrants' households in Mexico had a larger marginal budget shared for investment than those without. In contrast, Orozco (2003) found that migrants households' in Mexico, Nicaragua and El Salvador spent the largest share of their income on food and clothing.

Adams, Cuecuecha and Page (2008) compared marginal spending behaviour of three groups of households: those receiving no remittances, those receiving internal remittances and those receiving international remittances, using nationally representative 2005/06 Ghana household survey. Two stage, multinomial logit and ordinary least square (OLS) methods were used to test the probability of remittances and marginal spending behaviour of households. The study revealed that households receiving remittances did not

spend more at the margin on food, education and housing than those households with similar income level and characteristics that did not receive remittances. Households in the survey treated remittances just like any other source of income, and there were no changes in marginal spending patterns for households with the receipt of remittance income.

Adams and Cuecuecha (2010a) assessed impact of remittances on household consumption using panel data (2000 and 2007) from the Indonesian Family Life Survey. The study used a three-stage model to estimate counterfactual expenditures for households receiving remittances. It was found that households receiving remittances in 2007 spent more at the margin on consumption good (food) compared with what they would have spent on these without the receipt of remittances. Furthermore, households receiving remittances in 2007 spent less at the margin on investment good (housing) compared with what that would have spent on this good without the receipt of remittances. The study concluded that households receiving remittances were poorer than other types of households who tend to spend their remittances at the margin on consumption rather than on investment goods.

Adams and Cuecuecha (2010b) analysed the effects of remittances on the marginal spending behaviour of households, by considering receipt of internal remittances (from Guatemala) and international remittances (from United States). The data for the study came from 2000 Guatemala ENCOVI Survey, conducted by the *Instituto Nacional de Estadistica* in Guatemala. The survey included 7,145 urban and rural households, which consisted of information on income, expenditure, education, financial assets, household enterprises and remittances. A two-stage Heckman model with instrumental variables was applied. It was found that the households receiving international remittances spent less at the margin on one key consumption good (food) and more at the margin on two investment goods (education and housing) compared to what

they would have spent on these good without remittances. At the mean, households receiving international remittances spent 194% more at the margin on education and 81% more at the margin on housing than what they would have spent on the same good without the receipt of remittances. The authors report that the households receiving remittances tend to spend more at the margin on investment goods because they treat their remittance earnings as transitory (rather than permanent) income. The findings supported the view that remittances can help increase the level of investment in human and physical capital in remittance receiving countries.

Grigorain and Melkonyan (2011) examined the implications of remittance flow on behaviour of receiving households in Armenia. The data for the study came from the 2004 Integrated Living Standards Measurement Survey (ILSMS) conducted by the National Statistical Service of Armenia. Almost 23% of all surveyed households reported receiving transfers from abroad, but only 14% reported having a migrant abroad. The study used three-stage least square (3SLS) technique to estimate the model, using instrumental variable. It revealed that remittance-receiving households worked fewer hours and spent less on the education of their children. The study concluded that savings were not used to expand the business activities. The evidence suggests that the impacts of remittances were gloomy at the microeconomic level in Armenia.

Sharma (2011) assessed the impact of international contract-based migration and household wellbeing in Sri Lanka. The data for the study came from the household survey, covering 1,000 migrant and non-migrant households in the western Sri Lanka. The findings revealed statistically significant differences between mean levels of per capita total consumption expenditure, per capita food expenditure, and per capita non-food expenditure between matched migrant and non-migrant households. The results also confirmed that in all cases, expenditure was higher for migrant households.

There has been a vast amount of literature with empirical research on different aspects of migration and remittances. Important studies in the recent past have been reviewed to enhance the current state of knowledge. These empirical studies consisted of determinants of migration and remittances, with their impact on migrant sending households. The methodology and results of these studies were consulted to develop the methodology of the current investigation and to find out about research gaps. However, the author did not find relevant studies to compare with her results. The results of these studies will be compared with the present study in a subsequent chapter.

5. Research hypotheses and conceptual framework

This chapter presents the research hypotheses used in the study. The research hypotheses are deduced from the theories and empirical findings. This chapter also presents the conceptual framework of the research.

5.1 Research hypotheses

Determinants of migration

Gray (2009) examined the effects of landownership on out-migration from a rural area in the Southern Ecuadorian Andes. His findings confirmed that international migration was mostly from land-rich households, whereas local and internal migration was most likely from land-poor households. In order to test the above statement for the case of Nepalese out-migration, the following hypothesis is formulated:

> H1.1: The probability that a household has migrant increases with the size of the household's landholding.

Migration incurs cost mostly when international migration comes to the forefront. Stark (1991) states that poor people could not migrate due to the cost involved in migration. Similarly, Skeldon (2002) and Kothari (2003) states that only wealthier households can send migrants abroad. Massey et al. (1998) states that the probability of out-migration of a household member increases with possession of assets the household owns. If such statements are applicable in case of Nepal, the following hypothesis is to be tested:

> H1.2: The probability that a household has migrant increases with the household's asset.

In an empirical analysis from Chitwan valley in Central Nepal, Bohra and Massey (2009) found that social capital in terms of father's international migration experience and neighbourhood prevalence ratio for international

migrants had augmented international migration. Similarly, Gray (2009) in Ecuador found that social capital was statistically significantly correlated with international migration. In order to test the above statement, the following hypothesis is formulated:

> H1.3: The probability that a household has migrant increases with the presence of previous international migration experiences in the family.

An educated household head can have a depth of knowledge in employment opportunities and transmit information (Vanwey, 2003; Barbieri and Carr, 2005) to the household members for out-migration. The amount of human capital determines the labour market position of individual workers, which in turn determines their employment status and income level (Jennissen, 2007). If this holds for East Nepal, similar result is supposed to be obtained. In order to test the above statement, following hypotheses are formulated:

> H1.4: The probability that a household has migrant increases with the education of the household head.

> H1.5: The probability that a household has migrant increases with the number of adults with higher secondary education.

Determinants of remittances

Following Adams (2005), this study considers older household heads may have children of working age group who can migrate for work and send remittances. If this statement is applicable to Nepal, age of the household head should increase the probability of receiving remittances. In order to address the research question of this study, the following hypothesis is to be tested:

> H2.1: Remittances received by households increase with the age of the head of the household.

Adhering with the NELM theory (Stark and Bloom, 1985; Stark, 1991) where migration is a household decision, households having larger family size have more labour force. Basically, extended families intend to receive remittances by sending members away for work. If such case holds in the context of Nepal, then the likelihood of receiving remittances by extended family increases significantly. In order to test the above statement, the following hypothesis is formulated:

H2.1: Remittances received by households increase with the likelihood of having an extended family.

Use of remittances

Sharma (2011) in an empirical study on Sri Lanka found that food expenditures of migrants' households were significantly higher than those of non-migrants' households. If this case holds for East Nepal, a similar result is supposed to be obtained. In order to test this statement, the following hypothesis is formulated:

H3.1: Remittances have positive effects on food expenditures.

Sharma (2011) in an empirical study in Sri Lanka found that educational expenditure was significantly higher for migrants' households compared to non-migrants' households. In order to test this statement, the following hypothesis is formulated:

H3.2: Remittances have positive effects on educational expenditures.

Many studies have shown that remittances have a significant impact on improving health conditions of the household at origin (Hanson and Woodruff, 2003; Hildebrandt and Mckenzie, 2005). Sharma (2011) found that health related expenditures were statistically significant in Sri Lanka. He concluded that the health expenditure levels of migrants' households were

59% higher than for non-migrants' households. Ponce, Olivié and Onofa (2011) in Ecuador found a positive impact of remittances on health expenditures. They concluded that remittances were used for preventive and emergency situations. If such statements are applicable in the context of Nepal, remittances should influence the likelihood of households' spending in healthcare. In order to support the above statement, the following hypothesis is to be tested:

H3.3: Remittances have positive effects on health expenditures.

Remittances that supplement households' income can also be used for investments in the purchase of land. In an empirical study in rural Pakistan, Adams (1998) found that remittances were invested in the purchase of rainfed and irrigated land. He states that propensity to accumulate rural assets in terms of land is much higher through remittance income (often transitory in nature) rather than the labour income (generally permanent source of income in nature). If a similar condition holds in the case of Nepal, the following hypothesis is to be tested:

H3.4: Remittances increase the likelihood of households to invest in land.

Massey et al. (1987) found that after meeting consumption needs of the household, migrant families allocated their saving towards purchase of land or acquisition of house in Mexico. Osili (2004) concluded that a large proportion of remittance income in Nigeria was spent on housing. It was found that older migrants and those with higher incomes were more likely to invest in housing. Considering these statements, the following hypothesis is to be tested:

H3.5: Remittances increase the likelihood of households to invest in the construction or renovation of houses.

Having Mexico as a case study, Woodruff and Zenteno (2004) found that investment in small enterprises was higher in states with higher migration rates and higher remittances receipts. Kilic et al. (2009) in Albania concluded that past household migration experience had a positive relationship on the likelihood of owning a non-farm business. Considering these facts and their application in the context of east Nepal, the next hypothesis to be tested is as follows:

> H3.6: Remittances increase the likelihood of households to own a business.

5.2 Conceptual framework

The objective of this research is to identify the factors that determine the receipt of remittances along with the household migration decision. Most research on the impacts of remittances, on migrant sending countries, does not include a model of what determines migration in the first place (Taylor, 1999). According to Taylor (1999), the factors influencing international migration decisions also are likely to shape the outcomes of international migration and remittances. Following Taylor (1999), this study analyses the impacts of remittances along with the determinants of migration. Second, it evaluates the impact of remittances on left-behind families in the country of origin. The research adheres to the view of NELM and considers the household as a major unit of analysis for migration decision. To overcome income risk, the household intends to diversify their labour resources by sending members away for work.

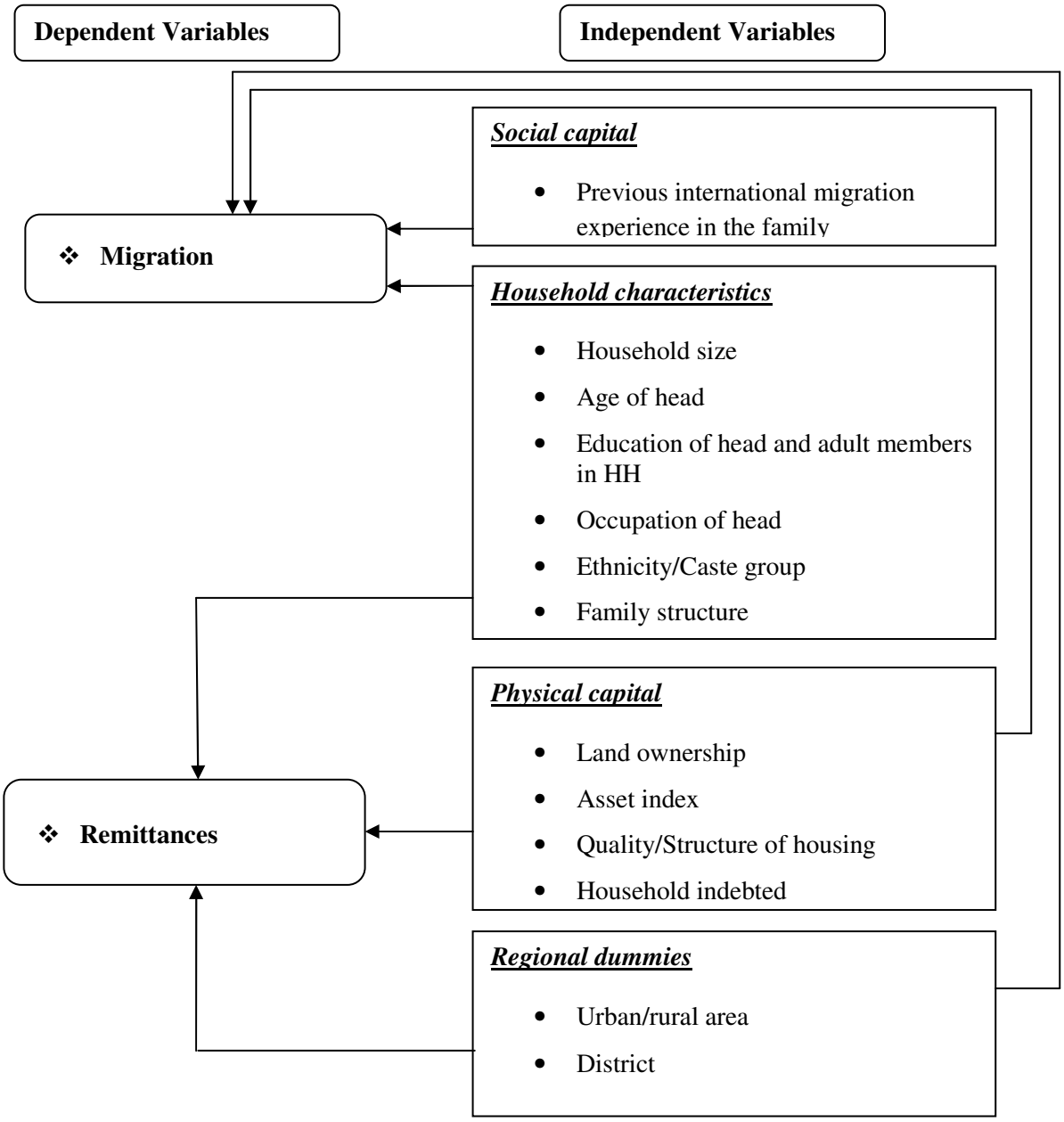
The study begins by analysing the determinants of international labour migration and remittances, then proceeds to analyse the impact of remittances on the receiving households. Following de Haas (2007), three factors which mainly influence migration decisions were social capital, physical capital and human capital. The other additional factors for determining out-migration

included in the framework are household characteristics and regional dummies. Human capital was incorporated with household characteristics, which focuses in analysing migration decision based on the characteristics of household members. Physical capital in the form of landholding, asset index and housing quality were included in the framework, which can be helpful in financing migration. The social network can help to increase migration by reducing the risk and transaction cost involved in migration. Regional dummies can be helpful to show the effects of rural and urban areas on out-migration. Similarly, household characteristics, physical capital and regional dummies are included in the framework, which can influence the likelihood of receiving remittances by the households.

Remittances sent by migrants can be used to meet the daily needs of households. Remittance spending can have multiplier effects and promote local development in migrant sending areas. This study will be limited in evaluating the impact of remittances on household expenditure patterns (mainly on food, education and healthcare) and household investments on land, house construction or renovation and business ownership. Four factors; household characteristics, physical capital, remittances and regional dummies are considered in the framework, which can influence household expenditures and investments patterns.

Figure 5.1 and Figure 5.2 provide a schematic framework for studying determinants of migration and impacts of remittances on left-behind families.

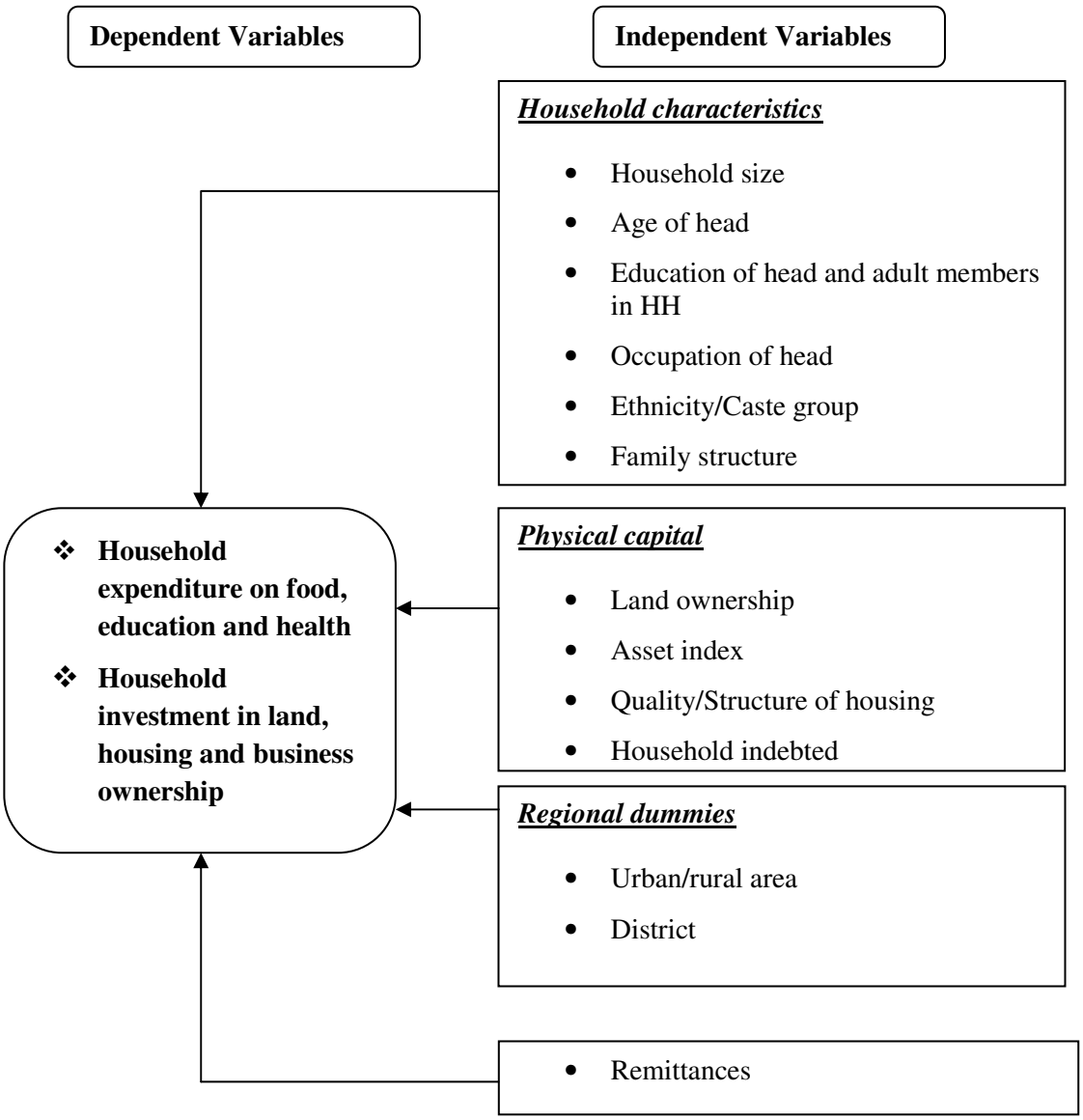
Figure 5.1: Conceptual framework for determinants of migration and remittances



Migration = f (Household characteristics, physical capital, social capital, regional dummies) (1)

Remittances = f (Household characteristics, physical capital, regional dummies) (2)

Figure 5.2: Conceptual framework for determinants of household expenditure and investment



Household expenditure on food, education and health = f (Household characteristics, physical capital, regional dummies, remittances) (3)

Household investment in land, housing and business ownership = f (Household characteristics, physical capital, regional dummies, remittances) (4)

6. Economic framework and migration in Nepal

6.1 Natural conditions

Nepal is a landlocked country situated in South Asia with China in the North and India in the South, East and West. The country has a total land area of 147,181 square kilometres. It is divided into three ecological belts, namely: Mountain, Hill and *Tarai*. The hills have the highest shares of land resources with about 43%, with the mountains 36% and the *Tarai* with 23%. Nepal comprises five administrative regions: East, Central, West, Mid-West and Far-West, which vary in terms of economic potentials, population density and level of development. The climate of Nepal varies with altitude ranging from tropical in the *Tarai* and temperate in the Mountains. The capital of the country, Kathmandu, is situated in the Hill and in the Central region of the country. It is one of the most populous areas in the country.

6.2 Population

The population census of 2011 recorded that the population of Nepal is about 27 million, with a sex ratio of 94.2. The annual population growth rate of the country is 1.4% (CBS, 2012). The share of urban population is around 17% and the remaining live in rural areas. The *Tarai* has the highest share of population, 50.3%, followed by the Hills with 43% and mountains with only 6.7% (CBS, 2012). The average household size of Nepal is 4.9 (Table 6.1).

Table 6.1: Population, household size and population growth rate in 2011

Region	HH size	Population	Decadal growth (2001-2011)	Area (sq.km)
Eastern	4.72	5,811,555	9.16	28,456
Central	4.92	9,656,985	20.94	27,410
Western	4.62	4,926,765	8.19	29,398
Mid-Western	5.10	3,546,682	18.97	42,378
Far-Western	5.43	2,552,517	16.06	19,339
Nepal	4.88	26,494,504	14.99	147,181

Source: Central Bureau of Statistics, 2011b; 2012

Migration has been an important component of population redistribution in Nepal. People have been migrating from rural-to-rural and rural-to-urban areas in search of employment and educational opportunities. Important causes of internal migration in Nepal are poverty, inequitable distribution of income, unemployment, difficult livelihood and food insecurity (KC, 2003). Migration from hills and mountains to the *Tarai* and rural-to-urban areas has been a coping strategy to lessen the burden of a vicious circle of poverty (Prenusshi 1999 cited in KC, 2003). The 2001 census of Nepal identified four major streams of internal migration (see TableA2), mainly rural-to-rural (68.2%), rural-to-urban (25.5%), urban-to-urban (2.8%) and urban-to-rural (3.5%). It indicates that internal migration is overwhelmingly rural-to-rural. The census data shows that the migration from urban-to-urban and urban-to-rural is of lesser importance in terms of volume (KC, 2003).

6.3 Economic development

The primary sector consists of agriculture, forestry, fishery, and mining and excavation. The secondary sector comprises industries, electricity, gas, water supply and construction. The tertiary sector comprises trade, transport, communication and warehousing, financial intermediation, real estate business, public administration and defence, education, health and other community, social and personal services, and other sectors.

Table 6.2: Sectoral structure of GDP from 2000/01 to 2010/11

Year	Composition of GDP (%)		
	Primary sector	Secondary sector	Tertiary sector
2000/01	37.0	16.9	46.1
2001/02	37.9	17.1	45.1
2002/03	37.0	17.2	45.9
2003/04	36.4	16.8	46.8
2004/05	35.7	16.6	47.7
2005/06	34.1	16.2	49.7
2006/07	33.0	16.1	50.9
2007/08	32.3	16.2	51.5
2008/09	33.5	15.3	51.2
2009/10	35.5	14.4	50.1
2010/11P	36.2	14.1	49.8

P: Preliminary estimate
Source: Economic Survey, Ministry of Finance, 2011

Table 6.2 shows that the agriculture and manufacturing growth has stagnated, while the service sector is progressing. The share of agricultural GDP decreased from 37% in 2000/01 to 36.2% in 2010/11. Similarly, the share of industrial sector decreased from 16.9% in 2000/01 to 14.1% in 2010/11. However, the share of services increased from 46.1% in 2000/01 to 49.8% in 2010/11. Within the industry sector, the manufacturing sub-sector's share does not even amount to 10% of GDP (see Table A3). Industrial growth has declined in 2008/09 due to acute power shortages, frequent strikes (*bandhs*), lockouts, transport disruption, business extortion and labour disputes (World Bank, 2010). The service sector growth was mainly due to the changes in the financial intermediation, and education sub-sectors (NPC, 2011). The service sector is less affected by political instability (World Bank, 2010), and has shown good performance over time.

6.4 Foreign trade

Nepal has a very narrow export base, which consists of *pashmina*, lentils, processed leather, tea, silver, jewelleries, herbs, Nepalese paper and paper products, carpets, handicraft and ready-made garments. Nepal's import includes petroleum products, M.S. billets, cold roll and hot roll sheets in coil,

machines and spares, chemical fertilisers, medicines, electrical goods, paper, coal, rice, dry cell batteries, pipe and pipe fittings, fruits and sugar. Imports have risen from NRs. 149.47 billion in 2004/05 to NRs. 374.33 billion in 2009/10 (37% of GDP) (see Table A4). Exports have increased marginally from NRs. 58.70 billion in 2004/05 to NRs. 60.82 billion in 2009/10 (Table 6.3). The ready-made garments, *pashmina* and carpets, which have all declined recently. The export of ready-made garments plummeted after the end of the Multi Fibre Agreement (MFA). Imports have been soared with high remittances (World Bank, 2010). The rapidly increasing imports and declining exports have widened the trade deficit (World Bank, 2010).

Table 6.3: Trade balance in 2004/05 to 2010/11

(in ten Million NRs.)

	2004/05	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**2010/11P**
Export F.O.B	5,870.57	6,023.41	5,938.31	5,926.65	6,769.75	6,082.4	4,018.41
Import C.I.F	14,947.3	17,378.03	19,469.4	22,193.77	28,446.96	37,433.52	25,006.06
Trade	-	-11,354.52	-13,531.2	-16,267.12	-21,677.21	-31,351.12	-20,987.62
Exports as % of GDP	14.58	13.45	12.86	12.78	12.42	9.78	8.68
Imports as % of GDP	29.48	31.32	31.72	33.26	34.67	37.44	32.24

P: Preliminary estimate
Source: Economic Survey, Ministry of Finance, 2011

6.5 Human development index and poverty

Nepal has a low human development index (HDI) of 0.458, and ranks[11] at the 157th position among 187 countries in the year 2011 (UNDP, 2011). The comparison of HDI in 2001 and 2006 is shown in Table 6.4. The HDI value from the global human development report differs with the country report due to the discrepancies in methodology and data (UNDP, 2009). The HDI varies widely through rural and urban areas. It has improved by 8% from 0.471 in 2001 to 0.509 for the whole country in 2006, with annual rate of 1.6% (UNDP, 2009b). Among the development regions, Central region has the

[11] Rank 1 stands for the highest human development.

highest HDI of 0.531 in 2006. The HDI of Nepal falls down to 0.494 from 0.509, when Kathmandu is excluded, and the Central region moves from the top to lower position. This strongly implies disparity between the people of Kathmandu and those outside the capital (UNDP, 2009).

Table 6.4: UNDP human development index (HDI) of Nepal in 2001 and 2006

Development Region	2001	2006
Eastern	0.493	0.526
Central	0.490	0.531
Western	0.491	0.516
Mid-Western	0.402	0.452
Far-Western	0.404	0.461
Urban	0.581	0.630
Rural	0.452	0.482
Nepal	0.471	0.509

Source: UNDP, 2009

The average household real income has increased from NRs. 75,400 in 1995/96 to NRs. 130,564 in 2010/11 (Table 6.5). Similarly, average per capita real income has increased from NRs. 13,259 in 1995/96 to NRs. 26,877 in 2010/11 (CBS, 2011a). One of the reasons for increase in per capita real income is remittances. Despite the increases in average per capita real income, inequality is stark by income groups.

Table 6.5: Average household and per capita real income[12] over 1995/96- 2010/11

Particulars	1995/96	2003/04	2010/11
Average household real income in NRs.	75,400	88,034	130,564
Average per capita real income in NRs.			
Nepal	13,259	16,662	26,877
Poorest 20% of population	3,483	4,399	10,250
Richest 20% of population	33.139	44,490	60,741

Source: CBS, 2011a

The Nepal Living Standard Survey (NLSS) 2003/04 estimates 30.9% of the population living in poverty, considering the national poverty line of NRs. 7,696. The poverty is reduced by 10.91% between 1995/96 and 2003/04. One

[12] Real income was calculated by using the formula: Real income=(Nominal income/CPI)* 100

of the main reasons for the declining poverty rate was income from remittances (NPC, 2010). The NLSS 2010/11 uses 2,200 calorie consumption by a person per day and access to essential non-food items as the index to measure poverty in Nepal. The national poverty line of NRs. 14,430 per person per year is calculated as the current market prices of a basket of food that satisfy 2,200 calories per day and other essential non-food items (CBS, 2011a). The head count poverty index describes the percentage of population whose per capita income or consumption is below the poverty line. This index describes the incidence of poverty and does not give information on the intensity of poverty. The NLSS 2010/11 estimates 25.2% of population living below the poverty line (Table 6.6). The same survey data found 32.5% population living below the income level of US$ 1.25 a day. A poverty line to US$ 2 a day yields a poverty rate of 62.8% in 2010/11 (CBS, 2011a). The Gini coefficient has decreased from 0.41 in 2003/04 to 0.33 in 2010/11, which indicates that the income level of the poor has grown faster than that of the rich (CBS, 2011a).

Table 6.6: Changes in poverty in various NLSS (%)

Area	**Population below poverty line**		
	1995/96	2003/04	2010/11
Urban	21.6	9.6	15.5
Rural	43.3	34.6	27.4
Nepal	41.8	30.9	25.2
Development Region			
Eastern	38.9	29.3	21.4
Central	32.5	27.1	21.7
Western	38.6	27.1	22.3
Mid-Western	59.9	44.8	31.7
Far-Western	63.9	41.0	45.6

Source: CBS, 2011

6.6 Education

The literacy level does not indicate and measure the overall level of educational achievement of the people. The educational attainment of the population above 6 years and above is given in Table 6.7. Informal schooling

refers to the people who are literate but had no formal education. The proportion of people who were literate but had no formal education has decreased from 8.98% in 1991 to 4.73% in 2001. The proportion of literate people who had gone through primary education increased from 16.15% in 1991 to 22.65% in 2001. Similarly, the proportion of literate people who had completed secondary education increased from 8.88% in 1991 to 16.54% in 2001. This can be attributed due to the expansion of free primary and secondary education facilities in the country. The overall literacy rate has increased from 39.55% in 1991 to 54.09% in 2001 (CBS, 2003).

Table 6.7: Educational status of population aged 6 years and above in 1991 and 2001 (%)

Educational Level	1991	2001
Informal schooling	8.9	4.7
Primary Education (1-5)	16.2	22.7
Secondary Education (6-10)	8.9	16.5
SLC/Intermediate	2.8	7.7
Graduate/Post Graduate	0.6	1.8
Level not stated	1.8	0.7
Total	39.2	54.1

Source: CBS, 2003

6.7 Employment

Labour force consists of the economically active population; the labour force participation rate (LFPR) includes all who are currently employed and unemployed (CBS, 2011a). The NLSS 2010/11 carried out by CBS in 2011 reveals the labour force participation rate increased from 70.6% in 1995/96 to 80.1% in 2010/11 (Table 6.8). It further presents that 78.3% of the population above 10 years were employed[13], 1.8% were unemployed[14] and 19.9%

[13] The Nepal Living Standard Survey defines currently employed as if he or she is either employed for at least one hour during the previous seven days(reference period), or has a job attachment if temporarily absent from work, or is available to work if work could be found (CBS, 2011b).

[14] A person is currently unemployed if he or she did not work during the last seven days but was looking for work, or was waiting to hear from a perspective employer or to start a new job or could not find work or did not know how to look for work (CBS, 2011b).

remained inactive[15]. The unemployment rate decreased from 4.9% in 1995/96 to 2.2% in 2010/11. Underemployment[16] increased from 47.1% in 1995/96 to 53.9% in 2010/11. Of the total active labour force, 64% were engaged in agriculture with the remaining 36% in the non-agriculture sector.

Table 6.8: Indicators of employment status in Nepal, 1995/96- 2010/11

Indicators	1995/96	2003/04	2010/11
Percentage of employed population	67.2	74.3	78.3
Percentage of unemployed population	3.4	2.9	1.8
Percentage of non-active population	29.4	22.8	19.9
Labour force participation rate	70.6	77.2	80.1
Unemployment rate	4.9	3.8	2.2
Percentage of employed individuals by worked hours (per week)			
1 to 19 hours	21.5	24.4	31.7
20-39 hours	25.6	23.4	22.2
40 hours and above	52.9	52.2	46.2
Share by main sector of employment			
Share of wage agriculture	12.2	6.8	2.8
Share of self agriculture	70.7	64.3	61.3
Share of wage non-agriculture	9.5	10.2	12.6
Share of self non-agriculture	7.7	9.3	12.7
Share of extended economic work	-	9.4	10.7

Source: Nepal Living Standard Survey, 2011, Central Bureau of Statistics. 2011b

The Nepal Labour Force Survey (NLFS) carried out by Central Bureau of Statistics (CBS) in 2008, reveals 11.8 million of the population is economically active and the annual employment growth rate is 2.45% (CBS, 2009). The unemployment rate for the better-educated workforce is significantly higher than that for illiterate or less educated workers in Nepal. The Nepal Living Standards Survey 2010/11 found that the unemployment rate among workers with 11 grades of education or more was about 4.1%, or more than three times that for illiterate workers (CBS, 2011a).

[15] Person who did not work in the past seven days or did not look for work for reasons other than listed above are classified as 'currently inactive' (CBS, 2011b).

[16] Underemployment refers to visible underemployment, where a person may have jobs but suffers from partial lack of work. A person is underemployed if he or she would like to work longer hours, but is prevented from doing so for economic reasons (CBS, 2011b).

6.8 Agricultural sector

The Agriculture Census of 2002 has classified land holdings into agricultural and non-agricultural land as per the use. Agricultural land is further classified into cropland and the ponds. Non-agricultural land comprises of woodland or forest and all other land. The total area of agricultural holdings is 4,121 thousand hectares (Table 6.9). This type of agricultural land is very important to the attainment of food self-sufficiency in Nepal (CBS, 2006). More than half (55%) of arable land is in *Tarai*, with 37% in the Hills and 7% in the Mountains. The distribution of arable land among the various development regions varies, with Eastern (31.1%) having the highest and Far-Western (8.7%) having the lowest share of arable land (see Table A6). The landholding size per household has decreased from 0.8 hectares in 2001/02 to 0.7 hectares in 2010/11 (CBS, 2011b). The land fragmentation and inheritance law has helped to decrease the average landholding size.

Table 6.9: Land use in Nepal in 2009

Land use	Area (in thousand hectares)	%
Arable land	4121	27.9
Forest	4268	28.9
Shrub	1560	10.6
Pasture	1766	11.9
Water bodies	383	2.6
Other	1620	17.8
Total land area	14718	100

Source: Ministry of Agriculture and Cooperative, 2009

Agriculture is the mainstay of the Nepalese economy of which more than 70% of the economically active population is dependent. The principal food crops are paddy rice, maize, wheat, barley and millet, while sugarcane, oilseed, tobacco, potato, jute and tea are the major cash crops grown in Nepal (see Table A8). About 97.5% of holdings had planted cereal grains in 2001/02. Rice, being the staple food, was cultivated by more than three-fourths (77%)

of the holdings in 2001/02. Cropping intensity has increased from 1.75 in 1991/92 to 1.80 in 2001/02 (CBS, 2006). In the past, agriculture produce were the foremost export commodity. But now, owing to the rapidly growing population and the low productivity of agriculture, only products such as pulses have remained the major agriculture commodities for export.

6.9 Household income and expenditures

Household income indicates the earning and purchasing capacity of the household. The household income and expenditures used in this study are taken from the Household Budget Survey, which was carried out by Nepal *Rastra* Bank (NRB) in 2005/06. It includes income of all household members including the absentee[17]. Information on agricultural income was collected in each quarter of the year in order to take care of the seasonality effect of the economic activities and then summed to arrive at the annual income, which in turn was divided by twelve to derive monthly household income. The other income categories were collected for the month preceding the survey date. They comprise income from agriculture, salary/wage income, business/enterprise, remittances, imputed rent and others. Details of the contribution of various income sources to the monthly household income are given in Table 6.10. The share of the income from agricultural activities to the monthly household income in urban areas (5.1%) is half of rural areas (10.8%). Remittance contributes to about 16% of the total monthly household income in Nepal and the remittance share is highest in the monthly income of rural households (20.6%) followed by urban (13.3%). This indicates the importance of remittance income in rural Nepal. The Household Budget Survey found that the average monthly household income of NRs. 22,225, NRs. 31,935 and NRs. 27,391 in rural, urban and Nepal respectively (NRB, 2008).

[17] Absentee includes household member who resides abroad or in another city (NRB, 2008).

Table 6.10: Households monthly income by region (% of total household income)

Source of Income	Rural	Urban	Eastern	Central	Western	Mid & Far-Western	Nepal
Agriculture, livestock & fisheries	10.8	5.1	8.9	6.8	4.6	10.2	7.3
Salary, allowance, wage & pension	22.7	31.4	20.6	34.6	25.3	29.2	28.1
Business/service	29.4	29.6	28.7	30.3	27.4	32.8	29.5
Remittance	20.6	13.3	24.0	9.2	24.4	5.4	16.1
Imputed rent	7.5	11.9	7.1	12.5	9.6	11.2	10.2
Miscellaneous	9.0	8.7	10.8	6.7	8.8	11.2	8.8

Source: NRB, 2008

Household consumption expenditure refers to all money expenditures for food and non-food items. It also includes the value of goods and services produced at home, received in kind, and consumed by the households, which was valued at prevailing market prices (NRB, 2008). The average monthly household expenditures in rural Nepal stood at NRs. 11,982, and the share of food expenditure was 44.1% (Table 6.11). The average monthly household expenditures in urban Nepal stood at NRs. 17,896. Of this, food expenditure accounted for 35.8% and non-food expenditures constituted 64.2%. The average monthly household expenditures in Nepal stood at NRs. 15,130 of which food and non-food share accounted for 39% and 61% respectively (NRB, 2008).

Table 6.11: Household monthly expenses by areas and region (% of total expenses)

Sector	Rural	Urban	Eastern Region	Central Region	Western Region	Mid and Far-Western Region	Nepal
Food	44.1	35.8	40	38.3	38.2	39.4	38.9
Non-food	55.9	64.2	60	61.7	60.8	60.7	61.1
Total	100	100	100	100	100	100	100

Source: NRB, 2008

6.10 International migration and remittances

6.10.1 History of international migration in Nepal

International migration has been one of the several strategies for economic survival among subsistence farm households in Nepal (KC 2004; Seddon, Adhikari and Gurung, 2002; Thieme and Wyss 2005). Foreign labour migration started before the early nineteenth century, when the first Nepalese travelled to Lahore (present Pakistan) to join the army of the Sikh ruler Ranjit Singh. This gave the nick name *Lahure* to all people employed abroad during that time until now. After the Anglo-India war of 1814-16, the recruitment of hillside people continued in the British army. During the war, the British Empire was impressed by the bravery and loyalties of the Nepalese army, which resulted in the creation of '*Gorkha* regiments' which continue to date. After the independence of India in 1947, it continued to hire Nepalese people in the Indian army (Seddon, Adhikari and Gurung, 2002). Apart from formal employment in the military, at the same time a large number of Nepalese migrated to India for better employment opportunities in tea-estates of Darjeeling and wood works of Assam (Hoffmann, 2001). Later on, the increasing number of migrants started working as watchmen, porters, gate-men and some as sex workers. Labour migration until the early 1980s was mostly directed towards India.

Migration between India and Nepal is not documented. The bilateral treaty keeps the border open, where Nepalese labourers get access to low-paid and low-skilled jobs in India (Yamanaka, 2005). Employment opportunities, open border, proximity and low transport cost were the major causes of migration to India (Ojha 1983; Subedi 1991). Moreover, empirical research shows migration to India is often seasonal to cope with livelihood (Gill, 2003; Thieme, 2003). Subsistence agriculture is a main source of income for the households in Far-Western Nepal, where only a fraction of them are able to produce enough food. Due to low human development and widespread

poverty the realistic option for Nepalese is to go to India as unskilled workers (Muller-Boker, 2003). Globalisation and economic reform adopted by the country in 1990 had widened the scope of international migration from Nepal. As a result, migration to Gulf and Tiger States[18], United States of America or Europe only instigated in the late 1980s (Seddon, Adhikari and Gurung, 2002).

6.10.2 Migration patterns

Migration to international countries has intensified after political change in 1990, with easy access of travel documents and passports to the general people. Official statistics from 2001 estimates 3.3% (762,181) of the population absent from Nepal. Out of this number, 77.7% were in India, 14.5% in the Middle-East, and 4.5% in East and South-East Asian countries (CBS, 2002). The population census of 2011 estimates 1.92 million of the population absent from Nepal (CBS, 2012). The major factor contributing to large-scale out-migration from Nepal is higher growth of labour force and limited employment opportunities outside the farm sector. With the expansion of annual labour force of 400,000 persons (2.45%), the government is unable to create additional employment opportunities to the rising population. Moreover, the low salary structure in the economy, insecurity in the rural areas, and higher demand for the labour in the industrialised Asian and Middle-East countries are the factor for out-migration from Nepal (Shrestha, 2008). Consequently, foreign employment has become one of the tools adopted by the government to reduce unemployment. It is on rise in recent years due to limited number of employment opportunities and growing conflict in the country (MOF, 2004). Elusive political stability, frequent closure, strikes, reluctance of businessmen to invest in Nepal, and the closure of many industries were blamed for the reasons of out-migration from Nepal (NIDS, 2011).

[18] Tiger States include Hong Kong, Singapore, Taiwan and South Korea.

The number of Nepalese going abroad for work has increased dramatically. The vast majority of migrant workers from Nepal are either unskilled or semi-skilled. The Nepal Institute of Development Studies (NIDS, 2004) found that 70% of migrant workers abroad were unskilled and 27% were semi-skilled. Though the remittance generated through foreign employment has largely supported the national economy, the remittances could not be collected as expected because the maximum numbers of Nepalese workers are engaged in unskilled sectors with minimal facilities and remuneration.

The trend of overseas migration (excluding India) from Nepal in various years is shown in Table 6.12. This information provided shows the number of migrants that are documented. The statistics on the number of workers visiting abroad through unauthorized means are unavailable; such a number is assumed to be significant. In 1993/94, the number of migrants moving overseas was 3,605, which increased to 354,716 in 2010/11. The number of migrants moving overseas has increased exponentially in 1998/99 and it continues to date. The total number of migrants decreased in 2008/09, due to the global financial crisis but has soared in subsequent years (NIDS, 2011). Malaysia had opened its labour market to Nepalese migrant workers in 2001 and South Korea in 2004 (IMF, 2006).

Among the destinations chosen by migrant workers, Malaysia is most popular followed by Qatar then Saudi Arabia in 2010/11 (Table 6.12). The UAE attracted a significant number of migrants as well. A total of 105,906 Nepalese migrant workers left for Malaysia in 2010/11. After Malaysia formally opened its labour market to Nepalese workers, the flow of workers is on the rise. However, the number of migrants moving to Qatar and Malaysia decreased in 2008/09, when compared with the previous year. This was due to the effect of the global financial crisis in Malaysia and Qatar. However, the

number of migrants moving to Qatar and Malaysia has taken pace in 2009/10 and subsequent years.

Table 6.12: Major countries of destination of Nepalese out-migrants, excluding India (1993/94 - 2010/2011)

Year	Countries of destination									Total
	Malaysia	Qatar	Saudi Arabia	UAE	Kuwait	Bahrain	Oman	Hong Kong	Other	
1993/94	0	391	2,290	132	361	91	43	63	234	3,605
1994/95	0	245	1,041	0	13	0	0	86	774	2,159
1995/96	0	505	1,469	23	18	0	0	59	60	2,134
1996/97	0	477	1,959	95	107	0	0	67	554	3,259
1997/98	89	1,802	4,825	284	137	111	7	155	335	7,745
1998/99	151	9,030	14,948	1,417	609	787	90	301	463	27,796
1999/00	171	8,791	17,867	6,360	465	583	32	209	1065	35,543
2000/01	11,306	14,086	17,966	8,950	885	904	68	331	529	55,025
2001/02	52,926	19,815	21,094	8,411	378	695	96	482	839	104,736
2002/03	43,812	26,850	17,990	12,650	907	818	44	564	1,408	105,043
2003/04	45,760	24,128	16,875	12,760	3,194	606	73	672	2,592	106,660
2004/05	66,291	42,394	13,366	12,726	1,789	536	330	523	1,763	139,718
2005/06	75,526	55,892	15,813	15,317	640	540	28	140	1,356	165,252
2006/07	74,029	59,705	39,279	25,172	2,441	1,200	509	361	1,837	204,533
2007/08	50,554	85,442	42,394	45,342	1,967	5,099	2,626	199	15,42	249,051
2008/09	35,070	76,175	48,749	31,688	2,291	6,360	4,247	65	15,32	219,965
2009/10	113,982	55,940	63,400	33,188	8,255	4,234	3,285	102	11,70	294,094
2010/11	105,906	102,966	71,116	44,464	15,187	4,647	2,442	70	7,918	354,716

Source: Department of Foreign Employment, 2011

6.10.3 Remittances

Nepal's official remittances inflows have increased tremendously since the 1990s and are estimated to reach US$ 5,115 million in 2012 (World Bank, 2012a). Foreign employment has generated enormous remittance money, transforming the agricultural economy of Nepal into a remittance economy (Wagle, 2012). Nepal has been considered among the top ten recipients in terms of the share of remittances in GDP in 2011 (World Bank, 2012b). The IMF estimates that 80% of foreign remittances in Nepal are informal: 78% through migrants and 2% through the informal system (*Hundi*), 6% through financial institutions and the remainder through other means (IMF, 2006 as cited in Ferrari, Jaffrin and Shrestha, 2006). The informal channel dominates largely because 90% of remittances from India are brought in by the migrants themselves, whose porous border and proximity facilitate informal channels (Khatiwada, 2005). Among formal channels, money transfer operators (MTOs) are the largest in Nepal (Ferrari, Jaffrin and Shrestha, 2006). International money transfer operators such as Western Union and MoneyGram, along with local Nepali money transfer operators (such as Prabhu Money Exchange and International Money Express), dominate the remittance market in Nepal (World Bank, 2011). The MTOs were allowed to enter the market in 2001; the aftermath is that formal remittances have tripled. They remain limited on the India-Nepal corridor due to regulatory obstacles in India. The MTOs have grown and expanded after 2001 due to their easy procedure of establishment and expansion (Ferrari, Jaffrin and Shrestha, 2006). There are over 2,500 non-bank MTOs across the country (World Bank, 2011).

Table 6.13: Remittance flow in Nepal, 2000/01-2010/11

Year	Remittances (in billion NRs)	Share of remittances in GDP (%)
2000/01	47.22	10.7
2001/02	47.54	10.3
2002/03	54.20	11.0
2003/04	58.59	10.9
2004/05	65.54	11.1
2005/06	97.69	14.9
2006/07	100.14	13.8
2007/08	142.68	17.4
2008/09	209.70	21.2
2009/10	231.73	19.8
2010/11P	259.52	19.3

Source: Economic Survey, 2011/12, Ministry of Finance, 2012

Table 6.13 shows the trend of remittances flow over time. The total amount of remittances received by Nepal has reached NRs. 259.52 billion in 2010/11 from NRs. 47.22 billion in 2000/01. The share of remittances in the total GDP of the country was 10.7% in 2000/01, which increased to about 19.3% in 2010/11. These calculations are based on the official transfers. However, informal remittances far outweigh formal ones. Remittances are the largest source of foreign exchange in Nepal and have helped offset the country's deteriorating trade deficit since 2001 (World Bank, 2009).

Table 6.14: Average remittances (real income) for various NLSS (1995/96-2010/11)

Description	1995/96	2003/04	2010/11
Percent of all households receiving remittances	23.4	31.9	55.8
Average amount of remittances per recipient household (NRs)	26,138	38,130	51,894
Share of total amount of remittances received by household			
Internal remittances	44.7	23.5	19.6
International remittances from India	32.9	23.2	11.3
International remittances from other countries	22.4	53.3	69.1
Share of remittances in total household income among recipients	26.6	35.4	30.9
Per capita remittances received for all (NRs)	1,078	2,308	5,965

Source: Nepal Living Standard Survey, CBS 2011a

The NLSS 2010/11 conducted by CBS takes account of both internal and external remittances. The average remittances income and origin of remittances flow for various NLSS are shown in detail in Table 6.14. The percentage of households receiving remittances increased from 23.4% in 1995/96 to 55.8% in 2010/11. Similarly, the average remittances income per recipient household has reached NRs 51,894 in 2010/11. The share of remittances in total households' income of these remittance recipient households increased from 27% in 1995/96 to 30.9% in 2010/11. Moreover, the absolute size of per capita remittances has increased from NRs. 1,078 in 1995/96 to NRs. 5,965 in 2010/11 (CBS, 2011a). The NLSS 2010/11 estimates that internal remittances account for 20% of the total remittances (NRs. 259 billion). The share of remittances from India declined from 33% of total remittances in 1995/96 to 11% in 2010/11. In addition, the composition of volume of remittances changed significantly between 1995/96 and 2010/11. The share of remittances from other countries increased from 22% in 1995/96 to 69% in 2010/11. A quarter of the remittances to Nepal originated from the Gulf countries (26%) and Malaysia (8%) (CBS, 2011a). This indicates an importance of the Gulf and South-East Asian countries in the growth of remittances in Nepal. These facts show the significance of remittances in the economy of Nepal.

Table 6.15: Use of remittances in Nepal in 2010/11

Use of remittances	Percentage
Daily consumption	78.9
Education	3.5
Capital formation	2.4
Household property	4.5
Repay loan	7.1
Others	3.6

Source: Nepal Living Standard Survey, CBS 2011a

Remittances are used by recipient households for various purposes. Use of remittances is determined by the amount of remittances along with the financial situation of the receiving household (Wyss, 2004). Regarding the use of remittance income, the NLSS (2011) states that 79% of the remittances go to consumption and only 2% for capital formation (CBS, 2011a) (Table 6.15). Another qualitative study by Bhadra (2007) revealed that remittances are used on consumption (48%), education (25%), saving (13%), land (9%) and loan payment (5%). This indicates that remittances in Nepal are primarily used in maintaining and improving livelihoods.

6.11 Labour law and migration policy in Nepal

Recognizing the important role that migration and remittances play in the economy, the Government of Nepal had promulgated 'The Foreign Employment Act 2042 (1985)' for the first time to regulate and manage foreign employment. It aimed at controlling and managing foreign employment in order to maintain economic interest and conveniences of the general people. The Act was restrictive in nature (Gurung, 2002) and did not focus on the management and welfare of migrant workers. This act was updated and revised twice in 1992 and 1998. The government of Nepal in 1998 had imposed a ban on female migration for work due to a number of reports of sexual harassment and a physical abuse of women in a number of countries. The foreign labour migration was included and emphasized in several five-year development plans of the country. It was mentioned and highlighted for the first time in the Ninth five-year plan (1997-2002) and its subsequent plan (2002-2007). This was continued in its three-year interim plan (2008-2010) and current interim plan (2010-2013) as well. The plans have precisely stated foreign employment as an important tool for the reduction of poverty and the unemployment problem. The new Foreign Employment Act, 2007 was devised to ensure the safety of overseas employment, manage the migration process, and protect the rights and welfare

of migrant workers. This new legislation has eliminated gender discrimination in contrast to the previous law, which banned Nepalese women from working in Gulf States unless in the organized sector. The current act has allocated 10% of foreign employment opportunities to women, Dalits, indigenous people, the disadvantaged and people from remote areas. The 'Foreign Employment Welfare Fund' and 'Foreign Employment Judiciary Court' are also the provision of this new law.

The Ministry of Labour and Transport Management (MoLTM) is the apex organization responsible for designing the policies and programs related to all labour matters including foreign labour migration. The MoLTM is sub-divided into Department of Foreign Employment (DoFE) and Foreign Employment Promotion Board (FEPB), which works as the key implementing agency of government policies and programs. DoFE undertakes the main administrative activities, while FEPB undertakes welfare activities of overseas migrants.

The government of Nepal has taken a series of actions towards the promotion of foreign employment, such as decentralization of the passport issuing authorities after 2001. The opening up of Consulates and appointment of Labour Attaches in the major destinations are other key activities. The act has made provision of appointing Labour Attaches in those countries, which have received more than 5,000 Nepalese migrant workers. These Attaches look after the interests and welfare of the Nepalese migrant workers in different countries. Diplomatic relationships with the labour receiving countries have been strengthened with bilateral agreements. Nepal has made labour agreements with five different countries so far (NIDS, 2011). A labour desk has been set up at the international airport to help out-going migrants, which also maintains the database of migrant workers. The DoFE has prepared "Foreign Employment Policy", which is in the process of finalization (NIDS,

2011). The government of Nepal has listed 107 countries where Nepalese migrants can work legally.

7. Research design and methodology

This chapter is divided into three parts: the study area, research design and methodology of the study. The first section deals with the study area, rationale for selecting the study area, its physical and demographic characteristics, land use and comparison between two districts. The second part describes the research approach, which includes both qualitative and quantitative approaches. The third section presents the methodology on the data analysis with the application of econometrics.

7.1 Study area

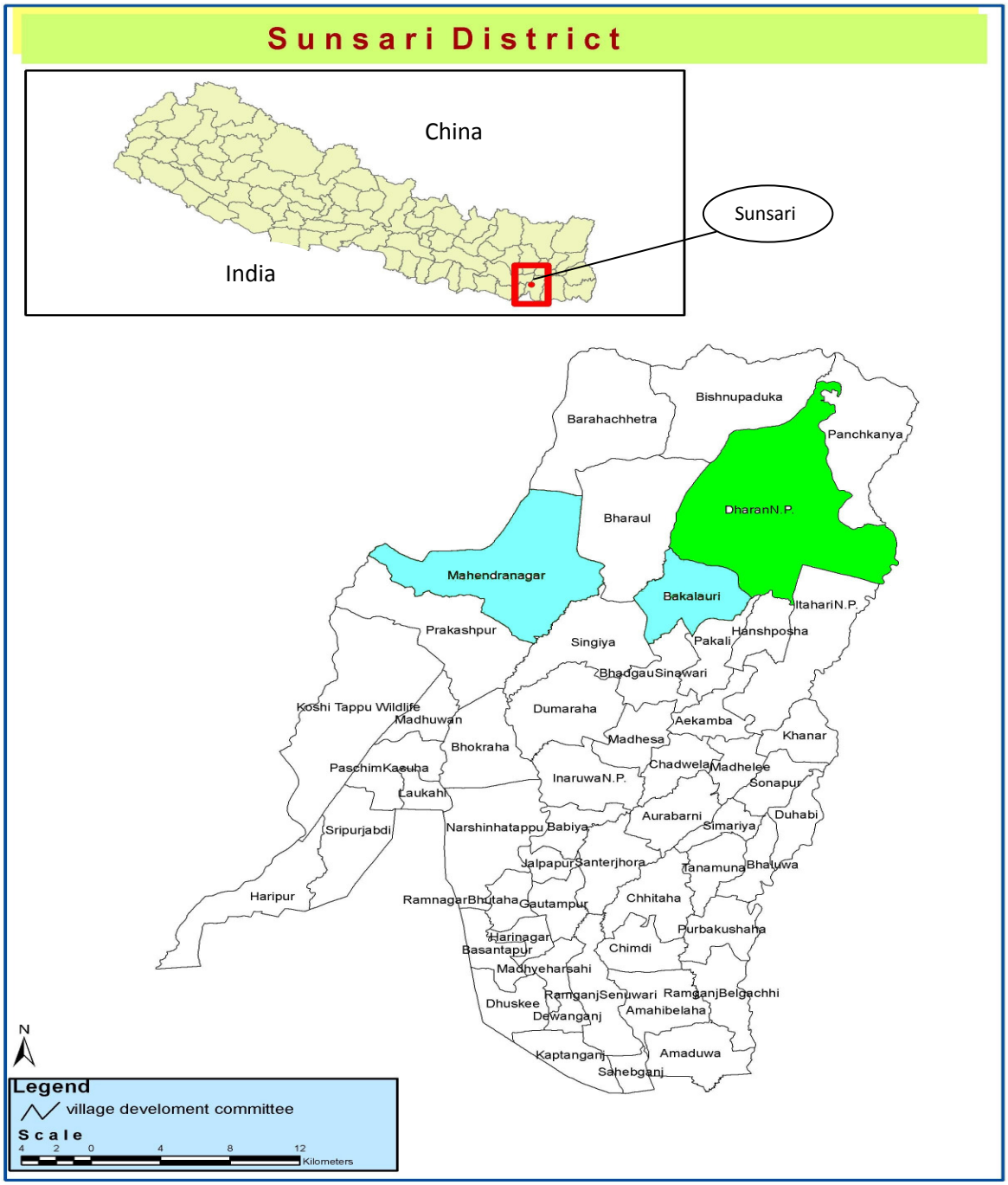
7.1.1 Selection of the study area

The Sunsari and Jhapa districts were selected purposely from the Eastern Development Region (EDR) of Nepal as a study area, which is adjacent to the border of India (see Figure 6.1 and Figure 6.2). The Sunsari district comprises 3 Municipalities and 49 village development committees (VDCs) and Jhapa district has 3 Municipalities and 47 VDCs. The VDC is the lowest administrative local body in Nepal. According to the author's personal view, the two districts from the same region have been selected because of their similar level of development compared to other districts in the Eastern region. They resemble similarities in terms of geo-physical condition, population, agriculture system and physical infrastructures. Moreover, the long history of the establishment of the British *Gorkha* Recruitment centre in the Sunsari district has been a strong influencing factor to choose these districts, as many of the people have migrated due to the influence of the British *Gorkha* Army. With the demonstration effect of the British *Gorkha* Army, people from this district had knowledge on labour migration to Singapore, Hong Kong, United Kingdom, Malaysia and India. The other factor for the selection was the researcher's acquaintance with the area. The two rural areas and one municipality from each district were selected to see the nature of out-

migration. In each district, one VDC adjoining the municipality and the second was selected considering the distant factor (which is at least 15-20 km away from the city). The main reason to select villages with respect to distance was to compare out-migration patterns between villages.

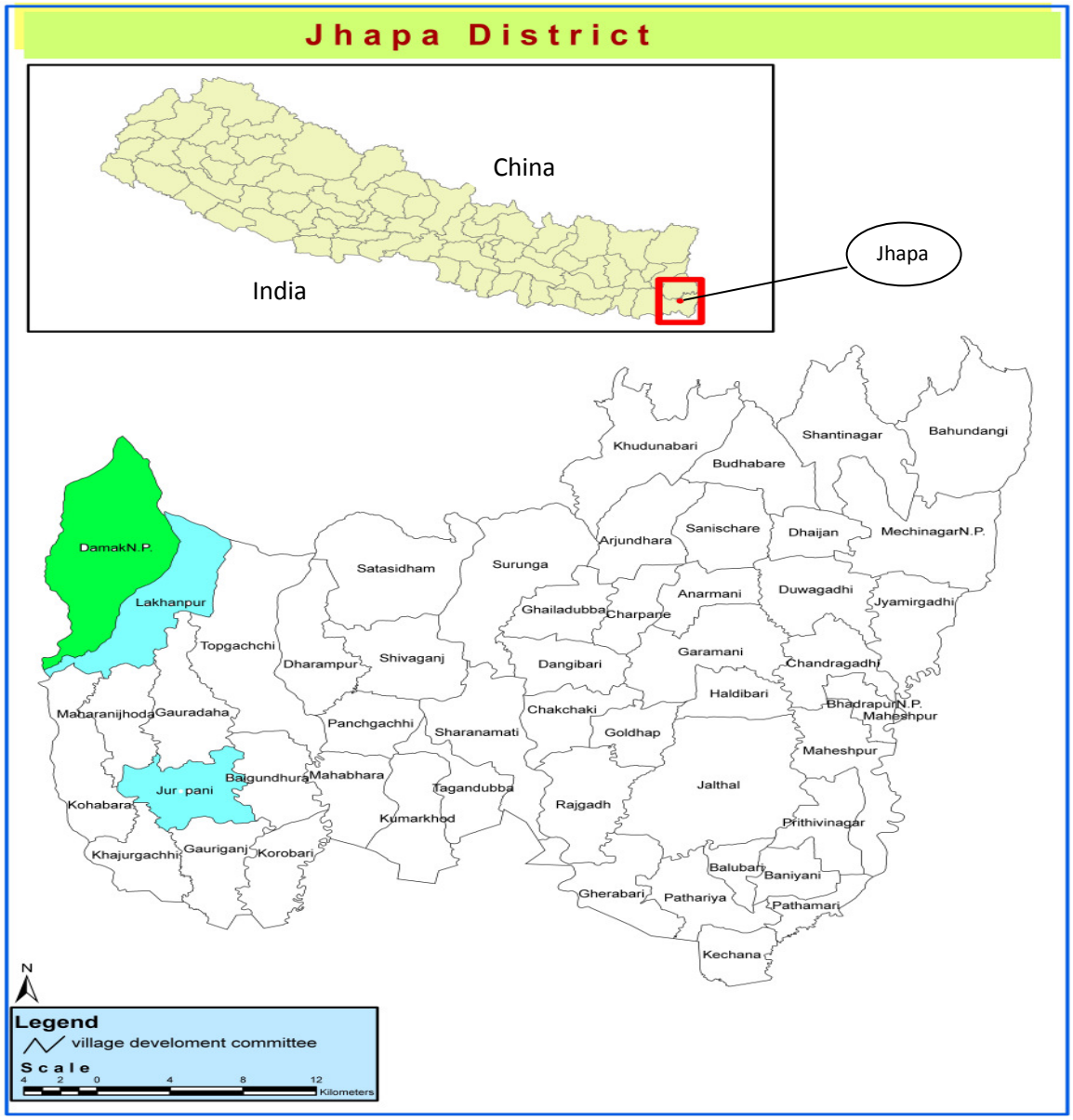
The objective of the study was to determine the likelihood of remittances receipt by the migrant households and to examine impacts of remittances on the remaining families. Moreover, the study also explains the households' probability of having migrants. International migration from Nepal can be categorised into three destinations, namely India, Gulf and East Asian countries, and other countries. Households are considered as the unit of analysis. Migrants' households are those of which one or more household members have migrated to any countries in the last 12 months preceding the survey.

Figure 7.1: Map of Sunsari district indicating sampled municipality and VDCs



Source: Department of Topography, 1997

Figure 7.2: Map of Jhapa district indicating sampled municipality and VDCs



Source: Department of Topography, 1997

7.1.2 Location and physical environment

The study districts, Jhapa and Sunsari, are situated in the *Tarai* (plain) region of Nepal. Jhapa is located approximately within 26º 20” and 26º 50” North latitude and 87 º39” and 88º 12” East longitude and has an area of 1606 sq. km. The elevation of the district ranges from 58-500 meters above the mean sea level. It is surrounded by the Indian border in the South and in the East. The temperature ranges from a minimum of 5º centigrade to a maximum of 35º centigrade (CBS, 2007).

Similarly, Sunsari is located approximately within 26º 23" and 26º 55" North latitude and 87º 5" and 87º 16" East longitude and has an area of 1257 sq. km. The elevation of the district ranges from 152-914 meters above the mean sea level. It is at the Indian border. The temperature ranges from a minimum of 10º centigrade to a maximum of 38º centigrade (CBS, 2007).

7.1.3 Demographic characteristics

The two districts differ in terms of demographic characteristics and the data were taken from the preliminary results of 2011 population census (Table 7.1). Jhapa has a higher population (810,636) than Sunsari (751,125). The average annual population growth rate in Sunsari (1.83) is higher than Jhapa (1.64). The population density and size of households are larger in Sunsari than Jhapa. Regarding the preliminary results of the 2011 census, the number (stock) of international migrants from Jhapa and Sunsari are 60,246 and 49,054 respectively. According to the author's personal observation, Sunsari is more developed than Jhapa in terms of educational establishments and industrialisation.

Table 7.1: Major demographic indicators of the study districts in 2011

Indicators	Sunsari	Jhapa
Population	751,125	810,636
Annual population growth rate (%)	1.83	1.64
Population density (persons per sq. km)	598	505
Average household size	4.51	4.31
International migration (stock)	49,054	60,246

Source: CBS, 2001 and CBS 2011

7.1.4 Development indicators

The International Centre for Integrated Mountain Development (ICIMOD) has prepared development indicators for all districts in Nepal (ICIMOD and CBS, 2003). The rank is conducted among 75 districts in the country, with 1 being the best and 75 being the worst. The report states that Jhapa stands in 3rd rank among all districts for the overall development index, while Sunsari remains in the 14th position (ICIMOD and CBS, 2003). The overall development index was created by aggregating poverty and deprivation index, socio-economic and infrastructure index and women empowerment index (see for details District of Nepal, 2003). The comparison of two districts were based on road density, banks density, telephone lines, drinking water coverage, electricity coverage, the literacy rate and urban population (Table 7.2). Road density was measured as the sum of different categories of road (in km) per 100 square kilometres of total surface area (ICIMOD and CBS, 2003). The road density in Jhapa and Sunsari were the same. Banks density was measured as the number of banks per 1000 population divided by population distance[19] (ICIMOD and CBS, 2003). The banks density was higher in Sunsari than in Jhapa. Generally, banks are established in industrial or urban areas to provide services to the business sector. Table 7.2 displays that, when compared with Jhapa, Sunsari has a higher degree of urban characteristics in terms of urban population, access to electricity and drinking water coverage. Drinking water coverage was measured as a percentage of households with access to piped (tap) or tube-well water for drinking purposes (ICIMOD and CBS, 2003). Overall literacy rate was measured as a literate population 6 years and above as a percent of the total population in the same group (ICIMOD and CBS, 2003). The literacy rate was higher in Jhapa (67.14%) than in Sunsari (60.65%).

[19] Population distance is the square root of the reciprocal of population density (ICIMOD, 2003).

Table 7.2: Development indicators of the district and their ranking

Indicators	Sunsari		Jhapa	
	Rank	Density/%	Rank	Density/%
Road density (km per 100 sq. km.)	7	37.5	8	37.4
Bank density (per 1000 person)	8	0.46	10	0.39
Telephone lines (per 1000 person)	8	17.5	11	8.6
Access to electricity (%)	24	42.7	32	32.7
Drinking water coverage (%)	5	95.7	33	82.8
Overall literacy rate (%)	17	60.65	6	67.14
Urban population (%)	5	25.5	15	16.1

Source: ICIMOD and CBS, 2003

7.2 Sampling unit

Following NELM, households were considered as the unit of analysis. The questionnaire survey interviewed both the migrants' and non-migrants' households in the origin areas. In the case of migrants' households, the absent members were those who were living in the same house before migration and who claim to join the household after the completion of migration. Either the head of the household or the spouse of the migrants was selected as a respondent for the survey, as they were assumed to have in-depth information on household matters and migrant characteristics.

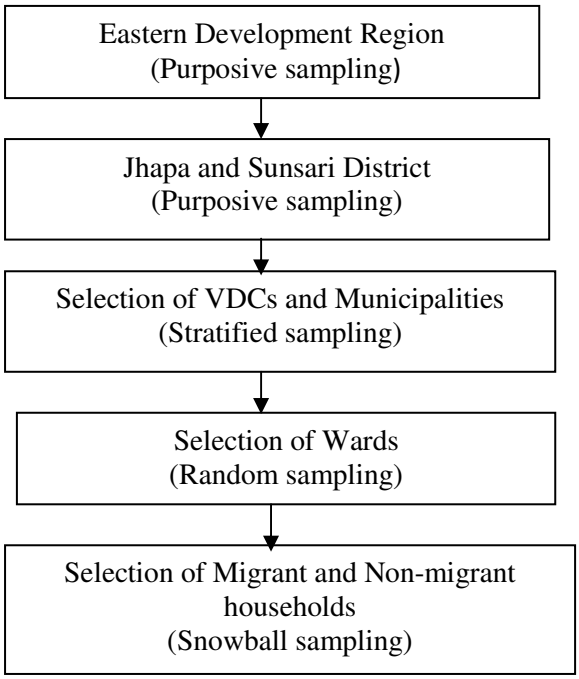
7.3 Sampling procedure and sample size

The first two districts, Sunsari and Jhapa, were selected purposively from the Eastern Development Region (EDR). They were further stratified into municipalities and village development committees (VDCs). Two rural areas and one urban area from each district were selected, using stratified sampling. Four VDCs, namely Lakhanpur, Juropani, Baklauri and Mahendranagar, and two municipalities, Damak and Dharan, were selected for the household survey in view of the high concentration of international migrants in these districts. Distance from the municipality was considered a major criterion to select rural areas. As such, one village was situated nearer the city and the other was situated farther away from the city. The urban and rural areas were considered as a part of the study to explore and compare international

migration patterns. They were further stratified into Wards, which is the smallest administrative unit in Nepal. These Wards were selected randomly.

Snowball sampling is often used when the population under investigation is hidden either due to low numbers of participants or sensitivity of the topic (Browne, 2005). It involves the use of referrals from initial informants to identify respondents who would be useful to include in the study. Following Massey et al. (2005), the author adopted snowball sampling, as the respondent households would not have been the random sample. The multi-stage sampling procedure applied in the study is described in Figure 7.3.

Figure 7.3: Multi stage sampling procedure



There was no database available on the number of migrants at the village or district level in Nepal. With the limitation of data, exact numbers of migrants were unknown in the field. In such conditions, a possible way to find the total number of migrants would have been by surveying all the households residing in the study area, but due to resource constraints, this was not possible. Considering, the small number of migrants' households with fragmentation of

their place of residence, it was not deemed necessary to determine the sample size using the standard statistical sampling formula (Thapa and Rattanasuteerakul, 2011). The head of the household or the spouse of the migrants, whoever available at house, was selected as respondents for the household interviews. Overall, the sample size of 542 households was accepted for statistical analysis, which consisted of 271 households from each district. Details on the sample size from each municipalities and villages are shown in Table 7.3.

Table 7.3: Surveyed households' sample sizes by districts in Eastern Nepal

District	Village/ Municipality*[20]	Migrant HH	Non-migrant HH	Sample HH
Jhapa	Damak*	57	84	141
	Lakhanpur	31	39	70
	Juropani	26	34	60
Sunsari	Dharan*	58	81	139
	Baklauri	20	47	67
	Mahendranagar	20	45	65
Total		212	330	542

Source: Author's calculation.

7.4 Data collection and processing

7.4.1 Primary data collection

The research is mainly based on the first hand information collected by the author in the field, with the help of four enumerators during July 2009 to December 2009. The distance between the two districts undertaken for the study was around 60 km. It was not possible for the researcher to collect all information by herself in the given limited time frame. Moreover, the nationwide and regional level strikes (*bandhs*) in the country at that time made problematic for the field visits. To overcome these problems and to gain rapport with the community people, local assistants were essential. Hence, the questionnaires were administered by four trained and highly qualified

[20] * refers to municipality.

enumerators. Two local enumerators had completed Bachelor studies and the other two were doing their Bachelor studies. All the enumerators had experiences on data collection. The researcher supervised the interviews and thoroughly checked the completed questionnaires.

The author made a reconnaissance survey prior to the field survey to become familiar with the community and area under study. Primary data was collected with structured questionnaires containing both closed and open-ended questions. The survey questionnaire covered the following topics:

- Households' demographic conditions
- Households' income and expenditures
- Households' asset
- Housing conditions
- Migrants' characteristics
- Channel and frequency of remittances
- Households' investments

Questionnaires were pre-tested before the household survey to check for appropriateness and relevance. After pre-testing of 15 questionnaires in Jhapa district, some modification on questionnaires were necessary. The open-ended questions were made close-ended as much as possible and some improvements in closed-ended questions were made with additional options relevant to the field settings. The questionnaire was initially developed in English language and was later on transcribed into the Nepali (local) language before the field survey. Although information regarding the use of remittance income was incorporated in the questionnaire, few respondents were able to answer all possible annual expenses made from remittances. Taylor (1999) points that remittances go to the same pot of household income, which makes it difficult to figure out which expenses were made from which sources of

income. This section was dropped from the questionnaire. Consequently, the researcher could not analyse the exact use of remittance income by migrant households. Additional information on village characteristics was obtained through key-informants interview with officials from District Development Office (DDO), District Agriculture Development Office (DADO) and Municipality.

7.4.2 Secondary data collection

Secondary data was collected from published and unpublished reports and documents, from various organizations in order to supplement primary data. The institutions visited during the data collection were Tribhuvan University Central Library (TUCL), Nepal Institute for Development Studies (NIDS), Department of Foreign Employment (DOFE), Central Bureau of Statistics (CBS), Nepal *Rastra* Bank (NRB), Nepal Association of Foreign Employment Agency (NAFEA), Federation of Nepalese Chambers of Commerce and Industry (FNCCI) and DADO in Jhapa and Sunsari Districts. The information provided by the CBS and NRB can be found on their websites. Some special data taken from the Population Census of Nepal conducted in 2001 by the CBS are almost outdated. However, researcher has considered such constraints encountered due to lack of updated information.

7.4.3 Limitations and constraints faced during field survey

The data collected relied on the self-reported information provided by the sample respondents on the basis of their recall. Households in Nepal do not maintain the log of income and expenses. Under such conditions, some information can either be misleading or missing. To avoid such situation, recall period for income and expenses were only made for one year. The second difficult issue encountered by the researcher was to get the exact information on income and remittances because respondents had fear of taxation and other issues of their money either being theft or being asked as a

ransom by various underground groups. This issue was solved with the hiring of local qualified enumerators who were able to gain trust from the community people. The sample respondents were convinced and made clear that the information provided by them would be merely used for the research purpose and would be kept confidential.

7.4.4 Data processing

After completion of the household survey, the filled questionnaires were checked for error, completeness and accuracy. Nevertheless, still 10 questionnaires were found incomplete, which belonged to both household categories. Hence, incomplete questionnaires were rejected for the analysis. The non-response rate was 1.8%. The other 14 migrant households with complete information were not included in the analysis because they had more than one migrant member in the household. It was not possible to compare households having one migrant member with households having two migrant members as the returns from migration were not uniform. Further, migrants' characteristics such as age, education, sex and amount remitted were considered in the study and having multiple migrants made the analysis complicated. Finally, 542 households were appropriate for the analysis.

The information collected from the survey was processed. Data processing involves editing, coding, classification and tabulation of collected data (Kothari, 2004). Editing of the data was done to identify and correct as much error as possible. Coding was done by assigning numerals to the answers. The raw data was classified into homogenous group for analysis. The information was then entered in Statistical Package for Social Sciences (SPSS) data sheet version 14.0 for windows. The entered data was converted to standard international measurement units before analysis.

7.5 Data analyses

Descriptive statistics such as mean, frequency distribution and percentage were used for comparing socio-economic conditions of migrants' and non-migrants' households. The sample households were grouped into 'migrant' and 'non-migrant' categories. The techniques of multivariate analysis such as logit and OLS were used for analytical purpose. The data analyses were analysed using both qualitative and quantitative techniques. The quantitative data was analysed by using both the SPSS 14 and STATA 9. The SPSS was used for descriptive analysis because of the ease in use. The STATA 9 was used for logit and OLS because it had added advantage of various statistical tests.

7.5.1 Logistic regression

The logistic regression can be applied when the criterion variable is dichotomous and predictor variables are categorical and/or continuous. The simplest way to estimate binary choice situation is the logit model, as probit model estimation is numerically complicated because it is based on the normal distribution. However, the predicted probabilities under both logistic and probit model always lie between 0 and 1, and yield almost same results. Long (1997) states that the choices between logit and probit depend on convenience and convention as the substantive results are generally identical. The logistic regression model is specified as follows:

$$\text{Ln}\,[p_i/(1-p_i)] = \beta_0 + \beta_1 X_{1i} + \ldots\ldots\ldots + \beta_k X_{ki} \qquad (5)$$

where subscript i denotes the i-th observation in the sample, p is the probability of the outcome, β_0 is the intercept term; and $\beta_{1....}$ β_k are the coefficients associated with each independent variable $X_{1....}$ $X_{k.}$ (Neupane, Sharma and Thapa, 2002; Thapa and Rattanasuteerakul, 2011).

Determinants of migration and remittances

Several researchers have explained the determinants of migration using logit or multinomial logit models (Bhandari, 2004; Bohra and Massey, 2009; Gray, 2009). This study applies logistic regression as the dependent variable takes the category of one for households having migrants and zero otherwise. The explanatory variables are household demographic characteristics, physical capital, social capital, and regional dummies.

Some of the authors have applied tobit model to estimate the determinants of remittances (Ahlburg and Brown, 1998; Schrieder and Knerr, 2000; Amuedo-Dorantes and Pozo, 2006). Several authors have pointed out the remittance behaviour of migrants, and have applied the logistic regression model to see the likelihood of households receiving remittances (Itzigsohn, 1995; Menjivar, Da Vanzo and Greenwell, 1998; Sana and Massey, 2005; Pfau and Giang, 2010; Campbell, 2010). Although the tobit model offers a simple way, this study applies the logit model for the determinants of remittances because the dependent variables take the category of one for households receiving international remittances and zero otherwise. The explanatory variables are household characteristics, physical capital and regional characteristics. The social capital variable has been excluded from the remittances model because it was not considered important.

The determinant of migration and remittances are generated separately by the following functional relationships:

Migration = f (Household characteristics, physical capital, social capital, regional dummies) (6)

Remittances = f (Household characteristics, physical capital, regional dummies) (7)

The model of the logistic regression characterizing the determinants of migration and remittances are specified separately by the following formulae:

$M_1 = \beta_0 + \beta X$ (8)

$R_1 = \beta_0 + \beta X$ (9)

where,

M_1 = Migration (1=Migration, 0=No migration)

R_1= Remittances (1=Remittances, 0=No remittances)

$\boldsymbol{\beta}$ = vector of parameters

$\beta_1 \ldots \beta_{32}$ = regression coefficients of explanatory variables

X = the design matrix

$X_1 \ldots . X_{32}$ = explanatory variables

The X-variables involved in the logit model for the determinants of migration and remittances are described in Table 7.4 with their expected signs. The results for migration and remittances are presented together in a subsequent chapter.

Description of variables for migration and remittances

Dependent variables

Migration: Migration is an outcome variable, which takes value of 1 if a household has a migrant, 0 otherwise.

Remittances: Remittances is an outcome variable, which takes value of 1 if a household has received remittances in the last 12 months, 0 otherwise

Explanatory or Independent variables

Household characteristics

Age of household head: Head of the household can play a significant role in household decision matters in Nepal. The presence of an older household head can encourage migration of another household member. Following Adams (2005), it is considered that older household heads may have children of a prime age group who can migrate for work. It is hypothesized to have positive sign for migration and remittances.

Age square of head: Following Ezra and Kiros (2001), age square is included to see whether age-specific migration rises with age at first, peaks and declines at old age.

Female headship: Generally, Nepalese society is patriarchal. Male or aged people are considered the heads of the household. Households with female heads can take care of the household members and manage the household chore by letting other members migrate for work. Hence, female-headship is expected to have a positive relationship with migration and remittances.

Household size: Following Sana and Massey (2005) and Quinn (2006), household members who are currently away from the households as migrants are also included to compute household size. Household labour availability is related to the household size. In this study, household size is further classified into several components in terms of age and sex of the household members in order to examine possible age and gender roles in migration decision. As a result, household members are classified into young dependents, other dependents, young women, young men, adult women and adult men.

Young dependents: Young dependents are those up to 4 years old. Having more children means one may need to migrate to meet the needs of the children. This variable is expected to have a positive association with migration and remittances.

Other dependents: All other dependents include children aged between 5-14 years and members above 60 years. The children are not allowed to work. The members above 60 years, who are economically inactive, can work in household labour. These two age groups can encourage economically active people in the households to migrate. This variable is expected to have a positive relationship with migration and remittances.

Young women: Higher number of economically active female population within 15-29 age groups in the household increases the probability of migration. Women of this age group belong to the prime working age, which can migrate for work. This variable is expected to have a positive association with migration and remittances.

Young men: Higher number of economically active male population within 15-29 age groups increases the probability of migration. Due to the limited employment opportunities in Nepal, this age group prefers to migrate for work. This variable is expected to have a positive relationship with migration and remittances.

Adult women: Higher number of economically active female population within 30-60 age groups increases the probability of migration. Most women of this age group are engaged in taking care of family and their offspring allowing male or other members to migrate. It is hypothesized to have a positive relationship with migration and remittances.

Adult men: Higher number of economically active male population within 30-60 age groups increases the probability of migration. This age group feels the responsibility of taking care of one's own family. It is hypothesized to have a positive relationship with migration and remittances.

Occupation of household head: The occupation of household heads is categorized into six groups: agriculture, services, trade/business, wage earner,

others, and unemployed. Five dummy variables are created (services, trade/business, wage earner, others, and unemployed), with occupation of head in agriculture as the reference group[21]. Occupation of the household head as unemployed, wage earner and others is considered to have a negative influence on migration and remittances. Household heads, engaged in services, trade or business, are expected to have positive influences on migration and remittances because they can provide information and resources to other members to migrate.

Ethnicity: Ethnicity is categorized into five groups: Brahman/Chhetri, Hill Janajati, Tarai Janajati, Newar, and Hill/Tarai Dalit. The Brahman/Chhetri ethnicity belongs to the higher hierarchy according to the Hindu religion. The Hill/Tarai Dalits are relatively deprived and disadvantaged groups in Nepal. Brahman/Chhetri people are considered as the reference group. Prior migration experience and people who served in the British *Gorkha* come from the Hill Janajati ethnic group. The Hill Janajati variable is hypothesized to have a positive influence on both migration and remittances. Because these groups have served in the British *Gorkha*, their dominance continues. The first plan of the members of the Hill Janajati group is to join the British army. However, if they fail to join, then they move to other countries for work. All other ethnic groups are expected to have a negative relationship with migration and remittances.

Family structure: Family structure is divided into two categories: nuclear and extended. The nuclear family is taken as the reference category. Having an extended family can influence migration as the younger members of prime working age can migrate for work, keeping older people or other members at home who can take care of the remaining family members. Extended families

[21] Reference category is a baseline category. This study chose a baseline category for each categorical variable with k categories, using k-1 dummy variables for each category, and then contrasted all remaining categories with the baseline.

are expected to have a positive relationship on both migration and remittances.

Social capital

Family's previous international migration experiences: A family's previous international migration experience includes migration experiences in a family, including extended family members who had migrated internationally in the last 20 years. Prior micro-studies claim that migration network influences an individual's decision to migrate (Gőrlich and Trebesch, 2006; Bohra-Mishra, 2011), as the prospective migrant can have a better understanding regarding the cost and benefits of migrating to various destinations. If the households have relatives as an international migrant, it would increase migration because the prospective migrants are well informed and help in reducing the transaction cost. This variable is expected to have a positive relationship with migration and remittances.

Physical capital

Landholding: Land can be a productive resource which can provide earning to households in agricultural settings. It also ascertains socio-economic status in the Nepalese society. Landholding can trigger out-migration or reduce out-migration. It is considered that landholding can influence migration decision as the family can afford migration costs by selling or mortgaging the land. The size of landholding is expected to have a positive relationship with migration and remittances.

Square of landholdings: A quadratic term of landholding is added to test for nonlinearities.

Asset index: The asset index was prepared by noting the presence of certain durable consumer goods including TV, cassette player or radio, DVD player,

computer, camera, mobile phone, land phone, electric fan, electric iron, rice cooker, refrigerator, mixer grinder, cooking liquid gas, bio-gas, bicycle and motorcycle. Each item was given a value of 1 when it was in the possession of the household (and 0 otherwise). The index is the sum of all scores and takes the value of 0 for households with none of these items and 16 for households having all of them. The procedure closely follows the one used by de Haas (2006) and Ponce, Olivié and Onofa (2010). The asset index ascertains the economic status of the household. The higher the index, the wealthier the families are. Hence, this variable is expected to have a positive relationship with migration and remittances.

Household debt: Taking a loan from a formal or an informal source helps people to supplement their livelihoods or to make investments. Borrowing is common in rural and urban areas of Nepal. Having household debt would decrease international migration, as international migration is an expensive venture. This variable is expected to have a negative relationship with migration and remittances.

Housing structure: Housing structure is categorized into four groups: permanent, semi-permanent, temporary, and other structures. Housing structure reflects the status of a household in the society in Nepal. Permanent and semi-permanent housing structure requires a higher investment than temporary and other structures. Permanent structure of housing is the reference group. Semi-permanent housing is expected to have a positive relationship with migration and remittances because households with semi-permanent housing are considered well-off families. Households with temporary and other structures are expected to have a negative relationship with migration and remittances.

Household human capital

Education of household head: An educated household head can have in-depth knowledge in employment opportunities and transmit information (Vanwey, 2003; Barbieri and Carr, 2005) to the household members. Therefore, education of the household head is expected to have a positive effect on migration and remittances.

Education square of a household head: A quadratic term of education is added to test for nonlinearities and to allow for effects to be initially positive, then negative, or vice-versa.

Number of adults with higher secondary education: Higher secondary education refers to the number of adults in the household who have completed 10 years of schooling. With this schooling certificate, they can join a college or high school in Nepal. This school leaving certificate (SLC) is the minimum requirement for an individual to enter the job market in Nepal. It is likely that people with higher secondary education or higher level will have high incentives to migrate because they can find jobs easily. Adults with higher secondary education are expected to have a positive association with migration and remittances.

Region

District: The study has used regional characteristics to control the locality effects on migration and remittances. Sunsari district is considered as the reference category. It has a higher level of industrialisation whereas Jhapa is more rural in nature with a lower level of urbanisation and industrialisation. This could increase international migration for work from Jhapa because residents have less probability of getting absorbed in the local labour market. This variable is hypothesized to have a positive relationship on migration and remittances.

Area: A dummy variable for the area is included, using urban area as the reference category. The urban centre generally provides employment in secondary and tertiary sectors, whereas in rural areas people are engaged more in the primary sector. Due to limited employment opportunities available in the rural areas, people migrate in search of work. The rural area is expected to have a positive effect on migration and remittances.

Table 7.4: Description of variables for migration and remittances with prediction

Variables	Description	No. in the questionnaire	Exp. sign for Migration	Exp. sign for Remittances
Dependent Variables				
Migration	1 if HH has a migrant, 0 otherwise			
Remittances	1 if HH receives remittances, 0 otherwise			
Independent Variables				
Household characteristics				
Age (X_1)	Age of the HH head in years	Q1.2	+	+
Age square (X_2)	Age square of head	Q1.2	-	-
Sex of head (X_3)	1 if head is female, 0 otherwise	Q1.3	+	+
Young dependents (X_4)	Number of dependents aged 0-4 years	Q2	+	+
Other dependents (X_5)	Number of dependents aged 5-14 and 60+ years	Q2	+	+
Young women (X_6)	Number of female aged 15-29 years	Q2	+	+
Adult women (X_7)	Number of female aged 30-60 years	Q2	+	+
Young men (X_8)	Number of male aged 15-29 years	Q2	+	+
Adult men (X_9)	Number of male aged 30-60 years	Q2	+	+
Occupation of household head				
Farming*	1 if head engaged in agriculture, 0 otherwise			
Business (X_{10})	1 if head engaged in business, 0 otherwise	Q1.5	+	+
Services (X_{11})	1 if head engaged in services, 0 otherwise	Q1.5	+	+
Wage earner (X_{12})	1 if head engaged as wage earner, 0 otherwise	Q1.5	-	-
Others (X_{13})	1 if head engaged as other, 0 otherwise	Q1.5	-	-
Unemployed (X_{14})	1 if head unemployed, 0 otherwise	Q1.5	-	-
Ethnicity/Caste				
Brahman/Chhetri*	1 if Brahman/Chhetri, 0			
Newar (X_{15})	1 if Newar, 0 otherwise	Q1.7	+	+
Hill Janajati (X_{16})	1 if Hill Janajati, 0 otherwise	Q1.7	-	-
Tarai Janajati (X_{17})	1 if Tarai Janajati, 0 otherwise	Q1.7	-	-
Hill/Tarai Dalit (X_{18})	1 if Hill/Tarai Dalit, 0 otherwise	Q1.7	-	-
Family structure				

Variables	Description	No. in the questionnaire	Exp. sign for Migration	Exp. sign for Remittances
Nuclear family*	1 if nuclear family, 0 otherwise			
Extended family (X_{19})	1 if extended family, 0 otherwise	Q1.8	+	+
Human capital				
Education of head (X_{20})	Schooling of head in years	Q1.4	+	+
Education square	Square of schooling	Q1.4	+	+
Adult with higher education (X_{22})	Number of adults with higher education	Q2	+	+
Social capital#[22]				
Family's previous international migration experience (X_{23})	1 if extended family member migrated outside Nepal, 0 otherwise	Q10	+	
Physical capital				
Landholding X_{24})	Landholding size in hectare	Q3.9	+	+
Landholding square	Square of landholding	Q3.9	-	-
Asset index(X_{26})	Average of number of household durable goods (scale from 0-16)	Q7	+	+
Household debt (X_{27})	1 if household is indebted, 0 otherwise	Q13	-	-
Housing structure				
Permanent structure*	1 if permanent structure, 0 otherwise			
Semi-permanent structure (X_{28})	1 if semi-permanent structure, 0 otherwise	Q3.8	+	+
Temporary structure (X_{29})	1 if temporary structure, 0 otherwise	Q3.8	-	-
Other structure (X_{30})	1 if others, 0 otherwise	Q3.8	-	-
Area				
District (X_{31})	1 if Jhapa, 0 otherwise	Q1.9	+	+
Rural (X_{32})	1 if rural, 0 otherwise	Q1.10	+	+

*reference group

Determinants of investment (land, house and business ownership)

The outcome variables, which are purchase of land, construction or renovation of house, and business ownership, are also binary variables. The logistic regression is applied in this study as the dependent variables take the

[22] # The social capital variable has not been included in the model of determinants of remittances.

category of one for households having investments in the last five years and zero otherwise.

The determinants of investment in land, housing and business are generated by the following functional relationship:

Household investment in land, housing and business= f (Household characteristics, physical capital, regional dummies, remittances)

The model of the logistic regression characterizing the determinants of investment for land, housing and business ownership are specified separately by the following formulae:

$$I_1 = \beta_0 + \mathbf{\beta Z} \quad (10)$$

$$I_2 = \beta_0 + \mathbf{\beta Z} \quad (11)$$

$$I_3 = \beta_0 + \mathbf{\beta Z} \quad (12)$$

where

$\mathbf{I_1}$ = Investment in land (1=Investment. 0=No investment)

$\mathbf{I_2}$ = Investment in housing (1=Investment. 0=No investment)

$\mathbf{I_3}$ = Investment in business ownership (1=Investment. 0=No investment)

$\mathbf{\beta}$ = vector of parameters

$\beta_1 \ldots \beta_k$ = regression coefficients of explanatory variables

$\mathbf{Z}$ = design matrix

$Z_1 \ldots . Z_{30}$ = explanatory variables.

The analyses are based on equations 10, 11 and 12, which examine the likelihood of investment by households. All the investments are considered with a time frame of the last five years (Osili, 2004). The results of each

model are presented together in chapter 9. The Z-variables involved in the logit model for the determinants of the investment are described in Table 7.5 with their expected signs.

Description of variables for investments

Dependent variables

Investment in land: Investment in land is an outcome variable, which takes value of 1 if a household has invested in land in the last five years, 0 otherwise.

Investment in housing: Investment in housing is an outcome variable, which takes value of 1 if a household has invested in house renovation or construction in the last five years, 0 otherwise.

Investment in business ownership: Investment in business ownership is an outcome variable, which takes value of 1 if a household has invested in business ownership in the last five years, 0 otherwise.

Explanatory or Independent variables

Household characteristics

Age of household head: The head of the household can play a significant role in household decision matters in Nepal. The presence of an older head of household can encourage investments. It is hypothesized to have positive signs for all types of investment.

Age square of head: Following Ezra and Kiros (2001), the study included age square to see whether age-specific migration rises with age at first, then peaks and declines at old age.

Female-headed household: Female-headed households are those households having migrants (spouse) and more funds for investment. It is expected to have positive signs for all types of investment.

Household size: Household labour availability is related to the household size. In this study, household size is further classified into several components in terms of age and sex of the household members, in order to examine possible age and gender roles in investments. As a result, household members are classified into young dependents, other dependents, young women, young men, adult women and adult men.

Young dependents: Young dependents are those up to 4 years old. Having more children means a family may need more resources. Households with a large number of young dependents may not have the resources to make investments. It is expected to have a negative relationship with all kinds of investment.

Other dependents: All other dependents include children aged between 5-14 years and members above 60 years. The children are not allowed to work and the members above 60 years are economically inactive. They are found working in household labour. Households having large numbers of other dependents may not have capital to make investments. This variable is expected to have a negative association with all kinds of investment.

Young women: Higher number of economically active female population within 15-29 age groups decreases the probability of investments by households. Women in this age group may not possess the capital to make investments. This variable is expected to have a negative association for all types of investment.

Young men: Higher number of economically active male population within 15-29 age groups decreases the probability of investments. Men in this age

group are young, and less likely to possess the capital to make investments. This variable is expected to have a negative relationship with all types of investment.

Adult women: Higher number of economically active female population within 30-60 age groups increases the probability of investments. Women in this age group may possess capital and savings either from the husband's earning or from migration which can be invested for future use. It is hypothesized to have a positive relationship with all kinds of investment.

Adult men: Higher number of economically active male population within the 30-60 age groups increases the probability of investments. They are more likely to possess skills, capital and savings, which can be converted into investments. Moreover, people of this age group who are employed, or can be self-employed, can make investments. It is hypothesized to have a positive relationship with all kinds of investment.

Occupation of household head: The occupation of household heads is categorized into three broad groups: agriculture, non-agriculture and unemployed. Two dummy variables are created (non-agriculture and unemployed) with occupation of household head in agriculture as a reference group. Occupation of household head as unemployed is considered to have a negative influence on all kind of investments. Household heads engaged in non-agriculture sectors are expected to have a positive influence on investments.

Ethnicity: Newars have been involved in business throughout the history of Nepal. Hill/Tarai Dalits are relatively deprived and disadvantaged groups in Nepal. Brahman/Chhetri is considered as a reference group. Hill Janajati and Newar are hypothesized to have a positive influence on all kinds of

investment. All other ethnic groups are expected to have a negative relationship with investments.

Family structure: Nuclear family is taken as a reference category. Having an extended family can influence investments, as there are more members in households who can be self-employed. Extended family is expected to have a positive influence on all kinds of investment.

Physical capital

Landholding: Land ascertains socio-economic status in the Nepalese society. The size of the landholding can help households to invest as they can sell or mortgage it. This variable is expected to have a positive relationship with all kinds of investment.

Square of landholdings: A quadratic term of landholding is added to test for nonlinearities.

Asset index: The asset index ascertains the economic status of the household. The higher the index, the wealthier the families are. Hence, this variable is expected to have a positive relationship with all kinds of investment.

Household debt: Taking a loan from a formal and/or an informal source helps people to supplement their livelihoods or to make investments. Borrowing is common in rural and urban areas of Nepal. Household debt can be used for investment. This variable is expected to have a positive relationship with all kinds of investment.

Housing structure: Permanent structure of housing is the reference group. Semi-permanent housing is expected to have positive relationship with investments, as they are considered well-off families. While temporary and other structures are expected to have a negative relationship with all kinds of investment.

Remittances: This study excluded income quintile and added remittances variable in the model to see its effects on investments. Remittance is a dummy variable, taking a value of 1, if a household has received money from the household members in the last 12 months, 0 otherwise. Remittances can be supplemental income to the household, which can be used for investments. It is expected to have a positive relationship with all kinds of investment.

Education of household head: Educated household heads can have better knowledge about investments and their possible returns. Therefore, education of household heads is expected to have a positive relationship with all kinds of investment.

Education square of a household head: A quadratic term of education is added to test for nonlinearities and to allow for the effects to be initially positive, then negative, or vice-versa.

Number of adults with higher secondary education: Households having large number of adults with higher secondary education can be self-employed. This variable is only included in the model of investment in business ownership. It is expected to have a positive relationship with business ownership.

Region

District: Sunsari district is considered as the reference category. With limited employment opportunities in Jhapa, households can invest in non-farm activities or in any other forms of investment. This variable is hypothesized to have a positive relationship with all kinds of investment.

Area: A dummy variable for area is included, using the urban area as the reference category. The urban centre generally provides employment in secondary and tertiary sectors, whereas in rural areas people are engaged more in the primary sector. Households in rural areas are engaged more in

farming, and invest in farms or non-farm activities. This variable is expected to have positive effects on all kinds of investment.

Table 7.5: Description of variables for investments in land, housing and business ownership with prediction

Variables	Description	No. in the questionnaire	Expected sign
Outcome variables			
Investment in land ($\mathbf{I_1}$)	1 if household have invested in land, 0 otherwise		
Investment in house construction/renovation ($\mathbf{I_2}$)	1 if household have invested in house construction/renovation, 0 otherwise		
Investment in business/enterprise ($\mathbf{I_3}$)	1 if household have invested in business/enterprise, 0 otherwise		
Independent variables			
Received remittances (Z_1)	1 if household received remittances, 0 otherwise	Q14	+
Household characteristics			
Age (Z_2)	Age of the household head in years	Q1.2	+
Age square (Z_3)	Age squared of head	Q1.2	-
Sex of head (Z_4)	1 if household head is female, 0 otherwise	Q1.3	+
Very young dependents (Z_5)	Number of dependents aged 0-4 years	Q2	-
Young dependents (Z_6)	Number of dependents aged 5-15 years	Q2	-
Other dependents (Z_7)	Number of dependent aged above 60	Q2	-
Young women (Z_8)	Number of female aged 15-29 years	Q2	-
Young men (Z_9)	Number of male aged 15-29 years	Q2	-
Adult women (Z_{10})	Number of female aged 30-60 years	Q2	+
Adult men (Z_{11})	Number of male aged 30-60 years	Q2	+
Occupation of household head			
Farming*	1 if head engaged in agriculture, 0		
Non-agriculture (Z_{12})	1 if head engaged in non-agriculture, 0	Q1.5	+
Unemployed (Z_{13})	1 if head unemployed, 0 otherwise	Q1.5	-
Ethnicity/Caste group			
Brahman/Chhetri*	1 if Brahman/Chhetri, 0 otherwise		
Newar (Z_{14})	1 if Hill Newar, 0 otherwise	Q1.7	+
Hill Janajati (Z_{15})	1 if Hill Janajati, 0 otherwise	Q1.7	+
Tarai Janajati(Z_{16})	1 if Tarai Janajati, 0 otherwise	Q1.7	-
Hill/Tarai Dalit(Z_{17})	1 if Hill/Tarai Dalit, 0 otherwise	Q1.7	-
Family structure			
Nuclear family*	1 if nuclear family, 0 otherwise		
Extended family(Z_{18})	1 if extended family, 0 otherwise	Q1.8	+
Human capital			
Education of head (Z_{19})	Schooling of household head in years	Q1.4	+
Education square (Z_{20})	Square of schooling	Q1.4	-

Variables	Description	No. in the questionnaire	Expected sign
Adult with higher education (Z_{21})	Number of adults with higher education	Q2	+
Physical capital			
Landholding (Z_{22})	Landholding in hectares	Q3.9	+
Landholding square (Z_{23})	Square of landholding	Q3.9	-
Asset index (Z_{24})	Average of number of household durable goods (scale from 0-16)	Q7	+
Household debt (Z_{25})	1 if household is indebted, 0 otherwise	Q13	+
Housing structure			
Permanent structure*	1 if permanent structure, 0 otherwise		
Semi-permanent (Z_{26})	1 if semi-permanent structure, 0 otherwise	Q3.8	+
Temporary (Z_{27})	1 if temporary structure, 0 otherwise	Q3.8	-
Others (Z_{28})	1 if others, 0 otherwise	Q3.8	-
Region			
Location/Area			
District (Z_{29})	1 if Jhapa, 0 otherwise	Q1.9	+
Rural (Z_{30})	1 if rural, 0 otherwise	Q1.1	-

*reference group

7.5.2 Multiple linear regression model

This study applies multiple linear regression models to examine the effects of remittances on households' expenditure patterns. The model is described as:

$$Y=a+b_1X_1+b_2X_2+.....+ b_kX_k+ \epsilon \quad (13)$$

where Y is the dependent variable or explained variable, and X_1, $.....X_k$ are the independent or explanatory variables. The term a is constant, $b_1 \ldots b_k$ are the coefficients of the independent variables and ϵ is a residual.

Determinants of household expenditure on food, education and health

The second objective of the study was to examine the relationship between remittances and household expenditure patterns. The dependent variable includes households' annual expenditures on food, education and healthcare. The main purpose of this analysis is to see whether remittances appear as a

significant explanatory variable in the household expenditures. The results of other annual household expenditures are: expenditures on festival, clothing, travel and total expenditures. They are presented in the annex (see Table A13-Table A16), as these variables were not significant with remittances.

The determinants of household expenditures on food, education and health take the same functional form as households' other expenditures. The results on other expenditures are presented in the annex. The functional relationship of the model is written as:

Household's annual expenditure = f (Household characteristics, physical capital, regional dummies, remittances) (14)

The equation for the model is expressed as follows:

$$E_1 = \beta_0 + \boldsymbol{\beta_1}\mathbf{M} + \epsilon_1 \quad (15)$$

$$E_2 = \beta_0 + \boldsymbol{\beta_2}\mathbf{M} + \epsilon_2 \quad (16)$$

$$E_3 = \beta_0 + \boldsymbol{\beta_3}\mathbf{M} + \epsilon_3 \quad (17)$$

where

E_1 = Household's annual expenditure on food in NRs.

E_2 = Household's annual expenditure on education in NRs.

E_3 = Household's annual expenditure on healthcare in NRs.

β_0 = Constant

$\beta_1 \ldots \beta_k$ = regression coefficients of explanatory variables

M = the design matrix

The details of M variables involved in regression are presented in Table 7.6 with its description. The results of expenditure on food, education and healthcare are presented together in chapter 9.

Description of variables for household expenditures

Dependent variables

Household's annual expenditure on food: Household's annual expenditure on food is an outcome variable.

Household's annual expenditure on education: Household's annual expenditure on education is an outcome variable.

Household's annual expenditure on healthcare: Household's annual expenditure on healthcare is an outcome variable.

Explanatory or Independent variables

Remittances: Remittance is a dummy variable, taking a value of 1, if a household has received money from the household members in the last 12 months, 0 otherwise. Remittances can be supplemental income to the household, which can be used to smoothen household expenditures. It is expected to have positive relationships with all kinds of expenditure.

Household characteristics

Age of household head: The head of the household can play a significant role in household decision matters in Nepal. The age of the household head is hypothesized to have positive relationships with all kinds of expenditure.

Female headship: Households with female heads can spend more on expenditure because they are involved with financial matters after the migration of their spouse. But most of the migrants have control over the resources. As a result, female-headship is expected to have negative relationships with expenditure.

Household size: In this model, household members who are currently away from the households as migrants are not included to compute household size.

The household size is further classified into several components in terms of age and sex of the household members in order to examine possible age and gender roles in various household expenditures. As a result, household members are classified into young dependents, other dependents, young women, young men, adult women and adult men.

Young dependents: Young dependents are those up to 4 years old. Having more children means one may need more resources to maintain the family. This variable is expected to have a positive association with all kinds of expenditure.

Other dependents: All other dependents include children aged between 5-14 years and members above 60 years. Higher number of other dependents in a household requires more resources to maintain the family. This variable is hypothesized to have a positive relationship with all kinds of expenditure.

Young women: Higher number of economically active female population within 15-29 age groups in the household increases the household expenditures as they need more resources. This variable is expected to have a positive association with all kinds of expenditure.

Young men: Higher number of economically active male population within 15-29 age groups increases the household expenditures as they need more resources. This variable is expected to have a positive association with all kinds of expenditure.

Adult women: Higher number of economically active female population within 30-60 age groups increases the household expenditures as they need more resources. This variable is hypothesized to have a positive association with all kinds of expenditure.

Adult men: Higher number of economically active male population within 30-60 age groups increases the household expenditures as they need more resources. This variable is expected to have a positive association with all kinds of expenditure.

Occupation of household head: Two dummy variables are created (non-agriculture and unemployed) with occupation of household head in agriculture as the reference group[23]. Occupation of heads as unemployed are expected to have a negative influence on all kinds of expenditure. Household heads engaged in non-agriculture sectors are expected to have positive influences on all kinds of expenditure, because they are capable to spend.

Ethnicity: Brahman/Chhetri is considered as the reference group. Hill/Tarai Dalits are relatively deprived and disadvantaged groups and are expected to have a negative relationship with all kinds of expenditure. Likewise, Tarai Janajati is also hypothesized to have a negative association with all kinds of expenditure. Hill Janajati and Newar ethnicity variables are hypothesized to have a positive influence on all kinds of expenditure.

Family structure: Nuclear family is taken as a reference category. Having an extended family may require more resources to meet the need of a family. Extended family is expected to have a positive relationship on all kinds of expenditure.

Physical capital

Landholding: Landholding decreases expenditures on food. Farm households in Nepal follow subsistence agriculture. Landholding size is hypothesized to have a negative association with food expenditure and positive relationships with education and healthcare expenditures.

[23] Reference category is a baseline category. This study chose a baseline category for each categorical variable with k categories, using k-1 dummy variables for each category, and then contrasted all remaining categories with the baseline.

Square of landholdings: A quadratic term of landholding is added to test for nonlinearities.

Asset index: The asset index ascertains the economic status of the household. The higher the index, the wealthier the families are. Hence, this variable is expected to have a positive relationship with all kinds of expenditure.

Household debt: Taking a loan from a formal or an informal source helps people to supplement their livelihoods. Borrowing is common in rural and urban areas of Nepal. This variable is expected to have a positive relationship with all kinds of expenditure.

Housing structure: Permanent structure of housing is the reference group. Semi-permanent housing is expected to have a positive relationship with all kinds of expenditure because they are considered well-off families. Temporary and other structures are expected to have a negative relationship with all kinds of expenditure.

Income quintile: Households' income was calculated from six various sources: agriculture, services, trade or business, rent, wages and pension. Remittances were excluded from the total household income. After computation of household income, households were ranked and split into quintiles to capture how migration and remittance receipt varies across households at different points of the income distribution. The first income quintile is the reference category which is the poorest. Income quintiles, in the fourth and fifth groups, are wealthier and are expected to have positive effects with all kinds of expenditure. Household in second and third income quintiles are expected to have negative effects on all kinds of expenditure.

Household human capital

Education of household head: Education of household head is expected to have positive relationships with all kinds of expenditure.

Number of adults with higher secondary education: Adults with higher secondary education are expected to have a positive association with all kinds of expenditure.

Region

District: The study has used regional characteristics to control the locality effects on household expenditures. Sunsari district is considered as the reference category. It has a higher level of industrialisation whereas Jhapa is more rural in nature with a lower level of urbanisation and industrialisation. This variable is hypothesized to have negative relationships with all kinds of expenditure.

Area: A dummy variable for area is included, using the urban area as the reference category. Rural area is expected to have negative relationships with all kinds of expenditure.

Table 7.6: Description of variables for food, education and health expenditures with prediction

Variables	Description	No. in the questionnaire	Exp. sign
Outcome variables			
Food expenditure (E_1)	Household's annual expenditure on food (NRs.)		
Educational expenditure (E_2)	Household's annual expenditure on education (NRs.)		
Heath care expenditure (E_3)	Household's annual expenditure on health care (NRs.)		
Independent Variables			
Remittances (M_1)	1 if household received remittances, 0 otherwise	Q1.4	+
Household characteristics			
Age (M_2)	Age of the household head in years	Q1.2	+
Sex of head (M_3)	1 if household head is female, 0 otherwise	Q1.3	-
Young dependents (M_4)	Number of dependents aged 0-4 years	Q2	+
Other dependents (M_5)	Number of dependents aged 5-14 and 60+ years	Q2	+
Young women (M_6)	Number of female aged 15-29 years	Q2	+
Young men (M_7)	Number of male aged 15-29 years	Q2	+
Adult women(M_8)	Number of female aged 30-60 years	Q2	+
Adult men (M_9)	Number of male aged 30-60 years	Q2	+
Employment sector of head			
Farming*	1 if head engaged in agriculture, 0 otherwise		
Non-agriculture(M_{10})	1 if head engaged in non-agriculture, 0 otherwise	Q1.5	+
Unemployed(M_{11})	1 if head unemployed, 0 otherwise	Q1.5	-
Ethnicity/Caste group			
Brahman/Chhetri*	1 if Brahman/Chhetri, 0 otherwise		
Newar (M_{12})	1 if Newar, 0 otherwise	Q1.7	+
Hill Janajati (M_{13})	1 if Hill Janajati, 0 otherwise	Q1.7	+
Tarai Janajati(M_{14})	1 if Tarai Janajati, 0 otherwise	Q1.7	_
Hill/Tarai Dalit(M_{15})	1 if Hill/Tarai Dalit, 0 otherwise	Q1.7	_
Family structure			
Nuclear family*	1 if nuclear family, 0 otherwise		
Extended family (M_{16})	1 if extended family, 0 otherwise	Q1.8	+
Human capital			
Education of head (M_{17})	Schooling of household head in years	Q1.4	+
Adult with higher education (M_{18})	Number of adults with higher education	Q2	+
Physical capital			
Landholding(M_{19})	Landholding size in hectare	Q3.9	+
Landholding square (M_{20})	Square of landholding	Q3.9	-

Variables	Description	No. in the questionnaire	Exp. sign
Asset index (M_{21})	Average of number of household durable goods (scale from 0-16)	Q7	+
Household debt (M_{22})	1 if household is indebted, 0 otherwise	Q13	+
Housing structure			
Permanent *	1 if permanent structure, 0 otherwise		
Semi-permanent (M_{23})	1 if semi-permanent structure, 0 otherwise	Q3.8	+
Temporary (M_{24})	1 if temporary structure, 0 otherwise	Q3.8	-
Other (M_{25})	1 if others, 0 otherwise	Q3.8	-
Income quintile			
Quintile 1*	1 if household belongs to 1st quintile, 0 otherwise		
Quintile 2(M_{26})	1 if household belongs to 2nd quintile, 0 otherwise	Q8	-
Quintile 3(M_{27})	1 if household belongs to 3rd quintile, 0 otherwise	Q8	-
Quintile 4(M_{28})	1 if household belongs to 4th quintile, 0 otherwise	Q8	+
Quintile 5(M_{29})	1 if household belongs to 5th quintile, 0 otherwise	Q8	+
Region			
Location/Area			
District (M_{30})	1 if Jhapa, 0 otherwise	Q1.9	-
Rural (M_{31})	1 if rural, 0 otherwise	Q1.10	-

*reference group

7.5.3 Dealing with heteroskedasticity

When the standard deviations of a variable are not constant, heteroskedasticity appears. It takes the form of changes in variance. Some econometricians have shown the possible problem of heteroskedasticity in cross sectional data. Vanwey (2003, 2004) has used robust standard errors in logistic regression while analysing determinants of migration and remittances. Following the strategy applied by some researchers (Vanwey 2003; 2004; Gray 2009) robust standard errors were used to avoid the problem of heteroskedasticity.

7.5.4 Indicator and methodology

The overall objective of the study is to find the impact of remittances on left-behind families. It also aims to find out the spending pattern of migrants' and non-migrants' households. The specific research questions of the study as related to the objectives are:

1. What are the factors that determine the likelihood of a household to receive remittances from abroad?
2. What are the differences in the spending pattern of migrants' and non-migrants' households?
3. What is the effect of remittances in the purchase of land and house renovation/or construction?
4. What is the effect of remittances in the establishment of business ownerships?

Table 7.7 provides the indicators and methodology to be applied in order to achieve the set objectives.

Table 7.7: Objectives, indicators and methodology

Objective	Indicator	Methodology
To find the determinants of migration.	Probability of households to have migrants	Logit analysis
To find the determinants of remittances.	Probability of households to receive remittances	Logit analysis
To find out the impact of remittances on food, education, and healthcare.	Household expenses on food	OLS
	Household expenses on education	
	Household expenses on healthcare	OLS
To find out the impact of remittances on investments.	Probability of households' investment in land	Logit Analysis
	Probability of households' investment in housing	Logit Analysis
	Probability of households' investment in business ownership	Logit Analysis

8. Descriptive analyses of surveyed households

This chapter presents the descriptive results from the field study. Major household characteristics are grouped according to the migration status of the household. Migrants' and non-migrants' households are compared to provide basis for the empirical analysis implemented in the following chapters. The information presented comprises frequency, mean, percentage and cross tabulations.

8.1 Socio-economic characteristics of the household head

The major socio-economic characteristics of the respondents' households include age, sex, education, occupation of the head, ethnicity and family type. Table 8.1 shows salient characteristics of the households' head by migration status in the two districts under study. The average age of household head in migrants' households was 44.5 years, while same for non-migrants' households was 46.5 years. In all surveyed households, the share of female-headed households was found higher in migrants' households (49%), than non-migrants' households (5%). The female headship was prevalent in migrants' households because in absence of male spouse, females were the *de facto* head. In Nepal, generally senior and male members are considered as a household head, which can be explained partly by patriarchal customs practiced in the society. Migrants' households head had (5.7 years of schooling) lower level of human capital than their counterparts, non-migrants' households (7.6 years of schooling) due to those with higher education having migrated, leaving the non-educated or poorly qualified at home.

Table 8.1: Characteristics of the household head by migration status

Items	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Average age of household head (years)	44.5	47.3	44.5	45.6	44.5	46.5
Female headed household (%)	44.0	5.0	54.0	5.0	49.0	5.0
Education of head (years of schooling)	6.5	7.5	5.0	7.8	5.7	7.6

Source: Author's survey, 2009

The differences in occupation of heads were observed in migrants' and non-migrants' households (Table 8.2). In Jhapa district, the share of the household heads engaged in agriculture was highest across all household categories. This reflects the contribution of agriculture sector in maintaining households' livelihood. The share of household heads engaged in agriculture was 3% higher in migrants' households than that of non-migrants' households. This difference was occurred as most of the household heads in Jhapa were engaged in agriculture. In both districts, almost 30% of migrants' households head were unemployed. This can be the effect of remittances or they may belong as senior citizens who are no more economically active. The share of household heads engaged in business was 5% higher in non-migrants' households than that of migrants' households. Likewise, the share of household heads engaged in services was 16% higher in non-migrants' households than that of migrants' households. This implies that non-migrants' households are securing their livelihoods through business and services.

Table 8.2: Employment sector of HH head by migration status (% of all households)

Major Occupation	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Agriculture	21	27	47	36	35	32
Service	15	29	6	24	10	26
Business	28	24	9	21	18	23
Wage earner	2	10	4	9	3	9
Others	4	6	2	4	3	5
Unemployed	30	4	32	6	31	5
Total	100	100	100	100	100	100

Source: Author's survey, 2009

Ethnicity is divided into five groups. Table 8.3 presents the ethnic composition and family structure in the region. The share of Brahman/Chhetri ethnicity was higher in both migrants' (52%) and non-migrants' households (61%) in the region. Likewise, the share of Hill Janajati ethnicity belongs to the second highest group in both categories of households. This ethnic group has been involved in labour migration throughout history for their participation in the British Army. Today, these groups still dominate enrolment in the British Army. The shares of Tarai Janajati and Hill/Tarai Dalit ethnicity were 3% and 2% larger in migrants' households than non-migrants' households. Tarai Janajati ethnic groups are the indigenous people, who are engaged in farming and related activities. Hill/Tarai Dalits are disadvantaged groups who are deprived of many things needed for basic survival and are ranked lower in the hierarchy of the Hindu caste system. Looking into family structure, the majority of households across all household types belongs to a nuclear family.

Table 8.3: Ethnic composition and family structure by migration status (% of all HH)

Ethnicity (%)	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Brahman/Chhetri	43	51	59	71	52	61
Newar	17	9	4	3	10	06
Hill Janajati	32	24	25	13	28	18
Tarai Janajati	1	8	9	8	05	08
Hill/Tarai Dalit	7	8	3	5	05	07
Total	100	100	100	100	100	100
Family Structure (%)						
Nuclear	72	70	74	83	73	76
Extended	28	30	26	17	27	24
Total	100	100	100	100	100	100

Source: Author's survey, 2009

8.2 Composition of surveyed households

The composition of households involves household size, dependents, young women, young men, adult women and adult men. The numbers of adults who have completed higher secondary education are also included in Table 8.4. Following Quinn (2006), this study included household members who were currently away from the households, such as migrants to compute the household size and the household compositions.

Table 8.4: Household size, age composition and average number of adults with higher education by migration status

	Sunsari		Jhapa		Total	
Items	**Migrant (N=98)**	**Non-migrant (N=173)**	**Migrant (N=114)**	**Non-migrant (N=157)**	**Migrant (N=212)**	**Non-migrant (N=330)**
Size of household (No. of persons)	5.07	5.14	5.25	4.87	5.18	5.01
Dependents (0-14 & > 60 years)	1.27	1.34	1.68	1.49	1.49	1.41
Young women (15-29 years)	0.82	0.87	0.76	0.72	0.79	0.80
Young men (15-29 years)	0.85	0.80	0.80	0.68	0.82	0.74
Adult women (30-60 years)	1.01	1.06	0.97	0.97	0.99	1.02
Adult men (30-60 years)	1.10	1.07	1.04	1.01	1.07	1.04
Number of adults with higher secondary education	2.20	2.23	1.55	1.71	1.85	1.98

Source: Author's survey, 2009

The differences in household compositions were observed in migrants' and non-migrants' households. Overall, average size of migrants' households (5.18) was higher than non-migrants' households (5.01) in the region (Table 8.4). The average numbers of dependents in migrants' households (1.49) were higher than non-migrants' households (1.41). Likewise, the average number of young men and adult men were higher in migrants' households than non-migrants' households. However, the average number of young women and adult women were found to be higher in non-migrants' households than migrants' households. The average number of adults with higher secondary education was higher in non-migrants' households (1.98) than migrants' households (1.85). The reason for a low level of human capital (education) among adults in migrants' households was not known.

8.3 Physical capital

Physical capital includes landholding, asset index, livestock holding, and housing structures. The procedure to construct an asset index has been discussed in the former chapter. The higher the asset index, wealthier the

households are. There was no major difference in the distribution of land among migrants' and non-migrants' households (Table 8.5). The average land holding among migrants' and non-migrants' households stood 0.51 hectares and 0.54 hectares respectively, which is less than the national average of 0.7 hectares (CBS, 2011). Both migrants' and non-migrants' households were found operating less land than what they hold. The difference between landholding and land operation was observed larger in migrants' households than their counterparts, non-migrants' households. This could be the reflection of loss of family labour due to migration and use of remittances for leisure. However, the size of land operation has decreased in non-migrants' households also. It can be implied that the effects of migration and remittances are not only the reasons for decreased land operation. Migrants' households have higher asset index than non-migrants' households in the region.

Table 8.5: Average household land holding size and asset index by migration status

Assets	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Land holding (hectares)	0.35	0.47	0.65	0.61	0.51	0.54
Land operated (hectares)	0.16	0.38	0.50	0.51	0.34	0.44
Asset index	9.07	8.40	7.81	7.92	8.39	8.17

Source: Author's survey, 2009

Livestock are crucial assets for the farm household. The livestock holding in the district includes cattle, buffalo, goats and pigs (see Table 8.6). For many, livestock ownership is the only form of savings available. It provides a critical reserve against emergency and decreases vulnerability to various shocks and risks. All categories of livestock were found higher in non-migrants' households than migrants' households. The main reason for larger number of

livestock holdings in non-migrants' households can be due to the availability of family labour who can take care of livestock.

Table 8.6: Average livestock holding by household migration status (in numbers)

Livestock	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Cow	0.67	0.93	0.56	0.65	0.61	0.80
Buffalo	0.13	0.25	0.14	0.14	0.14	0.20
Ox	0.40	0.55	0.49	0.51	0.45	0.53
Calf	0.57	0.76	0.38	0.29	0.47	0.54
Goat	1.21	1.66	1.25	1.29	1.24	1.48
Pig	0.19	0.34	0.14	0.14	0.17	0.24

Source: Author's survey, 2009

Housing structure was divided into four groups. Table 8.7 presents the type of housing structures available in the region. The share of home ownership with permanent, semi-permanent and temporary structures were roughly identical among migrants' households in Sunsari district. The share of migrants' households, who had a house with a permanent structure, was 1% bigger than that of non-migrants' households. The share of non-migrants' households, who had a house with a semi-permanent structure, was 6% larger than that of migrants' households. Almost 40% of the surveyed households in the region had a house with a temporary structure, and its share was dominant compared to other housing structures.

Table 8.7: Housing structure by household migration status (% of all households)

Housing structure	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Permanent	33	26	31	38	31	32
Semi-Permanent	33	22	25	22	28	22
Temporary	33	43	39	36	37	40
Other	1	9	5	4	4	6
Total	100	100	100	100	100	100

Source: Author's survey, 2009

8.4 Loan

Table 8.8 presents details on loan and purpose of loan. The respondents were asked to answer more than one reason for taking a loan. Due to the multiple answers, the reasons for loan do not round up to 100%. More than 50% of households were found indebted in the region. Higher proportions of non-migrants' households in Sunsari were indebted to meet daily consumption needs than their counterpart migrants' households. While the higher share of migrants' households in Jhapa were indebted for daily consumption than non-migrants' households. Almost 50% of migrants' households had borrowed money for financing migration in Sunsari, while the same for Jhapa was about 20%. The share of non-migrants' households, who had borrowed money for educational expenses, was 4% larger than the migrants' households in the region. The share of migrants' households, indebted for buying land/house, was found larger than their non-migrants' households in both districts. About 40% of the households had borrowed money for the purpose of the establishment or expansion of business in the region. The share of non-migrants' households, who had borrowed money for agricultural activities, was 12% bigger than the migrants' households in the region. Almost 11% of migrants' households in the region had borrowed money to buy a vehicle, which was 9% higher than migrants' households. This shows that migrants'

households were investing in a vehicle, which would provide supplement income and employment opportunities.

Table 8.8: Outstanding loan and purpose of loan by household migration status (Multiple responses in % of all respondents)

Items	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Share of HH indebted	58.2	54.3	43.0	55.4	50.0	54.8
Purpose of Loan (%)						
Daily consumption	8.8	19.1	30.6	23.0	18.9	21.0
Financing Migration	47.4	2.1	22.4	2.3	35.8	2.2
Education	12.3	17.0	8.2	11.5	10.4	14.4
Buy land/ house	15.8	13.8	38.8	24.1	26.4	18.8
Business	21.1	38.3	12.2	39.1	17.0	38.7
Farming	14.0	29.8	8.2	17.2	11.3	23.8
Vehicle	0	3.2	2.0	0	10.9	1.7
Social events	5.3	5.3	2.0	5.7	3.8	5.5

Source: Author's survey, 2009

8.5 Social capital

The relationship between social capital and migration illustrates positive relation (Mora and Taylor, 2006; van Dalen, Groenewold and Schoorl, 2005). Social capital was measured in the form of family's previous international migration experiences. Family refers to all the members in the households along with the members from extended family. The network, which migrant possess, can help them to reduce transaction cost. In both districts, more than 30% of migrants' households had previous international migration experiences in the family (Table 8.9). This indicates the effects of family's previous international migration experiences in triggering out-migration. It can also be the result of demonstration effects of migrants, which helped to persuade migration. 3% of non-migrants' households had previous international migration experiences.

Table 8.9: Previous international migration experience (% of all households)

Social capital	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Family's previous international migration experiences	32	1	31	5	31	3

Source: Author's survey, 2009

8.6 Migrants' characteristics

Individual characteristics considered are age, sex, marital status and education (Table 8.10). The average age of migrants in the region was 33.3 years with a minimum of 15 to maximum of 55 years. Usually people below 16 years of age from poor household migrate to India for work, as it requires no official papers to work and travel to India. Migrants from Sunsari had an average education of 10.2 years of schooling, which was higher than of Jhapa (9.1 years). The migrants had an average of 9.6 years of schooling in the region, which reflected a low level of human capital. According to NIDS (2009), 75% of labour migrants from Nepal are unskilled and 25% are semi-skilled. It can be concluded from the data that Nepal is deploying mainly unskilled labours.

Table 8.10: Migrants' individual characteristics (% of all migrant households)

Characteristics	Sunsari (N=98)		Jhapa (N=114)		Total
	Average	SD	Average	SD	
Age of migrants (years)	33.7	7.9	32.93	7.2	33.3
Education of migrants (years of schooling)	10.2	3.4	9.1	3.8	9.6

Source: Author's survey, 2009

Table 8.11 presents the share of male migrants, marital status, their occupation before migration, and previous international migration experiences. The majority of migrants were male (94%) in the region. The

Jhapa district had 99% of male migrants, while Sunsari had 88% of male migrants. The difference in the gendered pattern of migration was observed in two districts. The urban nature of Sunsari district, with easy access to information and openness in the society, has resulted in more female migration compared to Jhapa. The other important factor for dominance of male migration is a patriarchal society. Moreover, the Foreign Employment Act had also created some reservation for female migration. Most of the migrants (74%) in the surveyed households were married. This can be partly explained as a need to shoulder responsibility of family after being married, in Nepalese context. The majority of the migrants (56.2%) in Sunsari were unemployed, while 32% of migrants from Jhapa were unemployed before migration. Most of the migrants from Jhapa were engaged in agriculture (45%), compared to other occupation categories. The information from the table reflects that economically active populations from Jhapa were transferred from agricultural sector to non-agricultural sector by adopting migration. Almost 17% of migrants had previous international migration experience. The duration of migration (5.2 years) was higher in Jhapa than the migrants' (3.8 years) from Sunsari districts. The observed differences on duration of migration were mainly due to a continuous migration taken by the migrants with a longer span of time from Jhapa district.

Table 8.11: Male, married and occupation of migrants

Characteristics	Sunsari (N=98)	Jhapa (N=114)	Total
Male migrants (%)	88.0	99.0	94.0
Married migrants (%)	71.0	75.0	74.0
Occupation sector* (%)			
Agriculture	12.2	44.7	29.7
Non-agriculture	31.6	23.7	27.4
Unemployed	56.2	31.6	42.9
Total	100.0	100.0	100.0
Previous international migration experience (%)	8.0	24.0	17.0
Duration of migration (years)	3.8	5.2	4.5

* Occupation before migration
Source: Author's survey, 2009

8.7 Reasons for international migration

It is a well-known fact that migration occurs for economic and non-economic reasons. As elsewhere, migration from Nepal is mostly for economic reasons, primarily for work (Lokshin, Bontch-Osmolovski and Glinskaya, 2010). The survey questionnaire included pre–coded set of multiple answers to know the reasons for migration. The answers for all possible reasons for migration do not round up to 100%, due to the multiple answers provided by the respondents. An overwhelming majority of migrants' households stated that savings/capital accumulation (61.4%) followed by low income (37.8%) as the most pronounced reasons for international migration (Table 8.12). Savings/capital accumulation was the first main reason for international migration from Sunsari. Most of the migrants' households (50%) stated low income as a major reason for international migration from Jhapa. Political instability and the low economic growth was one of the reasons for increasing migration at macro-level from Nepal (NIDS, 2006). Almost 20% of migrants' households in the region informed unemployment as a reason for migration. This result corroborate with Shrestha (2008) who posited increasing unemployment and low salary structure as a major factor responsible for out-migration in Nepal.

Table 8.12: Reasons for international migration (Multiple responses in % of respondents)

Reasons	Sunsari (N=98)	Jhapa (N=114)	Total (N=212)
Low income	25.5	50.0	37.8
Unemployment	15.3	25.4	20.4
Savings/capital accumulation	86.7	36.0	61.4
Education of own or family members	39.8	14.0	26.9
Repayment of loan	2.0	5.3	3.7

Source: Author's survey, 2009

8.8 Migration process

Social networks and institutions can play a major role in facilitating migration. According to the Foreign Employment Act of Nepal, migration occurs in two ways, namely: institutional and individual. Manpower Agency also referred as a recruitment agency, is a legal institution established to facilitate labour migration from Nepal. The majority (66%) of migrants used the channel of Manpower Agency to induce migration (Table 8.13). About 18% of migrants had used brokers (*Dalal*) to facilitate migration. These brokers or middlemen are individuals placed either in local area or in the capital city, who bridge prospective migrants with the recruitment agencies. Prospective migrants trust the agents because they belong to the same villages or urban areas where migrants come from. The brokers finally take the prospective migrants to the Manpower Agency for migration. However, in a recent study about the Qatar-Nepal remittances corridor, the World Bank confirms the use of broker clouds the migration process and generates additional fees (World Bank, 2011). When the migrant workers have used Manpower Agency for a channel of migration, they are called institutional migration. Migrants can also use their social networks to promote migration with the help of relatives or friends/neighbours, who have already migrated. Usually, this help is in the form of sending the work visa from the destination

countries. The prospective migrants do not need to present him or her in the destination country to get a work visa. The migration, which takes place with the help of relatives or friends, is classified under individual migration. However, all migrant workers have to obtain an approval from the Department of Foreign Employment (DOFE) for labour migration, whether they migrate through institution or at an individual level. The proportion of migrants' households using relatives was higher in Jhapa (14.9%) than in Sunsari (6.1%) district (Table 8.14). Almost 10.5% of migrants had used the individual channel of migration with the help of relatives in the region. In this case, the prospective migrants have no fear of being cheated.

Table 8.13: Channels adopted for migration (% of all migrant households)

Channel of migration	Sunsari (N=98)	Jhapa (N=114)	Total (N=212)
Manpower Agency	79.6	54.4	66.0
Broker	14.3	21.9	18.1
Relatives	6.1	14.9	10.5
Friends/Neighbor	0	8.8	4.4

Source: Author's survey, 2009

8.9 Migration costs

International migration incurs costs regarding passport, visa, medical check-ups, fees for recruiting companies, travelling and settling down. The amount of migration costs depends on the choice of destinations. Returned migrants and migrants' households reported the costs of migration to some destinations, such as Saudi Arabia, UAE, Qatar, Malaysia, Kuwait and India. The cost of migration to Saudi Arabia ranged from NRs. 85,000-95,000, UAE NRs. 80,000-110,000, Qatar NRs. 100,000-110,000, Malaysia NRs. 85,000-90,000, Kuwait NRs. 50,000-70,000 and India NRs. 1,000-3,000 in 2009. The results regarding costs of migration were triangulated with the representative of recruitment agencies, which came to the close figure. It was also found that migrants end up paying NRs 5,000-10,000 more, when the brokers or middlemen at local level were used in the migration process. The returned

migrants and migrants' households also informed that it takes on average around 4-6 months' salary of Nepalese workers to recover the cost of migration. The Government of Nepal has set a ceiling for the total cost of migration. According to World Bank (2011), Manpower Agencies are allowed to collect fees up to NRs 70,000 (US$ 958) to send workers to Qatar. However, in practice it was found that total cost of migration for Nepalese workers to Qatar averaged of US$ 1,216. The study conducted by World Bank found that Nepalese workers over-pay in migration fees to Manpower Agencies (World Bank, 2011). A field survey on Nepalese migrant in Qatar found that 43% of respondents had used local moneylenders to cover their migration costs at exorbitant interest rate ranging from 24% to 36%. Consequently, remittances sent by the migrant workers during the first year were used to repay their migration loans (World Bank, 2011). However, the field survey found that migrants fear of being cheated and pays additional cost by taking the service of local agents who are based in the villages or town. The migrants can reduce this cost by directly contacting the recruiting agencies, which are based in the city.

8.10 Destination of migrants

Destination of migrants displays a dynamic pattern in Nepal. The majority of migrants are destined to Middle-East countries (Table 8.14). The construction boom in the Gulf countries, which started in the 1970s, with the oil boom, has provided new opportunities for Nepalese migrant workers. The most favoured destinations for the Nepalese migrant workers from Jhapa were UAE and Qatar followed by Malaysia. While the higher proportion of migrants from Sunsari were destined to Qatar followed by UAE. The highest proportions of migrants in the region were destined to Qatar followed by UAE, Saudi Arabia and Malaysia. Migration to other countries includes Hong Kong, Singapore, Iraq, Oman, Japan, the US, the UK and Australia.

Table 8.14: Destination of migrants from Eastern Nepal (% of migrant households)

Destinations	Sunsari (N=98)	Jhapa (N=114)	Total (N=212)
Saudi Arabia	15.3	14.9	15.1
Malaysia	14.4	16.7	15.6
UAE	20.4	21.1	20.7
Qatar	23.5	21.1	22.3
Kuwait	7.1	3.5	5.3
India	2.0	10.5	6.2
Others	17.3	12.2	14.8

Source: Author's survey, 2009

8.11 Remittance and transfer channels

Table 8.15 presents the average remittances, channel and frequency of remittances according to district. More than 95% of migrants' households report receiving remittances in 2009. Temporary migrants tend to remit more, as they wish to return after the completion of their contract. Migrants' households on average received NRs. 175,877 annually. Average annual remittances received by migrants' households from Jhapa (NRs. 192,903) were higher than those from Sunsari (NRs. 156,071). Remittances also differ according to the destination of migrants. Migrants from Malaysia on average remitted annually NRs. 133,909, Saudi Arabia NRs. 219,344, Qatar NRs. 169,202, UAE NRs. 172,864 Kuwait NRs. 145,710, India NRs. 141,420 and others NRs. 207,968 in 2009. Almost 90% of migrants' households received money from the money transfer operators (MTOs), such as Western Union, Prabhu Money Transfer etc., which are established in local area. The majority of migrants' households in Sunsari received money in every six months, while migrants' households in Jhapa received on quarterly basis.

Table 8.15: Average remittances, channel and frequency of remittances by district (% of migrant households)

Remittances	Sunsari (N=98)	Jhapa (N=114)	Total (N=212)
Remittance receiving HH (% of migrant HH)	94.9	95.6	95.3
Average remittances (NRs)	156,071.43	192,902.85	175,877.00
Channel of remittances (%)			
Hand carried	0	5.3	2.6
Money transfer operators (MTOs)	92.9	82.4	87.7
Hundi	1	0.9	0.9
Bank	1	7.0	4.0
Did not send	5.1	4.4	4.8
Total	**100**	**100**	**100**
Frequency of remittances (%)			
Monthly	2.0	3.5	2.8
Bi-monthly	13.3	1.8	7.5
Quarterly	28.6	47.4	38.0
Half yearly	46.9	14.0	30.4
Yearly	0	1.8	0.9
No fixed schedule	4.1	27.1	15.6
Did not send	5.1	4.4	4.8
Total	**100**	**100**	**100**

Source: Author's survey, 2009

8.12 Impact of migration on households' socio-economic conditions

Following Semyonov and Gordzeisky (2008), socio-economic conditions were based on the subjective evaluation of households' economic position derived from respondents' assessment with regard to standard of living and capability to meet their needs. It was expressed in terms of categorical outcome. The majority of migrants' households (81.6%) informed that their socio-economic conditions had improved after migration (Table 8.16). This result is consistent with the empirical studies in developing world which have shown significant improvement in socio-economic conditions of migrant families back home due to migration (Koc and Onan 2004; Semyonov and Gordzeisky, 2004). Almost 20% of migrants' households stated no change in their socio-economic conditions, while none mentioned deteriorating

condition due to migration. With this information, it can be implied that migration has been able to create a win-win condition at the household level.

Table 8.16: Impact on socio-economic conditions of migrant households after migration (% of migrant households)

Socio-economic conditions	Sunsari (N=98)	Jhapa (N=114)	Total (N=212)
Improved	87.8	76.3	81.6
Same	12.2	23.7	18.4

Source: Author's survey, 2009

8.13 Household income and expenditures

Household income was composed from the following major income sources: namely, agriculture and livestock, services, trade/business, rent, wages and pension. Incomes from remittances were not included in the household income. Per capita household income was computed by dividing average household income with average number of person living in the households. In Sunsari, remittances accounts for 23.5% of the total household income whereas in Jhapa it accounts for 31.3% (not included in the table). The average household income for migrants' households was NRs. 233,614, while for non-migrants' households was NRs. 155,832 (Table 8.17). Migrants' households enjoyed relatively higher per capita income than non-migrants' households. For all households, cash income from service was substantially more important than the other income sources. The share of income from agriculture is higher in non-migrants' households than migrants' households, in both districts. Likewise, income from business was higher in non-migrants' households than migrants' households. This can reflect the involvement of non-migrants' households into business ownership, which can be flourishing due to remittances and high demand for such services by migrants' households. The information from the table clarifies the importance of

agriculture, service and business sector for the livelihoods of non-migrants' households.

Table 8.17: Annual average household and per capita income in NRs

Income Source	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant	Migrant (N=114)	Non-migrant	Migrant (N=212)	Non-migrant (N=330)
Agriculture	15,229	21,289	21,799	22,623	18,762	21,924
Services	38,694	85,523	10,930	66,589	23,285	76,515
Business	31,894	48,658	10,039	68,107	20,621	57,911
Rent	6,198	5,501	8,516	12,545	7,474	8,852
Wages	612	8,052	1,983	4,697	1,350	6,456
Pension	7,347	7,908	3,053	4,104	5,038	6,098
Total	240,816	155,640	227,423	156,043	233,614	155,832
Per capita income	58,451	30,280	51,923	32,042	54,839	31,104

Source: Author's survey, 2009

Table 8.18 shows the average annual household and per capita expenses. Six food and non-food items were included to construct annual household expenditures: food, education, health, clothing, travel and festival. Food occupies the highest share of total expenditures followed by education among all type of household categories in both districts. The amount of expenditure on food is almost half of the total expenditures for all household categories. The average household expenditure for migrants' households was NRs. 114,717, while for non-migrants' households was NRs. 108,082. Per capita household expenditure was computed by dividing the average household expenditure with average number of person living in the household. Migrants' households were found spending higher amount on food, education and healthcare than non-migrants' households in both districts and in the region as well. While non-migrants' households were found spending higher amount on travel expenses compared to their migrants counterpart, as they need to commute frequently inside the city or villages for work and business purposes. The per capita expenditure was found higher in migrants'

households than non-migrants' households in both districts. This result is consistent with the work of Sharma (2011) for Sri Lanka.

Table 8.18: Annual average household and per capita expenditures in NRs.

Expenditure	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Food	60,838	51,997	51,325	49,199	55,723	50,666
Education	21,294	17,287	23,768	22,516	22,625	19,775
Health	12,296	10,090	12,567	9,328	12,442	9,727
Clothing	9,944	9,903	7,369	8,274	8,559	9,128
Travel	5,323	9,606	3,158	5,446	4,159	7,627
Festival	13,837	12,439	8,952	9,748	11,210	11,159
Total	123,532	111,321	107,139	104,512	114,717	108,082
Per capita expenditure	29,983	21,658	24,461	21,460	26,929	21,573

Source: Author's survey, 2009
NB: 1 Euro=NRs 100

8.14 Households investments

The relation between migration and investment has been studied by many scholars (Osili, 2004; Amuedo-Dorantes and Pozo, 2006; Kilic et al., 2009). This study included three investment items: land (agriculture/residential), construction or renovation of house and business ownership/establishment. A recall period of five years was considered for the analysis as a certain amount of capital is required for investing. This follows Osili's study of Nigeria, which also considered a five years of recall period. With a low level of human capital and low paying jobs, Nepalese migrants cannot earn enough for making investments by working abroad just for one or two years. The share of migrants' households buying land in the last five years was 30%, while the same for non-migrants' households was 20% (Table 8.19). The proportion of migrants' households who had constructed or renovated their house in the last five years was 10% bigger than that of non-migrant households. However, 23.9% of the non-migrants' households had invested in business ownership, which was a higher share than the migrants' households. This implies that

migration and remittances have benefited non-migrants' households indirectly by creating demand for local production and trading activities.

Table 8.19: Investment in last five years by household types (% of all households)

Items	Sunsari		Jhapa		Total	
	Migrant (N=98)	**Non-migrant (N=173)**	**Migrant (N=114)**	**Non-migrant (N=157)**	**Migrant (212)**	**Non-migrant (330)**
Purchase of Land (% of HH)	**27.6**	**20.8**	**32.5**	**19.1**	**30.2**	**20.0**
Source of fund (%)						
With remittance	96.3	5.6	94.6	23.4	95.3	13.7
Without remittance	3.7	94.4	5.4	73.3	4.7	84.8
Both	0	0	0	3.3	0	1.5
Total	*100*	*100*	*100*	*100*	*100*	*100*
Construction or renovation of house (% of HH)	**23.5**	**15.6**	**44.7**	**34.4**	**34.9**	**24.5**
Source of fund (%)						
With remittance	73.9	3.7	90.2	14.8	85.2	11.1
Without remittance	26.1	96.3	7.8	83.3	13.5	87.7
Both	0	0	2.0	1.9	1.3	1.2
Total	*100*	*100*	*100*	*100*	*100*	*100*
Business or enterprise establishment (% of HH)	**11.2**	**21.4**	**10.5**	**26.8**	**10.8**	**23.9**
Source of fund (%)						
With remittance	45.5	2.7	50.0	7.1	47.8	5.1
Without remittance	54.5	97.3	33.3	80.1	43.5	92.4
Both	0	0	16.7	4.8	8.7	2.5
Total	*100*	*100*	*100*	*100*	*100*	*100*

Source: Author's survey, 2009

8.15 Land sold

Table 8.20 shows that in both districts the proportion of non-migrants' households selling land is higher than in migrants' households. 15.3% of non-migrants' households had sold land in the previous five years. This can be explained by the high propensity of migrants' households to invest in land rather than saving or depositing their money in the bank. The other plausible explanation, which holds partly for a need of capital to meet consumption needs by non-migrants' households, in absence of additional income to supplement their needs.

Table 8.20: Land sold in last five years (% of all households)

Land sold	Sunsari		Jhapa		Total	
	Migrant (N=98)	Non-migrant (N=173)	Migrant (N=114)	Non-migrant (N=157)	Migrant (N=212)	Non-migrant (N=330)
Land sold	6.1	6.4	15.8	24.2	10.9	15.3

Source: Author's survey, 2009

In sum, the descriptive statistics suggests that Gulf countries are most favoured destination for the migrants in the region. Migrants were predominantly male, young and married, who had migrated alone leaving their families at home. About 40% of migrants were unemployed before migration. The reasons for out-migration from Nepal were mainly economic. The majority of migrants had chosen institutions (Manpower Agency) for migration. Remittances were sent formally through money transfer operators. Migrants' households enjoy higher per-capita income than non-migrants' households. The shares of households who had invested on business were higher in non-migrants' households than migrants' households. This implies that remittances are used for buying land and houses rather than investing on business ownership. The shares of non-migrants' households selling land was higher than migrants' households. Overall, the chapter concludes that investments on land and housing prevails more among migrants' households than their non-migrants' counterparts.

9. Determinants of migration, remittances and their impacts

This chapter analyses the factors that influence the households' likelihood of receiving remittances and the impacts of remittances. It is sub-divided into four sub-sections: in the first one, the determinants of international migration and in the second one, the determinants of remittances are presented. The determinants of households' expenditures and investments pattern are presented in the third and fourth section.

9.1 Determinants of migration

Table 9.1 shows the results of a logit regression model predicting the probability of a household having any international migrants. Out of 32 independent variables, 8 variables were found to have significantly influenced the probability of international migration. Seven out of eight significant variables, namely age squared of head, female-headed household, young men, adult men, Hill Janajati ethnicity, family's previous international migration experience and semi-permanent structure of housing showed positive influence on determinants of international migration. The age of the household head is negatively associated with migration. The robust standard errors for determinants of migration and remittances are presented in annex (see Table A10).

Other things being equal, the results of marginal effects show that a one-year increase in a household head's age reduces the probability of migration by 9.2%. Households with female-headships increase the probability of migration by 63%. One unit increase in the number of "young men" aged 15-29 years and "adult men" aged 30-60 years increases the probability of migration by 18% and 24%, respectively. Compared to "Brahman/Chhetri", households with "Hill Janajati" ethnicity are more likely to have migrants. Being from "Hill Janajati" ethnic group and having a "family's previous internal migration experiences" increases the probability of any members of

the household engaging in migration by 18% and 60%, respectively. Households possessing a house with a “semi-permanent” structure have a significantly higher probability of having migrants by 17%. The prediction of hypotheses with observed results are presented in Table 9.2.

Table 9.1: Logit model for determinants of migration and remittances in Eastern Nepal

Variables	Migration		Remittances	
	Coefficient	Marginal effects[24]	Coefficient	Marginal effects
Dependent variables				
Migration (Dummy)	-	-		
Remittances (Dummy)			-	-
Independent variables				
Household characteristics				
Age of head of household (years)	-0.389***	-0.092	-0.354***	-0.079
Age squared of head	0.004***	0.001	0.004***	0.001
Sex of head				
Male*	-	-	-	-
Female headed household (Dummy)	3.069***	0.634	3.074***	0.643
No. of very young dependents (0-4 years)	0.199	0.047	0.012	0.003
No. of other dependents (5-14 & >60 years)	0.543	0.013	-0.017	-0.004
No. of young women (15-29 years)	0.220	0.052	0.292	0.065
No. of young men (15-29 years)	0.788***	0.185	0.581***	0.130
No. of adult women (30-60 years)	0.366	0.086	0.061	0.014
No. of adult men (30-60 years)	1.039***	0.245	1.056***	0.236
Occupation of head				
Agriculture*	-	-	-	-
Service (Dummy)	0.010	0.002	-0.444	-0.010
Business (Dummy)	-0.449	-0.102	-0.484	-0.103
Wage earner (Dummy)	-0.993	-0.200	-0.915	-0.173
Others (Dummy)	-0.797	-0.165	0.184	0.042
Unemployed (Dummy)	0.581	0.141	0.646	0.152
Ethnicity				
Brahman/Chhetri*	-	-	-	-
Newar (Dummy)	0.865	0.212	0.749	0.180
Hill Janajati (Dummy)	0.734**	0.177	0.803**	0.189
Tarai Janajati (Dummy)	-0.457	-0.101	-0.604	-0.122
Hill/Tarai Dalit (Dummy)	-0.295	-0.067	-0.100	-0.022
Family Structure				
Nuclear family *	-	-	-	-
Extended family (Dummy)	0.162	0.038	0.545*	0.126

[24] The marginal effect is an approximation of how much the dependent variable is expected to increase or decrease for a unit change in an explanatory variable: that is, the effect is presented on additive scale (Long and Freese, 2006).

Variables	Migration		Remittances	
	Coefficient	Marginal effects[24]	Coefficient	Marginal effects
Human capital				
Education of head (years)	-0.058	-0.014	-0.062	-0.014
Education squared	0.000	0.000	-0.001	0.000
No. of adults with higher education	-0.061	-0.014	-0.143	-0.032
Social Capital				
Family's previous international migration experience (Dummy)	2.978***	0.600	-	-
Physical Capital				
Land holding (hectares)	-0.065	-0.015	-0.373	-0.083
Landholding square	-0.006	-0.001	0.058	0.013
Asset index (Average)	0.025	0.006	0.087	0.019
Household debt (Dummy)	-0.009	-0.002	-0.186	-0.042
Housing structure				
Permanent*	-	-	-	-
Semi-permanent (Dummy)	0.685**	0.166	0.851**	0.200
Temporary (Dummy)	0.610	0.145	0.572	0.130
Other (Dummy)	0.997	0.244	0.696	0.167
Region				
District				
Sunsari*	-	-	-	-
Jhapa (Dummy)	0.139	0.033	0.337	0.075
Area/location				
Urban*	-	-	-	-
Rural (Dummy)	0.443	0.104	0.443	-0.073
Constant	4.658		4.504	
Number of Observation	542		542	
Wald chi2(29)	171.78***		153.02***	
Pseudo R2	0.429		0.357	
Log-likelihood	-206.988		-230.070	

Notes: *, ** and *** stands for significance at the 10, 5 and 1 % level respectively.
Source: Author's own calculation

Table 9.2: Comparison of hypotheses with expected signs and observed results for migration and remittances

Independent Variables	Migration		Remittances	
	Exp. sign	Results	Exp. sign	Results
Household characteristics				
Age of head of household (years)	+	-	+	-
Age squared of household head	-	+	-	+
Sex of household head				
Male*				
Female (Dummy)	+	+	+	+
No. of very young dependents aged 0-4 years	-	+	+	+
No. of other dependents aged 5-14 & >60 years	-	+	+	-
No. of young women aged15-29 years	+	+	+	+
No. of young men aged15-29 years	+	+	+	+
No. of adult women aged 30-60 years	+	+	+	+
No. of adult men aged 30-60 years	+	+	+	+
Occupation of household head				
Farming*				
Services (Dummy)	+	+	+	-
Business (Dummy)	+	-	+	-
Wage earner (Dummy)	-	-	-	-
Others (Dummy)	-	-	-	+
Unemployed (Dummy)	-	+	-	+
Ethnicity				
Brahman/Chhetri*				
Newar (Dummy)	+	+	+	+
Hill Janajati (Dummy)	-	+	-	+
Tarai Janajati (Dummy)	-	-	-	-
Hill/Tarai Dalit (Dummy)	-	-	-	-
Family structure				
Nuclear family*				
Extended family (Dummy)	+	+	+	+
Human capital				
Education of head (years)	+	-	+	-
Education squared	+	+	+	-
No. of adults with higher education	+	-	+	-
Social capital				
Family's previous international migration experience (Dummy)	+	+		
Physical capital				
Land holding (hectares)	+	-	+	-

Independent Variables	Migration		Remittances	
	Exp. sign	Results	Exp. sign	Results
Landholding square	-	-		+
Asset index (Average)	+	+	+	+
Household debt (Dummy)	+	-	+	-
Housing structure				
Permanent *				
Semi-permanent (Dummy)	+	+	+	+
Temporary (Dummy)	-	+	-	+
Other (Dummy)	-	+	-	+
Region				
District				
Sunsari *				
Jhapa (Dummy)	+	+	+	+
Area				
Urban*				
Rural (Dummy)	+	+	+	+

Note: Exp. = Expected
Source: Author's own calculation

9.2 Determinants of remittances receipt

The regression result in Table 9.1 shows the probability of receiving remittances. Out of 31 independent variables, 8 variables were found to have significantly influenced probability of receiving remittances. Age squared of household head, female-headed household, young men aged 15-29 years, adult men aged 30-60 years, Hill Janajati ethnicity, extended family and semi-permanent structure of housing had positive influence on likelihood of receiving remittances. The coefficient of age of the household head is significantly negative with receipt of remittances.

The results of marginal effects show that a one year increase in "age of household head" reduces the probability of receiving remittances by 8%, other things remaining the same. Likewise, "female-headed" households are 64% points more likely to receive remittances than "male-headed" households. One unit increase in a number of "young men" (15-29 years) and "adult men" (30-60 years) increases the probability of receiving remittances

by 13% and 24%, respectively. Ethnicity plays an important role in receipt of remittances. “Hill Janajati” households are more likely to receive remittances, than the reference category, “Brahman/Chhetri” households. Being from “Hill Janajati” ethnicity and having an “extended family” increases the probability of receiving remittances by 19% and 13%, respectively. A household possessing a house with a “semi-permanent” structure increases the probability of receiving remittances by 20%.

9.3 Determinants of household expenditures on food, education and health

Table 9.3 shows the determinants of food expenditures. Received remittances, very young dependent aged 0-4 years, young male aged 15-29 years, other dependent aged above 60 years, employment sector of household head in non-agriculture, size of landholding, landholding squared, asset index, temporary structure of house, income quintile fourth, income quintile fifth and rural area significantly explained the model. They explain the 50% variation in the dependent variable. The model was overall highly significant with F value of 19.46. The robust standard errors for determinants of household expenditures on food, education and healthcare are presented in annex (see Table A11).

Overall, 29 independent variables were used to determine their relationship with educational expenditures (Table 9.3). The variable square of land holding was dropped from the model, as there was no effect on educational expenditures. Very young dependent aged 0-4 years, young male aged 15-29 years, adults with higher secondary education, asset index, income quintile fifth and Jhapa district significantly explained the model. They explain the 24% variation in the dependent variable. The model was overall highly significant with F value of 6.08.

Table 9.3 displays the determinants of health expenditures. Nine variables, received remittances, other dependent aged above 60 years, Newar ethnicity,

Hill Janajati ethnicity, Tarai Janajati ethnicity, size of landholding, landholding squared, asset index, semi-permanent structure of house significantly explained the model. They explain the 12% variation in the dependent variable. The model was overall highly significant with F value of 3.97. The prediction of hypotheses with observed results are presented in Table 9.4.

Table 9.3: Determinants of food, education and health expenditures

Independent variables	Food (Coefficients)	Education (Coefficients)	Health (Coefficients)
Received remittances (Dummy)	**6700.637****	**-516.7479**	**4985.054****
Household Characteristics			
No. of very young dependents of aged 0-4 years	7879.595**	-7575.414***	1208.348
No. of young dependents of aged 5-14 years	2044.597	573.979	461.318
No. of young female aged 15-29 years	-1459.648	386.914	-163.405
No. of young male aged 15-29 years	4623.145 **	4680.103***	512.012
No. of adult female aged 30-60 years	517.248	300.852	873.999
No. of adult male aged 30-60 years	3131.906	1591.967	-1200.660
No. of other dependents above 60 years	3984.833*	964.586	1880.429*
Age of head of household (years)	-62.506	-130.901	122.230
Sex of head (Female)			
Male headed household	-	-	-
Female headed household (Dummy)	1921.494	4318.046	-1824.646
Employment sector of head			
Agriculture	-	-	-
Non-agriculture (Dummy)	5730.463*	-977.740	-1831.365
Unemployed (Dummy)	4346.095	8274.406	-800.964
Ethnicity/Caste group			
Brhaman/Chhetri*			
Newar (Dummy)	8721.368	-333.795	-5626.654***
Hill Janajati (Dummy)	1684.021	-1394.139	-5986.752***
Tarai Janajati (Dummy)	-869.941	-3084.873	-2560.391*
Hill/Tarai Dalit (Dummy)	2415.8	-3167.534	-945.738
Human capital			
Education of head (years)	-414.935	213.508	-69.222
Adults with higher education	-1261.789	2887.841**	282.388
Physical capital			
Landholding (hectares)	-10245.38**	528.0932	3424.021*
Landholding square	4142.306***	-	-936.050**
Asset index (average number)	2550.073***	1178.642***	384.863*
Housing Structure			
Permanent*	-	-	-
Semi-permanent (Dummy)	-5366.66	-3793.322	-4176.619**
Temporary (Dummy)	-6285.062*	-2400.086	-3199.959
Others (Dummy)	-1785.852	2637.182	-3514.171
Income quintile			
Quintile 1*	-	-	-
Quintile 2 (Dummy)	-2024.213	-447.614	-69.04701

Independent variables	Food (Coefficients)	Education (Coefficients)	Health (Coefficients)
Quintile 3 (Dummy)	579.9921	2661.651	-1401.443
Quintile 4(Dummy)	12800.09***	4254.403	-874.001
Quintile 5(Dummy)	20790.06***	16656.14**	4486.018
Location/region			
Area			
Urban*	-	-	-
Rural (Dummy)	-28860.05***	-1846.758	-1484.947
District			
Sunsari *	-	-	-
Jhapa (Dummy)	-2285.556	8398.883***	-1870.592
Constant	35117.09***	-2030.673	4982.898
Number of observation	542	542	542
	F =19.46***	F= 6.08***	F= 3.97***
	R^2 = 0.4981	R^2= 0.2419	R^2 = 0.123

Notes: *, ** and *** stands for significance at the 10, 5 and 1 % level respectively.
Source: Author's own calculation

Table 9.4: Comparisons of hypotheses with expected signs and observed results for expenditures

Independent variables	Expenditures	Food	Education	Health
	Exp. signs	Results	Results	Results
Received remittances (Dummy)	+	+	-	+
Household Characteristics				
No. of very young dependents of aged 0-4 years	+	+	-	+
No. of young dependents of aged 5-14 years	+	+	+	+
No. of young female aged 15-29 years	+	-	+	-
No. of young male aged 15-29 years	+	+	+	+
No. of adult female aged 30-60 years	+	+	+	+
No. of adult male aged 30-60 years	+	+	+	-
No. of other dependents above 60 years	+	+	+	+
Age of head of household	+	-	-	+
Sex of head (Female)				
Male headed household*				
Female headed household (Dummy)	-	+	+	-
Employment sector of head				
Agriculture*				
Non-agriculture (Dummy)	+	+	-	-
Unemployed (Dummy)	-	+	+	-
Ethnicity/Caste group				
Brhaman/Chhetri*				
Newar (Dummy)	+	+	-	-
Hill Janajati (Dummy)	+	+	-	-
Tarai Janajati (Dummy)	-	-	-	-
Hill/Tarai Dalit (Dummy)	-	+	-	-
Human capital				
Education of head (years)	+	-	+	-
Adults with higher education	+	-	+	+
Physical capital				
Landholding (hectares)	+	-	+	+
Landholding square	-	+	-	-
Asset index (average number)	+	+	+	+
Housing Structure				
Permanent*				
Semi-permanent (Dummy)	+	-	-	-
Temporary (Dummy)	-	-	-	-
Others (Dummy)	-	-	+	-
Income quintile				

Independent variables	Expenditures	Food	Education	Health
	Exp. signs	Results	Results	Results
Quintile 1*				
Quintile 2 (Dummy)	-	-	-	-
Quintile 3 (Dummy)	-	+	+	-
Quintile 4(Dummy)	+	+	+	-
Quintile 5(Dummy)	+	+	+	+
Location/region				
Area				
Urban*				
Rural (Dummy)	-	-	-	-
District				
Sunsari *				
Jhapa (Dummy)	-	-	+	-

Note: Exp. = Expected
Source: Author's own calculation

9.4 Determinants of household investments

The regression results shown in Table 9.5 predict the probability of land purchased in the last five years. The size of landholding, asset index and received remittances had a positive influence on the determinants of land purchase. The coefficients of adult women aged 29-60 years, Hill Janajati ethnicity, Tarai Janajati ethnicity and landholding squared had negatively influenced the probability of land purchased in the region. The robust standard errors for determinants of investments are presented in the annex (see Table A12)

Other things remaining equal, the results of marginal effects shows that a one-unit increase in the number of households "receiving remittances" increases the probability of land purchase by 13% (Table 9.5). Having a larger size of "landholding" and "asset index" increases the probability of households to purchase land by 17% and 1.3%, respectively. A one-unit increase in a number of "adult women" aged 29-30 years, being from "Hill Janajati" ethnicity and being from "Tarai Janajati" ethnicity reduces the probability of purchase of land by 17%, 9.5% and 13%, respectively. The prediction of hypotheses with observed results are presented in Table 9.6.

Table 9.5: Determinants of investments in land, house and business in last five years

Variables	Land		House		Business	
	Coef.	**M.E.**	**Coef.**	**M.E.**	**Coef.**	**M.E.**
Dependent variables						
Investments in land (Dummy)	**-**	**-**				
Investments on house (Dummy)			**-**	**-**		
Investments on business (Dummy)					**-**	**-**
Independent variables						
Received remittances (Dummy)	**0.767*** **	**0.129**	**0.646** **	**0.119**	**-0.532**	**-0.051**
Households characteristics						
Age of head of household (years)	-0.085	-0.013	0.068	0.012	-0.219**	-0.022
Age squared of head	0.001	0.000	-0.001	-0.000	0.002**	0.000
Female headed household (Dummy)	0.011	0.002	-0.273	-0.046	-1.088**	-0.088
No. of very young dependents aged 0-4 years	0.082	0.013	0.250	0.044	-0.014	-0.001
No. of young dependents of aged 5-14 years	0.040	0.006	0.145	0.026	0.150	0.015
No. of other dependents above 60 years	0.096	0.015	0.077	0.014	-0.052	-0.005
No. of young female aged 15-29 years	-0.382	-0.006	-0.212	-0.038	-0.072	-0.007
No. of young male aged 15-29 years	-0.295	-0.047	-0.232	-0.041	0.134	0.013
No. of adult female aged 30-60 years	-0.534*	-0.085	-0.290	-0.051	0.539**	0.054
No. of adult male aged 30-60 years	-0.130	-0.021	-0.000	-0.000	0.278	0.028
Occupation of household head						
Agriculture*	-	-	-	-	-	-
Non-agriculture (Dummy)	0.393	0.062	-0.084	-0.015	0.969**	0.097
Unemployed (Dummy)	0.472	0.083	-0.274	-0.046	-1.206*	-0.089
Ethnicity						
Brahman/Chhetri*	-	-	-	-	-	-
Newar (Dummy)	-0.423	-0.060	0.200	0.037	0.936*	0.126
Hill Janajati (Dummy)	-0.668**	-0.095	-0.109	-0.019	0.257	0.027
Tarai Janajati (Dummy)	-1.124**	-0.131	-1.153*	-0.152	0.444	0.051
Hill/Tarai Dalit (Dummy)	-0.428	-0.061	-0.154	-0.026	-0.712	-0.056
Family Structure						
Nuclear family*	-	-	-	-	-	-
Extended family (Dummy)	0.129	0.028	-0.359	-0.060	-0.750**	-0.065
Human Capital						

Variables	Land		House		Business	
	Coef.	**M.E.**	**Coef.**	**M.E.**	**Coef.**	**M.E.**
Education of head (years)	0.127	0.020	0.099	0.018	0.003	0.000
Education squared	-0.005	-0.001	-0.010*	-0.002	0.019	0.002
Physical capital						
Land holding (hectares)	1.042***	0.166	-0.189	0.014	0.177	0.018
Landholding squared	-0.176**	-0.028	0.078	-0.027	0.024	0.002
Asset index (Average)	0.090*	0.014	-0.150**	0.019	0.162***	0.016
Household debt (Dummy)	0.053	0.008	0.105	-0.082	1.698***	0.170
Housing structure						
Permanent*	-	-	-	-	-	-
Semi-permanent (Dummy)	0.084	0.013	-0.495	-0.333	0.483	0.053
Temporary (Dummy)	-0.172	-0.027	-2.146***	-0.238	0.427	0.044
Others (Dummy)	0.216	0.036	-2.801***	0.151	-0.044	-0.004
Region						
District						
Sunsari*	-	-	-	-	-	-
Jhapa (Dummy)	-0.113	-0.018	0.854 ***	0.092	0.694**	0.070
Area						
Urban*	-	-	-	-	-	-
Rural	0.186	0.030	0.516*		0.205	0.021
Constant	-0.517		0.135		-0.631	
Number of Observation	542		542		542	
Wald chi2(29)	71.07***		99.30***		94.04***	
Pseudo R2	0.129		0.192		0.238	
Log –Likelihood	-259.982		-262.102		-199.73	

Notes: *, ** and *** stands for significance at the 10, 5 and 1 % level respectively. Coef.= Coefficients, M.E.=Marginal effects

Source: Author's own calculation

Table 9.6: Comparisons of hypotheses with expected signs and observed results for investments

Independent variables	Investments	Land	Housing	Business
	Expected signs	Results	Results	Results
Received remittances (Dummy)	**+**	**+**	**+**	**-**
Household characteristics				
Age of head of household **(years)**	+	-	+	-
Age squared of head	-	+	-	+
Female headed household	+	+	-	-
No. of very young dependents of aged 0-4 years	-	+	+	-
No. of young dependents of aged 5-14 years	-	+	+	+
No. of other dependents above 60 years	-	+	+	-
No. of young female aged 15-29	-	-	-	-
No. of young male aged 15-29	-	-	-	+
No. of adult female aged 30-60	+	-	-	+
No. of adult male aged 30-60 years	+	-	-	+
Occupation of household head				
Farming*				
Non-agriculture (Dummy)	+	+	-	+
Unemployed (Dummy)	-	+	-	-
Ethnicity/Caste group				
Brahman/Chhetri*				
Newar (Dummy)	+	-	+	+
Hill Janajati (Dummy)	+	-	-	+
Tarai Janajati (Dummy)	-	-	-	+
Hill/Tarai Dalit (Dummy)	-	-	-	-
Family structure				
Nuclear family*				
Extended family (Dummy)	+	+	-	-
Human capital				
Education of household head	+	+	+	-
Education squared of head	-	-	-	+
No. of adult with higher education	+			+
Physical capital				
Landholding (hectares)	+	+	-	+
Landholding square	-	-	+	+
Asset index (weighted average)	+	+	-	+
Household debt (Dummy)	-	+	+	+

Independent variables	Investments	Land	Housing	Business
	Expected signs	Results	Results	Results
Housing structure				
Permanent *				
Semi-permanent (Dummy)	+	+	-	+
Temporary structure (Dummy)	-	-	-	+
Others (Dummy)	-	+	-	-
Region				
District				
*Sunsari**				
Jhapa (Dummy)	+	-	+	+
Area				
*Urban**				
Rural (Dummy)	-	+	+	+

Source: Author's own calculation

The regression results shown in Table 9.5 predict the probability of house renovation or construction in the last five years. Received remittances, area and district had a positive influence on the determinants of house renovation or construction. Tarai Janajati ethnicity, asset index, house with temporary structure, house with other structure and education squared of household head had significantly influenced the probability of house renovation or construction in the region.

The results of marginal effects show that a one unit increase in the number of household "receiving remittances" increases the probability of house renovation or construction by 12%, other things remaining equal (Table 9.5). Having a household in "Jhapa district" and being in a "rural area" increases the probability of house renovation or construction by 15% and 9.2%, respectively. Being from "Tarai Janajati" ethnicity reduces the probability of house renovation or construction by 15.2%. The marginal effect for "education squared" of the head is 0.2%, which is very low. Having larger "asset index", having a house with "temporary" and "other" structure reduces the probability of house renovation or construction by 3%, 33% and 23%, respectively.

The regression result shown in Table 9.5 displays the probability of business ownership in the last five years. The age squared of household head, adult women aged 29-60 years, occupation of household head in non-agriculture sector, Newar ethnicity, asset index, household debt and Jhapa district had a positive influence on the determinants of business ownership. Age of household head, female-headed household, unemployed household head and extended family had negatively influenced the probability of business ownership in the region.

Assuming other things remaining the same, the results of marginal effect shows that a one-unit increase in the number of "adult women" aged 29-60 years in the households increases the probability of business ownership by 5%. Having a household head with "non-agriculture" occupation and being from "Newar" ethnicity increases the probability of business ownership by 10% and 13%, respectively. Households having larger "asset index", "indebted household", and being from "Jhapa district", increases the probability of business ownership by 2%, 17% and 7%, respectively. A one-year increase in the "household head's age" reduces the probability of business ownership by 2%. Having a "female-headed" household and having an "extended family" reduces the probability of business ownership by 9% and 9%, respectively. The dummy variable "received remittances" are negative and insignificant, which indicates that remittances do not play a major role in business ownership in the region.

10. Discussion

10.1 Discussion on migration and remittances

The result shows that "age of household head" is statistically significant with migration but at an increasing rate. This can be explained as households in older age may have less benefits of out-migration. The other possible explanation can be that head of older age may have children of prime working age who are appropriate for work related migration. This results are in line with many scholars who have demonstrated that age of household head reduces migration (Gőrlich and Trebesch, 2006; Karamba, Quinones and Winters, 2011).

The "female-headed" households are statistically significant with migration, implying that female-headed households are more likely to have sent out-migrants. With the migration of male members for economic reasons, women are left in the households as head. This finding is consistent with the findings of Thapa (2008), who had examined migration decisions from Nepal, using the panel data. The number of "young men aged 15-29 years" and "adult men aged 29-60 years" in the households are statistically significant with migration. The probability of migrating among young and adult males might reflect the necessity to move for work with the responsibility of supporting one's own family. The other possible explanation can be the presence of gendered division of labour in Nepal, which clearly assigns women to carry out household chores and childcare, with economic and social activities to be performed largely by male members. The likelihood of participating in migration increases for males because they have higher family responsibilities than the females. The result is consistent with (Quinn, 2006; Valencia, 2008), who found that men are more likely to migrate than women. The national level census data of Nepal also shows that around 90% of migrants are male (CBS, 2001). The households having larger household size in the form of

young and adult men is consistent with previous empirical findings such as Quinn (2006). Moreover, in households with a greater number of young and adult males, it is a strategic move to send a member away from home so they can remit, while other members in the household can take care of the supplemental day-to-day needs.

"Hill Janajati" ethnic groups are more likely to move internationally than all other ethnic groups. This result is consistent with the previous studies of migration from central Nepal (Bohra and Massey, 2009; Bohra-Mishra and Massey, 2011), where "Hill Janajati" ethnic groups had higher likelihood of having both internal and international migrants. The plausible explanation for this group to become more mobile is that the "Hill Janajati" ethnic groups historically have been the people to join the British Army, and still hold predominant numbers there. A household with a presence of "family's previous international migration experiences" increases the likelihood of international migration. This is in line with Bohra-Mishra and Massey (2010), who have shown the effect of previous international migration experience in influencing migration decision from central Nepal. This finding is supported by Gőrlich and Trebesch (2006), who found the probability of migration in Moldova had increased up to 46% if compared to households that never had a migrant.

In Nepal, social status is recognized with the housing structure, which mainly depends on the materials used for construction of a house. Households having "permanent" and "semi-permanent" structure belong to the relatively well-off families in Nepal compared to those having temporary or other housing structures. Households with "semi-permanent" housing structure showed an increased probability of international migration as it is an expensive venture, where poor households either remain or migrate internally. This result contradicts with Bohra-Mishra (2010), where she confirmed that relatively

less affluent families migrate for work. In her empirical study, she explained migration for work basically to India, which sometimes requires a lower cost than migrating inside Nepal.

"Age of the household head" is significant with likelihood of receiving remittances, but at an increasing rate. This would imply that likelihood of receiving remittances by elderly household head is lower than the younger household head. The "female-headed" households have higher probability of receiving remittances than the "male-headed" households, which is in line with Amuedo-Dorantes and Pozo (2006) in the Dominican Republic. The possible plausible explanation for this result is that women are receiving remittances either from their spouse or from their children, to support in absence of proper social security or safety nets (Pfau and Giang, 2010) mechanism. Households with larger shares of "young male" aged 15-29 years and "adult male" aged 29-60 years increase the likelihood of receiving remittances. This can be partly explained as that larger household size with larger number of economically active males have wider access to remittances as a mechanism for their subsistence and survival. It reflects the necessity to move for work with the responsibility of supporting one's own family. The other plausible explanation is that as a number of economically active male in a household increases, instead of looking for a job in their own city/village in a narrow labour market, they migrate internationally for work to support their families with remittances. Moreover, the money they earn doing same work abroad is higher, which perpetuates international migration.

Consistent with previous studies of migration from Chitwan (Bohra-Mishra and Massey, 2010), "Hill Janajati" ethnic groups are statistically significant with the outcome variable receipt of remittances. These ethnic groups are historically involved in joining British Army, whose numbers still dominate in this army. Having an "extended family" also increases the likelihood of

receiving remittances than those of the nuclear family. This result is consistent with the empirical results of Sana and Massey (2005), who found the likelihood of receiving remittances by extended family in Dominican Republic. The plausible explanation for this can be when the households have a larger size; they can manage to spread labour by sending members away from home and compensate labour loss with the remittances migrants send back.

Households having a house with a semi-permanent structure increase the probability of receiving remittances, as international migration is an expensive venture where poor households either remain or migrate internally. This result contradicts with the findings of Bohra-Mishra (2010), where she states that relatively less affluent families migrate for work in Nepal. In her case, international migration from central Nepal has considered migration to India rather than to other international destinations, which sometimes cost lower than migrating inside Nepal.

10.2 Discussion on household expenditure patterns

Remittances have positive influence on the food expenditures in the region, indicating that remittances increases food expenditure by providing additional income to finance the additional spending. This finding contradicts with (Castaldo and Reilly, 2007) in an empirical study in Albania, who found household receiving international remittances spend less at the margin on food than a household who does not receive international remittances. The number of “very young dependents aged 0-4 years” and “other dependents aged above 60 years” increases the household expenditures in food items. Households with larger number of “young male aged 15-29 years”, shows higher consumption of food items. This can be attributed to these young people consuming more food as per their need for growth. They belong to prime working age people who have to eat for their labour productivity as

well. Household head working in non-agriculture sector increases expenditures on food items. This is generally explained by the fact that people outside farming sector have to purchase food for their survival. Household expenditure on food items decrease with the size of landholding. This can be explained that in subsistence farming, the farmer prefers to ensure food security by growing crops for their own consumption rather than for commercial purposes. Households belonging to "income quintiles four" and "income quintiles five" are spending more on food items compared to the other groups. This is partly explained, that these income groups can afford expenses on food due to their higher incomes. Turning to "asset index", a household having larger asset index increases the food expenditures than the households with smaller asset index. This is explained by the fact that they are rich and have higher purchasing power. Households having "temporary" housing structure spend less on food, as they are not rich in terms of resources, which limit their spending on food items. Regional dummies with households from 'rural areas" spend less in food than their urban counterparts, as mostly people in rural areas are somehow connected with farming activities, and also the food prices are lower than in urban areas.

Remittances have no significant influence on educational expenditures. This implies that the ability of households to improve their spending on educational activities is not assisted by the remittances that migrants send. The number of "very young dependents aged 0-4 years" is negative, but significant to educational expenditure, indicating that households having more children belonging to these groups reduce educational expenditure. Children below 4 years of age do not go to school in Nepal and it reduces the cost of education. Cattaneo (2010), found a similar result in Albania, with the number of children below five years of age reducing expenditure in education. The number of "young male aged 15-29 years" increases the household expenditures on education. This can be explained by the fact that sons have

more preference than daughter in Nepal. Parents mostly invest for the education of son as a social security for future, while daughters on the other hand either leave their studies after completion of high school or get married. Daughters are sent to another's house after marriage, and parents mostly do not want to invest on their education. Having higher "number of adults with higher secondary education" increases the educational expenditures in the households. This is partly explained as after completion of higher secondary education, boys join university education or some specific field of studies with specialization. Households from "Jhapa district" spend more on education than their counterparts' in Sunsari. The spending on education is higher for Jhapa because it lacks good educational institutions for higher education and households need to send their family members to nearby cities or capital city for higher studies. Among the asset variables, "asset index" is positive and significant. The result indicates that households having larger "asset index" increases the spending on education. Similarly, households belonging to "fifth income quintile" are significant and positive. It implies that at a higher income quintile, spending on education rises. "Landholding size" does not hold any major role in educational expenditures. The squared of land holding was dropped from the model, as there was no effect on educational expenditure. The analysis does not support any evidence of remittances contributing towards human capital development in terms of educational expenses.

The results show that remittances are significant and positive for health expenditures. It indicates that households are investing on healthcare with the additional income from remittances. This shows that households who receive remittances spend their income on health care and insure themselves from illness. Households with larger number of "other dependents above 60 years" increase health expenditures. The implies that older members in the household require additional spending in terms of healthcare, because they are

prone to get sick more often than the other age grouped people. Turning to ethnicity/caste groups, households belonging to “Newar”, “Hill Janajati” and “Tarai Janajati” group spend less on healthcare compared to their reference group, “Brahman/Chhetri”. Furthermore, analysis needs to be made for this variation of expenses by ethnicity. Among the asset variables, “land holding” and “asset index” are significant and positive, but the “semi-permanent housing structure” is negatively associated with health expenditures. The result indicates that households having larger “landholding” and “asset index” increases the spending on healthcare. Households with “semi-permanent” housing structure spend less than the reference group, with “permanent” housing structures. It can be partially explained that households endowed with higher physical capitals are able to spend more on health care during illness. It can be concluded that the households are ultimately using remittances and investing on human capital in terms of better healthcare.

The researcher cannot compare the findings of household expenditures to the results of Zarate-Hoyos (2004), Adams (2005), as they have used the Engle curve framework to explain the budget share on various expenditures. This study takes into account the average household expenditures on various goods in absolute term, rather than its share of expenditures.

10.3 Discussion on household investment patterns

Remittances are statistically significant with a purchase of land in the last five years. This implies that remittances are increasingly used for the purchase of land. The “size of landholding” is statistically significant with the purchase of land. This is partly explained that households having land wants to increase their farm landholding or purchase residential plots. Having a larger number of asset index increases the probability of purchase of land. Households having a higher “number of adult women aged 29-60 years” reduce the probability of purchase of land. The patriarchal society, gives the access to

and control over resources to man. At national level, the study shows 10% of private land is owned by female (Khadka, 2010) in Nepal. Being from "Hill Janajati" ethnicity and "Tarai Janajati" ethnicity reduces the probability of purchase of land. These ethnic groups are not involved in farming activities in an intensive manner.

Remittances increase the probability of house renovation or construction in the last five years. Having a household in "Jhapa district" increases the probability of house renovation or construction. This is partly explained by the fact that expenditure on improved housing contributes to welfare, security and prestige. Consequently, after receiving remittances households were found changing their roofs or repairing their floors, or even constructing a new house. A household in a "rural area" increases the probability of house renovation or construction. The houses in rural areas are mostly made of temporary materials like such as wood, bamboo and straw. Once the remittances are received, households intend to upgrade their house by changing roof and floors, with durable construction materials. However, to a greater extent, expenditure on housing has a multiplier effect as it provides employment and expands other local industries and services in the region. Being from "Tarai Janajati" ethnicity and having larger value of "asset index" reduces the probability of house renovation or construction. Likewise, a household having a house with "temporary" and "other structures" reduces the probability of house renovation or construction compared to that of a household having a house with a "permanent" structure. This is partly explained as most of the house constructions in the study area belong to a house with a permanent structure, made of durable construction materials.

The number of "adult women" aged 29-60 years in the household increases the probability of business ownership in the last five years. The plausible explanation for this is women are mostly good in managing small-scale

businesses. The “age squared of household head” increases the probability of business ownership. Household heads with “non-agriculture” occupations increase the probability of business ownership. This is explained by the fact that head engaged in non-agricultural activities are mostly into service or business activities. Households belonging to “Newar” ethnic group increase the probability of business ownership. Historically, these ethnic groups are popular and engaged in trading and business activities in Nepal. “Asset index” increases the probability of business ownership. Household indebtedness increases the probability of business ownership. This is partly explained that loan is used to start a business in the region. Households from “Jhapa” are more likely to invest in business ownership than households from Sunsari. The possible explanation for this can be Jhapa is more agricultural in nature than Sunsari, and requires off-farm and trading activities. The business ownership found in the survey area was mostly in the form of trading activities. A one-year increase in the “household head’s age” reduces the probability of business ownership. Having a “female-headed” household reduces the probability of business ownership compared to “male-headed” household. This is explained by the fact the “female-headed” households may need the support of their spouse to operate business in terms of doing calculation and ordering products. Mostly, women are illiterate or less educated and cannot manage all tasks by themselves. On the other hand, a woman has to take care of child and household chores as well as maintain the workload of an absent spouse due to migration. “Unemployed” household head decreases the probability of business ownership, compared to the reference category, household head “employed” in agriculture sector. Having an “extended family” reduces the probability of business ownership than the nuclear family. The dummy variable “remittance” is negative and insignificant with the business ownership in the last five years. This indicates

that the remittances do not play a major role in business ownership in the region.

11. Summary and Conclusions

This research work has investigated the determinants of migration and remittances and its impact on households in Eastern Nepal. This chapter summarizes the salient findings of the research. The conclusions emerged from the study are discussed below.

11.1 Summary of findings

11.1.1 Determinants of migration and remittances

The determinants of migration and remittances are based on the household characteristics, social capital, physical capital and regional characteristics. Descriptive analyses show that migrants are mainly males (94%), with an average age of 33 years. Almost 40% of the migrants were unemployed and 30% were employed in the agriculture sector prior to migration, having an average of 10 years of education. A household having higher number of "young male" aged 15-19 years and "adult male" aged 29-60 years increases the likelihood of out-migration of one of its members. A household with "female headship" increases the likelihood of having out-migrants. Households belonging to "Hill Janajati" ethnicity have higher probability of out-migration of one of its member than the other ethnic groups. The network variable "family's previous international migration experience" has positive effects on the probability of any members of the household engaging in out-migration. Households having a "semi-permanent" housing structure are more likely to have migrants than the households with a "permanent structure". It seems that households with a permanent structure of housing have no incentives to send one of its members to migrate for quality housing.

The study focuses on the characteristics of remittances receiving households. The majority of the migrants' send remittances to their households. The descriptive result shows that 37% of all households and 95% of migrants' households in the region had received remittances. Having a higher number of

"young male" aged 15-29 years and "adult male" aged 29-60 years in the household, being from "Hill Janajati" ethnicity, having an "extended family" and having a house with a "semi-permanent" structure increases the likelihood of receiving remittances.

11.1.2 Use of remittances

Descriptive results show that the households with international migrants have a larger share of total expenditures on food, health and education than the non-migrants' households. Remittances have increased food expenditure by providing additional income to finance additional spending. It has no association with educational expenditure, and reveals no decisive role in households' educational expenditure. Remittances do not play a decisive role in the development of human capital formation (specifically education). On the other side of human capital (health), remittances have played an important role in health expenditures.

Remittances are also used in asset accumulation. Availability of remittances income has helped to increase investment in assets (specifically in the purchase of land and house renovation or construction). Migrants' households are largely involved in using the remittances for the purchase of land and construction of house. Remittances have no effects on business ownership and they do not play a major role in the investment of business ownership in the region. Conversely, household loan has played a significant role in business ownership in the region.

11.2 Conclusions

The Nepalese economy has observed a remarkable transformation since the 1990s, which has experienced declining poverty, expanding migration and shifting consumption patterns. International migration and remittances has become an important agenda in Nepal. The present study has investigated the determinants of remittances and their impacts at household level. The analysis

provides support for the view that an unemployed male with an average of less than 10 years of education displays a higher propensity to migrate from Nepal. National level data and census results also shows that migration from Nepal is a predominantly male (around 90%) phenomenon. Moreover, the laws and policies are also favourable for male out-migration. Several embargos on women migration from Nepal make them resort clandestine migration through Indian land. Migration policies and regulations should be reviewed periodically and simplified where appropriate.

Remittance receipt is a key variable of interest in this study. The use of remittances from overseas has become a focal point of ongoing debate among the researchers, policy makers and governments. By examining the relationship of remittances and expenditures, this study has shed light on how it influences the consumption patterns of the households. This endeavour is aimed to enlighten better understating on the use of remittances, which will assist the government of Nepal in designing, and implementing polices to promote the benefits of migration and remittances. Remittances send back by the migrants to their households has increased income in the short-run, which has enabled financial support for day-to-day survival in terms of food and healthcare expenses. Studies on remittances have shown that remittances increases educational attainment and higher spending on educational activities (Yang, 2008; Cox Edwards and Ureta, 2003). The lack of significant results in this research raises question about why remittances do not help in increased educational expenditures. Remittances were found significant in accumulating assets in the formation of land and housing. Migrants' households were found to enjoy an improved standard of living in terms of better housing quality. It has been suggested that remittances loosen capital constraints faced by the households with regards to productive investments (Dustmann and Kirchkamp, 2002; Kilic et al., 2009), the findings do not support this hypothesis in the context of business ownership in East Nepal. However, the

way the remittances are used varies according to the economic status and need of the remittance-receiving households. The use of remittances should be more fully explored.

Policy recommendations: Based on the findings from the research, this section presents recommendation in order to provide measures to improve the outcomes of migration and remittances in Nepal.

Human development: Migrants from the study area were endowed with a low level of education with less than 10 years of schooling. NIDS (2004) revealed that Nepal deploys three categories of overseas workers: mainly unskilled (70%), semi-skilled (27%) and skilled (3%). Nepal has to compete with other labour exporting countries in international labour market. With low level of human development, it may pose a threat for Nepal to grab employment opportunities abroad. Furthermore, migrants are paid less due to the low skill level they possess. Given the country's abundant labour force, out-migration of skilled workforce could benefit Nepal's economic development. The study recommends government intervention with the implementation of specific program and polices, to upgrade the skills of semi-skilled and unskilled workforce with specific skills on various subject matters and deploy workers according to their skills. The value addition of these workforces can benefit both the Government and migrants, and leads a win-win situation among all the stakeholders in the form of increased remittances. At the same time, there should be increased efforts to provide unemployed and unskilled workers jobs inside the country.

High migration costs: Returnee migrants and the migrants' households reported higher cost of migration. Migrant workers need to spend 4-6 months to make up their initial cost of migration. They work as a labour in the construction or agricultural sectors in the South-East or Middle-East countries. The money they earn is very low to create savings. The contract

migration are for a short period, lasting only for 2-3 years. The government of Nepal has fixed a ceiling for the migration cost to be charged by the Manpower Agency to the prospective migrants for labour migration. However, in practice migrants were found paying more than the government's ceiling. Involvement of brokers in the process of migration has also generated additional cost of migration. The migration costs could be reduced by avoiding the use of brokers or agents in the migration process. Instead of using the service of agents, the prospective migrants could lower the migration cost by contacting directly to the recruiting agencies, which are based in the big cities.

Use of remittances: Remittances can be a major source of income for many poor households in Nepal, helping to maintain their livelihoods. For economic development, remittances if spent only in consumer or durable goods may have a minimal impact on long-term growth. The share of migrants' households who had invested on land and housing were higher than non-migrants' households. For instance, investments on land and housing may not be beneficial to the nation, when mostly construction materials in Nepal are imported. Real estate prices in four major urban centres of Nepal had increased by six times from 2007 to 2010 (World Bank, 2010). This speculation can be due to the effects of remittances and land demand by migrants' families. Consequently, polices should direct remittances towards investment on industrial sector, which would create new employment opportunities and may help to increase revenue of the country. For instance, government could provide infrastructure such as good road network to motivate remitters and migrant households' to make investment on enterprises.

11.3 Future research

Further research on the determinants and use of remittances can be made by matching sampling to grab information on both the remitters in destination and migrant households at origin country. This study considered the household expenditures pattern for a year. The use of remittances for various years can be helpful in presenting the impact of remittances at the household and community level. In order to do so, extensive research on the use of remittances seems essential. The results show that elder heads were receiving remittances at a decreasing rate. The present study could not explain the reason behind this result. Further research on this area is needed. The effect of remittances on educational expenditures was not significant. Follow-up research on the relationship between educational expenditure and remittances are required.

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Deutsche Zusammenfassung

Migration und Rücküberweisungen sind von zunehmendem Interesse für internationale Organisationen, Politiker und Wissenschaftler in zahlreichen betroffenen Ländern, ebenso wie auf globaler Ebene. Weltweit nimmt die Mobilität zu, gefördert durch demographische und ökonomische Unterschiede zwischen wirtschaftlich entwickelten und weniger entwickelnden Ländern (Page and Plaza, 2006); Arbeitsmigration ist ein Begleitphänomen ökonomischer Entwicklung (Mendola, 2010). In Nepal reicht die Geschichte der internationalen Arbeitsmigration bis ins 19. Jahrhundert zurück, als die Briten begannen, Männer aus den Bergen Nepals für die britischen Streitkräfte zu rekrutieren; sie wurden weltweit bekannt als „Gurkhas“. Mit der Integration in die globale Ökonomie in den frühen 1990er Jahren entstanden Beschäftigungsmöglichkeiten für nepalesische Arbeiter im Nahen Osten und Süd-Ost-Asien (Hong Kong, Brunei, Japan, Korea und später Malaysia), was zu einer massiven Auswanderung von Arbeitskräften führte. Die bedeutende Rolle, welche die Migration für die wirtschaftliche Entwicklung des Landes allgemein und für die Verringerung der Armut im Besonderen spielt, wird von nationalen Institutionen ebenso wie von internationalen Organisationen anerkannt (Lokshin, Bontch-Osmoloviski and Glinskaya 2010; CBS, 2004).

Armut, Arbeitslosigkeit, erodierende natürliche Ressourcen sowie die seit Ende des 20. Jahrhunderts andauernde politische Instabilität sind die Hauptgründe für die hohe Migration aus Nepal (Kollmair et al., 2006; Gartaula, 2009). 2010 hielten sich nach den Ergebnissen des staatlichen Zensus 7,2 % der Bevölkerung (d.h. 1,92 Millionen Menschen) im Ausland auf (CBS, 2011). Rund 400 000 Menschen, d.h. durchschnittlich 1,000 Menschen täglich, haben Nepal zwischen Mai 2010 bis Mai 2011 verlassen, um im Ausland zu arbeiten (World Bank, 2011). Die Abwanderung aus Nepal

nimmt stetig zu und dementsprechend werden die Rücküberweisungen an die zurückgebliebenen Angehörigen erwartungsgemäß hoch bleiben. Für die meisten ländlichen Haushalte Nepals sind sie eine Haupteinkommensquelle. Die durch offizielle Kanäle transferierten Rücküberweisungen nach Nepal erreichten 2009 2.986 Mio. US$, i.e. 22,9 % des Bruttoinlandsprodukts des Landes (World Bank, 2010). Trotz der großen Bedeutung, welche diese Transfers insbesondere für die Sicherung des Lebensunterhalts armer Haushalte haben, sind die Beziehungen zwischen Migration, Rücküberweisungen und Wohlfahrt aus Haushaltsebene jedoch nur unzureichend untersucht, sodass für entsprechende Politikmaßnahmen keine ausreichenden Informationsgrundlagen vorhanden sind.

Vor diesem Hintergrund zielte die vorliegende Studie darauf ab, die Bestimmungsfaktoren für Migration und Rücküberweisungen in Nepal herauszuarbeiten sowie die Zusammenhänge zwischen Rücküberweisungen einerseits und den Ausgabenmustern der Haushalte andererseits zu analysieren. Als Untersuchungsregionen wurden zwei Distrikte in Ost-Nepal, Jhapa und Sunsari, ausgewählt, wo eine sozio-ökonomische Erhebung unter 542 Haushalten mit und ohne Migranten durchgeführt wurde. Entsprechend der Theorie der „Neuen Ökonomie der Arbeitsmigration“ („New Economics of Labour Migration“ (NELM)) wurde als Untersuchungseinheit der Haushalt gewählt. Das Untersuchungsgebiet und die zu befragenden Haushalte wurden durch mehrstufige Stichprobenziehung ausgesucht. Um die aufgeworfenen Fragen zu beantworten wurden deskriptive und ökonometrische Analysen durchgeführt. Die Determinanten von Migration und Überweisungen wurden auf der Basis von Haushaltseigenschaften, Sozialkapital, Realvermögen und regionalen Charakteristika mit Hilfe eines Logit-Models identifiziert. Um die Auswirkungen von Überweisungen auf verschiedene Ausgabenkategorien zu beurteilen, wurden OLS-Regressionen eingesetzt. Die Beziehungen zwischen

Überweisungen und Land-, Haus- und Gewerbebesitz wurden mit Hilfe eines Logit-Models geschätzt.

Überweisungen als greifbarer Vorteil der Migration, sind hinsichtlich ihres Beitrags zur wirtschaftlichen Entwicklung der Empfängerländer ein wichtiges Forschungsgebiet (Adams, 2005; de Haas, 2005). Die vorliegende Studie untersucht die Beziehungen zwischen Überweisungen und Ausgabemustern der empfangenden Haushalte. Die Verwendung von Überweisungen aus dem Ausland ist zum Schwerpunkt einer anhaltenden Debatte unter den Forschern, politischen Entscheidungsträgern und Regierungen geworden.

Die nepalesische Wirtschaft ist seit den 1990er Jahren einem bemerkenswerten Wandel unterworfen, welcher mit einem Rückgang der Armut, ansteigender Migration und sich verändernden Konsumgewohnheiten verbunden ist. Internationale Migration und damit verbundene Überweisungen sind wichtige Punkte auf der Agenda politischer Entscheidungsträger, Forscher und Entwicklungsorganisationen geworden. In der vorliegenden Studie wurden die Determinanten von Migrationen und der Einfluss der Abwanderungen auf Haushaltsebene untersucht. Die Ergebnisse zeigen, dass arbeitslose Männer mit einer Bildung von weniger als 10 Jahren eine höhere Migrationsneigung haben. Die gesetzlichen Rahmenbedingungen bevorteilen dabei Männer gegenüber Frauen. Eine Reihe spezifischer legaler Beschränkungen bezüglich der Migration von Frauen aus Nepal führt dazu, dass viele informell über Indien abwandern.

Die deskriptive Analyse vergleicht die Haushaltscharakteristika von Migranten- und Nichtmigrantenhaushalten, von welchen angenommen wird, dass sie ein fundamentales Verstehen für weitere empirische Analysen darstellen. Die Migranten der Umfrage sind fast ausschließlich männlich (94%) und im Durchschnitt 33 Jahre alt. Fast 40% der Migranten waren arbeitslos und 30% waren vor der Migration im landwirtschaftlichen Sektor

beschäftigt, mit einem Durchschnitt von 10 Jahren Ausbildung. Dies weist auf ein geringes Humankapital der Migranten hin. Die Migrantenhaushalte waren im Durchschnitt größer als die der Nichtmigranten; ebenso war ihr jährliches Einkommen höher. Die Mehrheit der Migranten schickt Geld an ihren Haushalt in der Heimat. 37% aller Haushalte und 95% der Migrantenhaushalte in der Region hatten im Jahr vor der Umfrage Rücküberweisungen erhalten. Migrantenhaushalten hatten einen größeren Grundbesitz und bewirtschafteten mehr Land als die Nicht-Migrantenhaushalten. Die Haushalte mit internationalen Migranten verwendeten einen größeren Teil ihre Ausgaben für Lebensmittel, Gesundheit und Bildung als die Nicht-Migrantenhaushalte.

Die Ergebnisse der Regression zeigen, dass die Wahrscheinlichkeit für eine Migration mit zunehmendem Alter des Familienoberhaupts sinkt. Dieses Ergebnis stimmt mit dem vieler anderer Untersuchungen überein (Goerlich und Trebesch, 2006; Karamba, Quinones und Winters, 2011). Die Wahrscheinlichkeit, ein migrierendes Haushaltsmitglied zu haben, steigt mit der Zahl männlicher Haushaltsmitglieder im Alter zwischen 15 und 60 Jahren. Ebenso ist diese Wahrscheinlichkeit signifikant höher in Haushalten mit einem weiblichen Oberhaupt, Haushalten, die zu den Ethnien der Berg Janajati und der Brahman/Chetri gehören sowie denjenigen, die bereits zuvor Erfahrungen mit internationaler Migration gemacht haben. Diese Ergebnisse stimmen weitgehend mit denen von Bohra-Mishra und Massey (2010) für Nepal und denen von Goerlich und Trebesch (2006) für Moldawien überein.

Die Wahrscheinlichkeit, Rücküberweisungen von Migranten zu erhalten, sind größer bei Haushalten mit einem höheren Anteil an männlichen Haushaltsmitgliedern im Alter zwischen 15 und 60 Jahren, bei Haushalten der Ethnie der Berg Janajati, bei weiblich geführten Haushalten, bei Großfamilien und in Haushalten, die ein Haus mit semi-permanenter Struktur besitzen. Das

Alter des Familienoberhaupts vermindert die Wahrscheinlichkeit, Überweisungen zu erhalten.

In der vorliegenden Arbeit wurde analysiert, welchen Einfluss der Erhalt von Geldrücküberweisungen auf das Ausgabeverhalten der betroffenen Haushalte hat. Die Ergebnisse der Studie haben aufgezeigt, dass das Konsumverhalten durch Geldrücküberweisungen beeinflusst wird. Besonders in zweierlei Hinsicht ist eine Veränderung des Ausgabeverhaltens ersichtlich: (i) Der Erhalt von Geldrücküberweisungen hat einen signifikant positiven Effekt auf Lebensmittel- und Gesundheitsausgaben; (ii) Geldrücküberweisungen haben einen nicht signifikanten negativen Einfluss auf Bildungsausgaben. Aus diesem Ergebnis lässt sich herleiten, dass Geldrücküberweisungen nicht signifikant zur Bildung von Humankapitalbildung beitragen. Im Gegensatz dazu steigen die Ausgaben für Lebensmittel und Gesundheitsfürsorge mit der Verfügbarkeit von Geldrücküberweisungen. Dies macht deutlich, dass die finanzielle Unterstützung besonders zur Steigerung alltäglicher Ausgaben benutzt wird. Es ist allerdings überraschend, dass Geldrücküberweisungen keinen signifikanten Einfluss auf Bildungsinvestitionen haben. Dies steht im Gegensatz zu Ergebnissen anderer Studien, die gezeigt haben, dass Geldrücküberweisungen zu höheren Bildungsausgaben führen und dadurch das Bildungsniveau gesteigert werden kann (Cox Edwards und Ureta, 2003; Yang, 2008). Es bleibt damit offen, warum Geldrücküberweisungen die Bildungsausgaben nicht erhöhen. In Hinblick auf die Verbesserung des Humankapitals im Bereich Gesundheit spielen Geldrücküberweisungen hingegen eine bedeutende Rolle.

Des Weiteren führt der Erhalt von Geldrücküberweisungen zur Akkumulation von Vermögen, besonders in Form von Land- und Hauserwerb. Die Ergebnisse der Studie zeigen auf, dass signifikante Anteile der Transfers dazu verwendet werden, Land zu erwerben und Häuser zu renovieren oder zu

bauen. Aus den Investitionen in Gebäude kann auch geschlossen werden, dass Rücküberweisungen indirekt auch positiven Auswirkungen auf Nicht-Migranten-Haushalte haben, da diese bei Bau- und Renovierungsarbeiten üblicherweise als Arbeitskräfte beschäftigt werden. Es zeigte sich ferner, dass eine signifikante Beziehung zwischen der Lohn-Variable und dem Besitz von Geschäften besteht. Das mag teilweise dadurch zu erklären sein, dass die meisten Geschäfte im Besitz von Nicht-Migrantenhaushalten sind.

Überweisungen von Migranten an ihre Haushalte in der Heimat erhöhen dort kurzfristig die Einkommen, was deren tägliches Überleben insbesondere hinsichtlich der Nahrungsmittelversorgung und Gesundheitsfürsorge sichert. Es zeigte sich überdies, dass Migrantenhaushalte eine bessere Wohnqualität genießen. Im Gegensatz zu anderen Studien konnte allerdings nicht festgestellt werden, dass durch Rücküberweisungen Kapitalbeschränkungen hinsichtlich produktiver Investitionen gelockert wurden. Die Verwendung der Transfers unterscheidet sich typischerweise entsprechend dem ökonomischen Status und den Bedürfnissen der empfangenden Haushalte. Die Befunde lassen insgesamt den Schluss zu, dass Migration und daraus resultierende Transfers in die Heimat ein erhebliches Potential haben, das dortige Konsumniveau zu steigern und auch Kapitalakkumulation in Form physischer Werte zu erhöhen und damit zur wirtschaftlichen Entwicklung des Ursprungslands beizutragen. Die zentrale Herausforderung für die Regierung Nepals ist es dabei, die Überweisungen in Richtung von Langzeitinvestitionen, die zur nachhaltigen wirtschaftlichen Entwicklung beitragen, zu lenken.

Die Migranten aus dem Untersuchungsgebiet hatten typischerweise ein niedriges Bildungsniveau. Nepal muss auf dem internationalen Arbeitsmarkt jedoch mit Arbeitskräften aus zahlreichen anderen Ländern konkurrieren. Durch die hohe Zahl von (temporär) abwanderungswilligen Arbeitskräften

könnte Nepals ökonomische Entwicklung noch stärker von der Auswanderung besser qualifizierter Arbeitskräfte profitieren. Auch hier könnte die nepalesische Regierung, entsprechend dem Beispiel anderer Arbeitskräfte entsendender Länder, durch geeignete Qualifikationsprogramme einen positiven Beitrag leisten.

Die Empfehlungen der Studie an die nepalesische Regierung beziehen sich auf spezielle Programme und Vorschriften, durch die die Aus- und Weiterbildung von Arbeitskräften mit geringer Qualifikation verbessert und sie gemäß ihrer Fähigkeiten besser eingesetzt werden könnten. Dies würde eine Win-Win-Situation darstellen, da hierdurch nicht nur die Arbeitnehmer gewinnen würden, sondern durch mögliche höhere Auslandsüberweisungen, auch die Regierung profitierte. Eine weitere Interventionsmaßnahme betrifft die von Migranten und ihren Familienangehörigen berichteten hohen Migrationskosten. Diese entstehen im Migrationsprozess vor allem durch die Einschaltung von Maklern. Die Migrationskosten könnten durch die Umgehung dieser Makler und dem direkten Kontakt zu den Vermittlungsbüros, welche in den großen Städten des Landes angesiedelt sind, gesenkt werden.

Für viele arme Haushalte Nepals stellen die Überweisungen eine Hauptquelle ihres Einkommens dar. Sie dienen dazu, den täglichen Lebensunterhalt zu bestreiten. Wenn die Überweisungen jedoch nur für Konsumgüter ausgegeben werden, haben sie möglicherweise nur einen geringen Einfluss auf die ökonomische Entwicklung und das langfristige Wachstum der Volkswirtschaft. Allerdings zeigt sich, dass der Anteil der Migranten-Haushalte, die in Land und Gebäude investierten, höher ist als derjenige der Nicht-Migrantenhaushalte. Gebäudeinvestitionen können sich aber auch durch einen erhöhten Import an Baumaterialien negativ auf die Zahlungsbilanz des Landes auswirken. Daher sollten Investitionen durch

staatliche Verordnungen vor allen in den Industriesektor gelenkt werden, um dort neue Beschäftigungsmöglichkeiten zu schaffen und dadurch auch die Staatseinnahmen zu erhöhen.

Die vorliegende Arbeit hat die Ausgabenmuster der Haushalte für den Zeitraum eines Jahres erforscht. Um weitergehende Auswirkungen von Überweisungen auf der Haushaltsebene zu untersuchen, kann eine mehrjährige Betrachtungsweise hilfreich sein. So konnte zum Beispiel kein signifikanter Effekt der Überweisungen auf die Bildungsausgaben nachgewiesen werden. Daher erscheint weitere Forschung auf diesem Gebiet als erforderlich.

Annex A

Table A.1 Caste and ethnicity classified by major groups.

	Main caste/Ethnic Groups (7)	Caste/Ethnic groups with regional Divisions (110 and Social Groups (103)	
Caste groups	*1.Brahman/Chhetri*	1.1	Hill Brahman Hill Brahman
		1.2	Hill Chhetri Chhetri, Thakuri, Sanyasi
		1.3	Taria/Madhesi Brahman/Chhteri Madeshi Brahman, Nurang, Rajput, Kayastha
	2.Tarai/Madhesi Other Castes	2.1	Tarai/Madhesi Other Castes Kewat, Mallah, Lohar, Nuniya, Kahar, Lodha, Rajbhar, Bing, Mali, Kamar, Dhuniya, Yadav, Teli, Koiri, Kurmi, Sonar, Baniya, Kalwar, Thakur/Hazam, Kanu, Sudhi, Kumhar, Haluwai, Badhai, Barai, Bhediyar/Gaderi
	3.Dalits	3.1	Hill Dalit Kami, Dami/Dholi, Sarki, Badi, Gaine, Unidentified Dalits
		3.2	Tarai/Madhesi Dalit Chamar/Harijan, Mushar, Dushad/Paswan, Tatma, Khatwe, Dhobi, Baantar, Chidimar, Dom, Halkhor
	4.Newar	4	Newar Newar
Adivasi/Janajtis	*5. Janajati*	5.1	Hill/Mountain Janajati Tamang, Kumal, Sunuwar, Majhi, Danuwar, Thami/Thangmi, Darai, Bhote, Baramu/Bramhu, Pahari, Kusunda, Raji, Raute, Chepang/Praja, Hayu, Magar, Chyantal, Rai, Sherpa, Bhujel/Gharti, Yakha, Thakali, Limbu, Lepcha, Bhote, Byansi, Jirel, Hyalmo, Walung, Gurung, Dura
		5.2	Tarai Janajati Tharu, Jhangad, Dhanuk, Rajbanshi, Gangai, Snathal/Satar, Dhimal, Tajpuriya, Meche, Koche, Kisan, Munda, Kusbbadiya/Patharkata, Unidentified Adibasi/Janajati
	6..Muslim	6	Muslim Madhesi Muslim, Churoute (Hill Muslim)
Other	*7. Other*	7	Other Marwari, Banglai, Jain, Punjabi/Sikh, Unidentified Others

Source: Bennett, Dahal and Govindasamy, 2008 and UNDP, 2009

Table A.2 Migration streams in Jhapa and Sunsari in 2001.

District	Migration stream				
	Rural-Urban	Urban-	Rural-Rural	Urban-Rural	Total
Jhapa	24,811	1,076	132,170	4,235	162,292
	(15.3)	(0.7)	(81.4)	(2.6)	
Sunsari	53,970	3,292	98,845	3,679	159,786
	(33.8)	(2.1)	(61.9)	(2.3)	
Nepal	746,285	81,425	1,997,847	103,506	2,929,063
	(25.5)	(2.8)	(68.2)	(3.5)	

NB: Percentages in parenthesis
Source: CBS, 2003

Table A.3 Sectoral composition of GDP at current prices

(in percentage)

Indicators	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Agriculture and forestry	36.15	36.92	36.03	35.45	34.71	33.09	32.05	31.22	32.10	33.03
Fishing	0.43	0.49	0.46	0.48	0.47	0.49	0.47	0.50	0.55	0.52
Mining and Quarrying	0.43	0.48	0.49	0.48	0.49	0.50	0.49	0.56	0.54	0.52
Manufacturing	9.03	8.50	8.20	8.05	7.92	7.59	7.48	7.34	6.83	6.25
Electricity gas and water	1.82	2.06	2.42	2.31	2.26	2.09	2.13	1.95	1.61	1.49
Construction	6.01	6.49	6.54	6.42	6.47	6.50	6.47	6.95	6.78	6.64
Wholesale and retail trade	16.44	14.59	14.51	15.29	14.09	14.31	13.29	13.51	13.40	13.97
Hotels and Restaurants	1.99	1.61	1.59	1.73	1.57	1.49	1.44	1.48	1.49	1.67
Transport storage and communications	7.39	7.87	8.31	8.94	9.06	9.72	9.97	9.86	9.93	9.76
Financial Intermediation	2.69	2.75	2.72	2.65	3.06	3.49	4.08	4.30	4.10	4.07
Real estate, renting and business activities	8.29	8.23	8.08	7.22	8.69	9.53	10.15	9.45	8.79	8.26
Public Administration and defence	1.24	1.63	1.70	1.55	1.69	1.74	1.75	1.84	1.97	1.99
Education	4.08	4.69	5.19	5.08	5.59	5.55	5.87	6.25	6.69	6.67
Health and Social work	0.98	1.04	1.14	1.12	1.24	1.24	1.23	1.41	1.49	1.46
Other community, social and person service activities	3.03	2.66	2.63	2.73	2.69	2.67	3.12	3.40	3.74	3.70

R=Revised, P=Preliminary

Source: Economic Survey, 2010, Ministry of Finance, Nepal

Table A.4 Direction of Foreign trade (200/01-2010/11)

NRs. in ten million

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11P
Export F.O.B	5565.41	4694.48	4993.06	5391.07	5870.57	6023.41	5938.31	5926.65	6769.75	6082.4	4018.41
Import C.I.F	11568.72	10738.9	12435.21	13627.71	14947.36	17378.03	19469.46	22193.77	28446.96	37433.52	25006.06
Trade Balance	**-6003.31**	**-6044.42**	**-7442.15**	**-8236.64**	**-9076.79**	**-11354.52**	**-13531.2**	**-16267.12**	**-21677.21**	**-31351.12**	**-20987.62**
India	1918.08	-2866.59	-4449.42	-4796.24	-4975.86	-6642.84	-7414.35	-10382.1	-12143.2	-1771206.0	-1110200.0
Other countries	4085.23	-3177.83	-2992.73	-3550.4	-4100.94	-4711.78	-6116.60	-5885.04	-9534.04	-13639.1	-9884.6
Total volume of trade	**17134.13**	**15433.38**	**17428.27**	**19018.78**	**20817.93**	**23401.44**	**25407.77**	**28120.42**	**35216.71**	**43515.92**	**29024.5**
India	7124.12	8457.83	9735.42	10951.66	12759.24	14785.78	15760.11	18093.22	20344.35	25710.8	16277.65
Other countries	10010.01	6975.55	7692.85	8067.12	8058.69	8615.66	9647.66	10027.2	14872.3	17805.12	12746.85
Share in total trade (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
India	41.6	54.8	55.86	57.58	61.29	63.18	62.03	64.34	57.77	59.08	56.08
Other countries	58.4	45.2	44.14	42.42	38.71	36.82	37.97	35.66	42.23	40.92	43.92
Exports of goods and services as percentage of GDP	**22.56**	**17.74**	**15.7**	**16.68**	**14.58**	**13.45**	**12.86**	**12.78**	**12.42**	**9.78**	**8.68**
Imports of goods and services as percentage of GDP	**33.24**	**28.49**	**28.55**	**29.46**	**29.48**	**31.32**	**31.72**	**33.26**	**34.67**	**37.44**	**32.24**

Source: Economic Survey, 2010, Ministry of Finance, Nepal

Table A.5 Level of educational attainment for literate person 6 years and above (%)

Educational Level	1971	1981	1991	2001		
				Total	Male	Female
Informal schooling	4.4	5.5	8.9	4.7	5.5	3.9
Primary Education (1-5)	5.8	11.3	16.1	22.7	25.7	19.6
Secondary Education (6-10)	3.1	4.8	8.9	16.5	16.5	12.9
SLC/Intermediate	0.3	1.2	2.8	7.7	10.3	5.1
Graduate/Post Graduate	0.2	0.4	0.6	1.8	3.0	0.6
Level not stated			1.8	0.7	0.8	0.5
Total	13.8	23.2	39.1	54.1	65.8	42.8

Source: CBS, 2002

Table A.6 Distribution of arable land by development region in 2010/11

Development Region	Agricultural land (%)	Average Landholding (ha)
Eastern	31.1	0.9
Central	28.7	0.6
Western	18.8	0.6
Mid-Western	12.8	0.6
Far-Western	8.7	0.6

Source: CBS, 2011

Table A.7 Number of holdings and area by development region in the census year 2001/02

Classification	Development region (2001/02)					Nepal
	Eastern	Central	Wester	Mid-western	Far-	
Total Holdings	810.0	1035.8	715.8	469.5	333.0	3364
Holdings with land	799.7	1026.9	711.7	467.4	331.7	3337
Holdings with no land	10.3	8.9	4.1	2.1	1.3	26.7
% Land holdings to total	98.7	99.1	99.4	99.6	99.6	99.2
Area of land holdings ('000	795.5	750.2	512.1	370.1	225.4	2653
Average land holding size	0.99	0.73	0.72	0.79	0.68	0.80

Source: CBS, 2002

Table A.8 Cropped area and yield in Nepal (1986/87-2009/10)

Year	Paddy		Maize		Millet		Wheat		Barley	
	Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield
1986/87	1333360	1779	626710	1386	150780	913	535530	1309	28560	864
1987/88	1423290	2095	673810	1338	164770	911	596750	1248	29110	834
1988/89	1450470	2264	721870	1484	182560	1003	599290	1385	29450	917
1989/90	1432850	2366	751170	1599	193490	1162	604240	1415	29540	927
1990/91	1455170	2407	757710	1625	198570	1166	592740	1410	29610	940
1991/92	1411810	2283	754090	1598	198240	1153	571260	1334	29660	932
1992/93	1262110	2048	775220	1665	201770	1173	613980	1246	29680	930
1993/94	1450449	2410	754099	1663	225207	1092	611309	1470	37385	940

Year	Paddy		Maize		Millet		Wheat		Barley	
1994/95	1368423	2124	771410	1688	228061	1109	624329	1508	39096	949
1995/96	1496790	2391	791700	1681	260090	1086	653500	1550	39400	1049
1996/97	1511230	2455	793720	1659	259940	1114	667120	1607	35280	1040
1997/98	1506340	2417	799060	1711	262440	1086	640030	1610	35590	1044
1998/99	1514210	2450	802290	1678	263950	1104	640802	1695	31843	999
1999/00	1550990	2598	819010	1765	263450	1121	660040	1793	28196	1093
2000/01	1560044	2703	824525	1800	259888	1088	641030	1806	28194	1081
2001/02	1516980	2745	825980	1829	258120	1095	667077	1886	27722	1111
2002/03	1544660	2675	836190	1877	259130	1092	669014	2009	27555	1151
2003/04	1559436	2857	834285	1906	258597	1096	664589	2087	27467	1091
2004/05	1541729	2782	849892	2019	258839	1120	675807	2134	26428	1110
2005/06	1549447	2717	850947	2038	261673	1112	672040	2074	26227	1059
2006/07	1439525	2557	870401	2091	265160	1074	702664	2156	26580	1064
2007/08	1549262	2775	870166	2159	265496	1096	706481	2225	26106	1076
2008/09	1555940	2907	875428	2205	265889	1101	694950	1934	25817	900
2009/10	1481289	2716	875660	2119	268473	1116	731131	2129	26600	1037

Source: Government of Nepal, Ministry of Agriculture and Cooperative, 2012

Table A.9 Flow of remittances in Nepal from 1996 till 2010.

Year	Remittances inflows (US $ Million)	Year	Remittances inflows (US $ Million)
1996	44	2004	823
1997	49	2005	1,212
1998	68	2006	1,453
1999	83	2007	1,734
2000	111	2008	2,727
2001	147	2009	2,986
2002	678	2010	3,468
2003	771	2011e	3951

Source: Migration and Remittances Factbook, 2011 and World Bank, 2012

Table A.10 Robust standard errors for determinants of migration and remittances

Variables	Migration Robust S.E.	Remittances Robust S.E.
Household characteristics		
Age of head of household (years)	0.104	0.091
Age squared of head	0.001	0.001
Sex of head		
Male*		
Female (Dummy)	0.385	0.362
No. of very young dependents (0-4 years)	0.280	0.257
No. of other dependents (5-14 & >60 years)	0.123	0.126
No. of young women (15-29 years)	0.214	0.206
No. of young men (15-29 years)	0.200	0.189

Variables	Migration Robust S.E.	Remittances Robust S.E.
No. of adult women (30-60 years)	0.286	0.269
No. of adult men (30-60 years)	0.284	0.267
Occupation of head		
Agriculture*		
Service (Dummy)	0.518	0.497
Business (Dummy)	0.429	0.413
Wage earner (Dummy)	0.680	0.642
Others (Dummy)	0.829	0.751
Unemployed (Dummy)	0.588	0.532
Ethnicity		
Brahman/Chhetri*		
Newar (Dummy)	0.537	0.497
Hill Janajati (Dummy)	0.332	0.317
Tarai Janajati (Dummy)	0.479	0.497
Hill/Tarai Dalit (Dummy)	0.886	0.317
Family Structure		
Nuclear family *		
Extended family (Dummy)	0.326	0.322
Human capital		
Education of head (years)	0.082	0.824
Education squared	0.006	0.007
No. of adults with higher education	0.144	0.128
Social Capital		
Family's previous international migration experience (Dummy)	.505	-
Physical Capital		
Land holding (hectares)	0.365	0.343
Landholding square	0.073	0.071
Asset index (Average)	0.069	0.058
Household debt (Dummy)	0.270	0.261
Housing structure		
Permanent*		
Semi-permanent (Dummy)	0.376	0.071
Temporary (Dummy)	0.390	0.379
Other (Dummy)	0.666	0.621
Region		
District		
Sunsari*		
Jhapa (Dummy)	0.290	0.269

Variables	Migration Robust S.E.	Remittances Robust S.E.
Area/location		
Urban*		
Rural (Dummy)	0.368	0.368
Constant	2.310	2.073
Number of Observation	542	542

Source: Author's own calculation

Table A.11 Robust standard errors for determinants of expenditures on food, education and health care

Independent variables	Food Robust S.E.	Education Robust S.E.	Health Robust S.E
Received remittances (Dummy)	3362.657	2682.303	2039.638
Household Characteristics			
No. of very young dependents of aged 0-4 years	3346.179	2015.006	1329.245
No. of young dependents of aged 5-14 years	1473.790	1720.213	717.1394
No. of young female aged 15-29 years	1659.121	1692.578	934.6367
No. of young male aged 15-29 years	2036.022	1777.593	875.4988
No. of adult female aged 30-60 years	3092.700	2199.983	1183.446
No. of adult male aged 30-60 years	2974.767	2211.137	1916.472
No. of other dependents above 60 years	2311.032	1720.213	980.217
Age of head of household (years)	161.100	121.371	100.1436
Sex of head			
Male headed household	-	-	-
Female headed household (Dummy)	3920.638	4356.913	2145.413
Employment sector of head			
Agriculture			
Non-agriculture (Dummy)	3344.998	3306.751	1933.177
Unemployed (Dummy)	4591.516	5096.414	1584.508
Ethnicity/Caste group			
Brhaman/Chhetri	-	-	-
Newar (Dummy)	5740.023	5935.353	1983.508
Hill Janajati (Dummy)	4191.516	3398.821	2027.597
Tarai Janajati (Dummy)	3790.405	3340.087	1584.508
Hill/Tarai Dalit (Dummy)	6037.057	3641.554	2316.150
Human capital			
Education of head (years)	363.2251	291.0211	227.540
Adults with higher education	1366.675	1288.345	713.445
Physical capital			

Independent variables	Food Robust S.E.	Education Robust S.E.	Health Robust S.E
Landholding (hectares)	4330.022	2048.911	2062.669
Landholding square	1274.436	-	417.216
Asset index (average number)	670.0793	438.9723	312.980
Housing Structure			
Permanent*			
Semi-permanent (Dummy)	1274.436	3284.109	2050.56
Temporary (Dummy)	3655.075	4243.485	2521.999
Others (Dummy)	5993.955	5060.098	2699.066
Income quintile			
Quintile 1*	-	-	-
Quintile 2 (Dummy)	4090.122	2568.258	2611.388
Quintile 3 (Dummy)	3669.408	4424.943	2121.062
Quintile 4(Dummy)	4615.346	4738.405	2646.997
Quintile 5(Dummy)	5315.239	7236.181	3604.672
Location/region			
Area			
Urban*	-	-	-
Rural (Dummy)	3386.950	2965.020	2549.378
District			
Sunsari *			
Jhapa (Dummy)	3173.337	2965.020	1170.793
Constant	11702.61	8015.163	5357.589
Number of observation	542	542	542

Source: Author's own calculation

Table A.12 Robust standard errors for determinants of investments in land, house and business ownership in last five years

Variables	Land Robust S.E.	House Robust S.E.	Business ownership Robust S.E.
Dependent variables			
Investments in land (Dummy)	-		
Investments on house (Dummy)		-	
Investments on business (Dummy)			-
Independent variables			
Received remittances (Dummy)	0.299	0.303	0.380
Households characteristics			
Age of head of household (years)	0.075	0.083	0.099
Age squared of household head	0.001	0.001	0.001
Female headed household (Dummy)	0.417	0.398	0.508
No. of very young dependents aged 0-4 years	0.248	0.228	0.295

Variables	Land Robust S.E.	House Robust S.E.	Business ownership Robust S.E.
No. of young dependents of aged 5-14 years	0.141	0.153	0.163
No. of other dependents above 60 years	0.194	0.208	0.248
No. of young female aged 15-29 years	0.171	0.161	0.216
No. of young male aged 15-29 years	0.187	0.166	0.191
No. of adult female aged 30-60 years	0.273	0.259	0.264
No. of adult male aged 30-60 years	0.244	0.305	0.285
Occupation of household head			
Agriculture*			
Non-agriculture (Dummy)	0.372	0.345	0.427
Unemployed (Dummy)	0.448	0.395	0.709
Ethnicity			
Brahman/Chhetri*			
Newar (Dummy)	0.459	0.435	0.507
Hill Janajati (Dummy)	0.338	0.316	0.358
Tarai Janajati (Dummy)	0.570	0.603	0.573
Hill/Tarai Dalit (Dummy)	0.603	0.523	0.721
Family Structure			
Nuclear family*			
Extended family (Dummy)	0.306	0.321	0.333
Human Capital			
Education of head (years)	0.080	0.076	0.085
Education squared	0.005	0.006	0.006
No. of adults with higher education			0.139
Physical capital			
Land holding (hectares)	0.328	0.328	0.491
Landholding squared	0.078	0.079	0.143
Asset index (Average)	0.051	0.048	0.059
Household debt (Dummy)	0.228	0.230	0.321
Housing structure			
Permanent*			
Semi-permanent (Dummy)	0.333	0.311	0.366
Temporary (Dummy)	0.357	0.405	0.354
Others (Dummy)	0.764	0.762	0.933
Region			
District			
Sunsari*			
Jhapa (Dummy)	0.233	0.247	0.295
Area			
Urban*			
Rural (Dummy)	0.329	0.296	0.368
Constant	1.830	1.973	2.329
Number of Observation	542	542	542

Variables	Land Robust S.E.	House Robust S.E.	Business ownership Robust S.E.
Log –Likelihood			

Source: Author's own calculation

Table A.13 Determinants of clothing expenditure

Variables	Coefficient	Robust S.E.
Received remittances (Dummy)	-9.608	466.2662
Household characteristics		
No. of very young dependents aged 0-4 years	198.695	504.616
No. of young dependents aged 5-14 years	1185.414*	695.216
No. of young female aged 15-29 years	1989.106***	600.769
No. of young male aged 15-29 years	754.766**	276.030
No. of adult female aged 30-60 years	1742.269**	737.031
No. of adult male aged 30-60 years	272.984	426.835
No. of other dependents aged above 60 years	508.125	347.706
Age of household head (years)	-46.296	25.903
Female headed household (Dummy)	-269.356	606.332
Employment sector of household head		
Non-agriculture (Dummy)	135.396	697.579
Unemployed (Dummy)	81.474	709.582
Ethnicity/Caste group		
Newar(Dummy)	-498.331	828.190
Hill Janajati (Dummy)	-1067.101	688.0325
Tarai Janajati (Dummy)	-1028.371	730.081
Hill/Tarai Dalit (Dummy)	-1805.834*	945.265
Human capital		
Education of head (years)	50.862	68.380
No. of adults with higher education	78.976	231.749
Physical capital		
Landholding (hectares)	501.574	371.714
Asset index (Average)	342.755***	116.978
Housing Structure		
Semi-permanent (Dummy)	-890.605	999.069
Temporary(Dummy)	-1069.656	1155.319
Others (Dummy)	-1956.344	1420.365
Income quintile		
Quintile 2(Dummy)	429.107	679.007
Quintile 3(Dummy)	517.010	604.715
Quintile 4(Dummy)	2264.325	1002.395
Quintile 5(Dummy)	1787.899	906.933
Location/region		
Rural area (Dummy)	818.519	1221.514
Jhapa District (Dummy)	-1518.328 **	767.745
Constant	2513.683	1658.265
Number of observation =542		

Variables	Coefficient	Robust S.E.
F(29, 512) = 12.96***		
R-squared = 0.219		
Root MSE = 6257		

Notes: *, ** and *** stands for significance at the 10, 5 and 1 % level respectively.

Table A.14 Determinants of festival expenditure

Variables	Coefficient	Robust S.E.
Received remittances (Dummy)	3528.156	3495.022
Household characteristics		
No. of very young dependents aged 0-4 years	279.090	682.122
No. of young dependents aged 5-14 years	-769.896*	464.563
No. of young female aged 15-29 years	267.698	399.856
No. of young male aged 15-29 years	-346.710	640.880
No. of adult female aged 30-60 years	1.526	697.394
No. of adult male aged 30-60 years	-487.498	1104.953
No. of other dependents aged above 60 years	-1016.528	836.086
Age of household head (years)	30.016	36.995
Female headed household (Dummy)	-3023.707	1896.039
Employment sector of household head		
Non-agriculture (Dummy)	-82.199	1165.779
Unemployed (Dummy)	-597.36	1696.435
Ethnicity/Caste group		
Newar (Dummy)	-4370.331 *	2432.269
Hill Janajati (Dummy)	-1385.768	2008.742
Tarai Janajati (Dummy)	-828.024	1082.907
Hill/Tarai Dalit (Dummy)	1345.318	1395.114
Human capital		
Education of household head (years)	114.653	114.571
No. of adults with higher education	344.121	317.574
Physical capital		
Landholding (hectares)	1249.659***	495.705
Asset index (Average)	542.917 ***	139.744
Housing Structure		
Semi-permanent (Dummy)	-2307.244	1628.847
Temporary (Dummy)	-1902.503	1381.391
Others (Dummy)	-1622.185	1322.714
Income quintile		
Quintile 2 (Dummy)	426.741	766.938
Quintile 3 (Dummy)	846.001	909.503
Quintile 4 (Dummy)	843.246	1228.675
Quintile 5 (Dummy)	4570.775	3036.484
Location/region		
Rural area (Dummy)	-1515.014	1229.536
Jhapa District (Dummy)	-3513.74**	1481.335

Variables	Coefficient	Robust S.E.
Constant	7382.165	3950.581
Number of observation =542		
F(29, 512) = 8.04***		
R-squared = 0.159		
Root MSE = 11734		

Notes: *, ** and *** stands for significance at the 10, 5 and 1% level respectively.
Source: Author's own calculation

Table A.15 Determinants of travel expenditure

Variables	Coefficient	Robust S.E.
Received remittances (Dummy)	-1681.66**	160.8329
Household characteristics		
No. of very young dependents aged 0-4 years	-332.0434	736.6795
No. of young dependents aged 5-14 years	-236.0912	552.3834
No. of young female aged 15-29 years	-160.4491	529.002
No. of young male aged 15-29 years	-28.67455	531.2264
No. of adult female aged 30-60 years	-336.641	890.42
No. of adult male aged 30-60 years	-189.6356	926.0585
No. of other dependents aged above 60 years	544.1083	882.6915
Age of household head (years)	-59.46799	48.67398
Female headed household (Dummy)	-1152.387	1098.503
Employment sector of household head		
Non-agriculture (Dummy)	762.0907	1082.366
Unemployed (Dummy)	261.7328	1289.634
Ethnicity/Caste group		
Newar (Dummy)	-967.0158	2051.007
Hill Janajati (Dummy)	-322.8587	1169.336
Tarai Janajati (Dummy)	-738.431	1157.026
Hill/Tarai Dalit (Dummy)	808.9155	1758.552
Human capital		
Education of head (years)	91.08345	87.71703
No. of adults with higher education	221.9303	316.0314
Physical capital		
Landholding (hectares)	2125.372***	731.167
Asset index (Average)	738.5963***	160.8329
Housing Structure		
Semi-permanent (Dummy)	1987.905	1286.136
Temporary (Dummy)	272.9561	1110.414
Others (Dummy)	1165.667	1499.293
Income quintile		
Quintile 2 (Dummy)	-705.632	882.9368
Quintile 3 (Dummy)	-2314.817**	1020.909
Quintile 4 (Dummy)	-1777.799	1221.937

Quintile 5 (Dummy)	6269.075***	1662.914
Location/region		
Rural area (Dummy)	449.1201	1147.303
Jhapa District (Dummy)	-3096.082***	815.974
Constant	2508.229	3032.274
Number of observation =542		
F(29, 513) = 4.02***		
R-squared =0.2488		
Root MSE = 9323		

Notes: *, ** and *** stands for significance at the 10, 5 and 1% level respectively.
Source: Author's own calculation

Table A.16 Determinants of total expenditures

Variables	Coefficient	Robust S.E.
Received remittances (Dummy)	13290.54**	7194.339
Household characteristics		
No. of very young dependents aged 0-4 years	1516.342	4986.102
No. of young dependents aged 5-14 years	3881.052	2732.127
No. of young female aged 15-29 years	852.7792	2988.071
No. of young male aged 15-29 years	10301.23	3425.792
No. of adult female aged 30-60 years	2922.316	4592.428
No. of adult male aged 30-60 years	2943.147***	4349.596
No. of other dependents aged above 60 years	6657.934	4086.513
Age of household head (years)	-150.8783	258.1478
Female headed household (Dummy)	-20.52814	7699.55
Employment sector of household head		
Non-agriculture (Dummy)	5989.07	6186.462
Unemployed (Dummy)	13319.92	8708.291
Ethnicity/Caste group		
Newar (Dummy)	-2156.65	8859.868
Hill Janajati (Dummy)	-8337.229	7703.845
Tarai Janajati (Dummy)	-7509.386	6584.526
Hill/Tarai Dalit (Dummy)	396.8081	7754.747
Human capital		
Education of household head (years)	-107.898	583.7454
No. of adults with higher education	2559.685	2278.155
Physical capital		
Landholding (hectares)	8529.314**	3539.364
Asset index (Average)	5579.12***	1047.64
Housing Structure		
Semi-permanent (Dummy)	-15228.85**	6707.944
Temporary (Dummy)	-15172.83**	6672.016
Others (Dummy)	-5037.715	9339.177
Income quintile		
Quintile 2 (Dummy)	-2846.244	6499.33
Quintile 3 (Dummy)	799.4165	7113.913
Quintile 4(Dummy)	17469.01**	8108.027

Quintile 5 (Dummy)	54409.3 ***	11064.54
Location/region		
Rural area (Dummy)	34692.85***	5738.026
Jhapa District (Dummy)	-4569.812	5486.677
Constant	14771.52	17882.39
Number of observation =542		
F(29, 513) = 18.99***		
R-squared =0. 488		
Root MSE = 52912		

Notes: *, ** and *** stands for significance at the 10, 5 and 1% level respectively.
Source: Author's own calculation

Annex B

University of Kassel, Germany

Questionnaire for Household Survey

A Case Study in Eastern Nepal (Jhapa and Sunsari district)

The information given by the interviewees will be completely confidential, anonymous and only used for the academic purpose. The following questions are answered by an adult person who has broad knowledge about different aspect of the home, family and migrant characteristics.

Interview No. …… Date:……

1. Personal identification

1. 1. Name of the respondent:

1.2 Age: …….

1.3 Sex ……

1.4 Education:……

1.5 Occupation:……..

1.6 Marital status: ……

1.7 Ethnicity/caste:……

1.8 Family type: ☐ Nuclear ☐ Extended

.8 District:☐ Sunsari ☐ Jhapa

1.9 Rural/Urban area:……

2. Household composition

Household member

Name	Age (Yrs)	Sex	Marital Status	Relationship with Head	Education in years	Occupation*	Location

*1: Main Occupation: 1 – Farming, 2 – Wage work, 3 – Business/trade, 4 – Govt. Employed, 5 – Others

3. Socio-economic condition

3.1 Current socio-economic condition of migrants and non-migrants household

No.	Migrant household	Non-migrant household
3.1	Sex: ☐ Male ☐ Female	Sex: ☐ Male ☐ Female ☐
3.2	Age:…….	Age:…….
3.3	Current marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed	Current marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed
3.4	If married then number, age and sex of children:…….	If married then number, age and sex of children:…….
35	Current Education level:……	Current Education level:……
3.6	Current occupation: ☐	Current occupation:
3.7	Sector of Occupation: ☐ Agriculture ☐ Business/Trade ☐ Service ☐ Education ☐ Unemployed ☐ Self employed	Sector of Occupation: ☐ Agriculture ☐ Business/Trade ☐ Service ☐ Education ☐ Unemployed ☐ Self employed
3.8	Did the migrant have own house before migration?(If no, go to section 3) ☐ Yes ☐ No If yes, type of house: ☐ Kutcha ☐ Pucca ☐ Wooden ☐ Mud House Number of houses and location…….. Number of rooms at home excluding kitchen and bathroom:..... Number of stories:	Did the migrant have own house before migration?(If no, go to section 3) ☐ Yes ☐ No If yes, type of house: ☐ Kutcha ☐ Pucca ☐ Wooden ☐ Mud House Number of houses and location…….. Number of rooms at home excluding kitchen and bathroom:..... Number of stories: ***Housing material:***

	Housing material: Roof type/material:..... Wall of house:……... Roof of house:…….. Floor of house:…….. Value of house (NRs):……. Year of construction (Building): …….…….. Land area of house:…….. Bathroom:☐ Attached inside☐ Outside☐ no Water supply:☐ Tap ☐Well ☐Handpump Electricity facility: ☐ Yes ☐No	Roof type/material:..... Wall of house:……... Roof of house:…….. Floor of house:…….. Value of house (NRs):……. Year of construction (Building):…….. Land area of house:…….. Bathroom: ☐ Attached inside ☐ Outside ☐ no☐ Water supply: ☐ Tap ☐ Well ☐ Handpump Electricity facility: ☐ Yes ☐No
3.9	Agriculture owned Land:……./bigha Rent in:……/ bigha Rent out:……. /bigha Owner cum tenant……/bigha Price of agricultural land…./bigha	Agriculture owned Land:……./bigha Rent in:……/ bigha Rent out:……. /bigha Owner cum tenant……/bigha Price of agricultural land…./bigha
3.10	Destination Country: ☐India ☐ Saudi Arabia ☐ Qatar ☐UAE ☐Malaysia ☐Japan ☐ Korea ☐ Others…… Departure date:…….. Duration:…….. Was any family member travelling together? ☐ Yes ☐ No Monthly income:…….NRs Is food and accommodation provided? ☐Yes ☐No ☐Only accommodation	Destination Country: ☐ India ☐Saudi Arabia ☐Qatar ☐UAE ☐Malaysia ☐Japan ☐ Korea ☐Others……. Departure date:…….. Duration:…….. Was any family member travelling together? ☐ Yes ☐ No Monthly income:…….NRs Is food and accommodation provided? ☐Yes ☐No ☐ Only accommodation

	Has he/she travelled to any country for work before this migration? ☐ Yes ☐ No If yes, then which country and when?.....	Has he/she travelled to any country for work before this migration? ☐ Yes ☐ No If yes, then which country and when?.....

4. Socio-economic condition of migrants and non-migrants household before migration:

No.	Migrant household	Non-Migrant household
4.1	Sex: ☐ Male ☐ Female	Sex: ☐ Male ☐ Female
4.2	Age:…….	Age:…….
4.3	Current marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed	Current marital Status: ☐ Single ☐ Married ☐ Divorced ☐ Widowed
4.4	If married then number, age and sex of children:…….	If married then number, age and sex of children:…….
4.5	Current Education level:……	Current Education level:……
4.6	Current occupation: ☐	Current occupation:
4.7	Sector of Occupation: ☐ Agriculture ☐ Business/Trade ☐ Service ☐ Education ☐ Unemployed ☐ Self employed	Sector of Occupation: ☐ Agriculture ☐ Business/Trade ☐ Service ☐ Education ☐ Unemployed ☐ Self employed
4.8	Did the migrant have own house before migration?(If no, go to section 3) ☐ Yes ☐ No If yes, type of house: ☐ Kutcha ☐ Pucca ☐ Wooden ☐ Mud House Number of houses and location…….. Number of rooms at home excluding kitchen and bathroom:..... Number of stories: ***Housing material:***	Did the migrant have own house before migration?(If no, go to section 3) ☐ Yes ☐ No If yes, type of house: ☐ Kutcha ☐ Pucca ☐ Wooden ☐ Mud House Number of houses and location…….. Number of rooms at home excluding kitchen and bathroom:..... Number of stories:

	Roof type/material:..... Wall of house:…….. Roof of house:…….. Floor of house:…….. Value of house (NRs):……. Year of construction (Building): ……..…….. Land area of house:…….. Bathroom: Attached inside Outside no Water supply: Tap Well Handpump Electricity facility: Yes No Telephone: Yes No Cell: Yes No	***Housing material:*** Roof type/material:..... Wall of house:……... Roof of house:…….. Floor of house:…….. Value of house (NRs):……. Year of construction (Building):…….. Land area of house:…….. Bathroom: Attached inside Outside no Water supply: Tap Well Handpump Electricity facility: Yes No Telephone: Yes No Cell: Yes No
4.9	Agriculture owned Land:……./bigha Rent in:……/ bigha Rent out:……. /bigha Owner cum tenant……/bigha Price of agricultural land…./bigha	Agriculture owned Land:……./bigha Rent in:……/ bigha Rent out:……. /bigha Owner cum tenant……/bigha Price of agricultural land…./bigha
4.10	Destination Country: India Saudi Arabia Qatar UAE Malaysia Japan Korea Others…… Departure date:…….. Duration:…….. Was any family member travelling together? Yes No Monthly income:…….NRs	Destination Country: India Saudi Arabia Qatar UAE Malaysia Japan Korea Others……. Departure date:…….. Duration:…….. Was any family member travelling together? Yes No Monthly income:…….NRs

	Is food and accommodation provided? ☐Yes ☐No ☐Only accommodation Has he/she travelled to any country for work before this migration? ☐ Yes ☐ No If yes, then which country and when?.....	Is food and accommodation provided? ☐Yes ☐No ☐ Only accommodation Has he/she travelled to any country for work before this migration? ☐ Yes ☐ No If yes, then which country and when?.....

4.11 How did you feel and compare your economic condition (in terms of food and living condition) with neighbour before migration? (for non-migrant family present perceived poverty is asked)

☐ Very rich ☐ Rich ☐Medium ☐ Poor ☐ Very Poor

5. Farm machineries

Machineries	Quantity	Price	How did you finance
Plough			
Pump set			
Motor pump			
Sprayer			
Tractor			
Paddy thresher			
Wheat thresher			

* 1=Saving 2= Loan 3= Remittances

6. Livestock

Animals	Quantity	Price	Animals	Quantity	Price
Cow			Oxen		
He-buffalo			She-buffalo		
Calf			Goat		
Pig			Others		

7. Assets or durable goods

Item	Before	After Migration	No	Value when
TV				
Computer				
Camera				
Video camera				
Rice-cooker				
Radio				

DVD player				
Refrigerator				
Micro oven/oven				
Mixer grinder				
Electric iron				
Electric fan				
Electric motor pump				
Land phone				
Mobile phone				
Gas stove				
Sofa set				
Blanket				
Cable/dish TV				
Car				
Motorbike				
Bicycle				
Other				

8. Annual Household Income (agricultural and non-agriculture) of all HH

Income source	Amount (NRs)	%
Agriculture		
Livestock		
House rent		
Wages		
Service		
Business/Trade		
Pension		
Internal remittance		
International remittance		
Other		
Total		

9. Household expenditures

Item	Amount (NRs)	%
Food		
House rent, construction or renovation		
Durable or consumer goods		
Clothing		

Health		
Education		
Transportation		
Pay loan		
Social events (e.g. wedding)		
Festivals (like Dashain and Tihar)		
Savings		
Other		
Total		

10. Migration network and reason to migrate

10.1 Did migrant have relatives/friends in the country of destination during migration?(If not go to question 10.4)

☐ Yes ☐No ☐ Other countries

If yes did the relatives supported in his/her migration?

☐Yes ☐ No

10.2 What was the support? (more than one option)

☐ Moral support ☐ Providing information ☐ Financial support ☐ Accommodation ☐ Arranging job

10.3 Was this support important for choosing the country of destination?

☐ Yes ☐ No

10.4 Did any of your household member/extended family members had been to foreign countries for work? ☐ Yes ☐ No

10.5 Where did you get information on foreign employment? ☐Family ☐ Relatives ☐ Friends ☐ Neighbour ☐ Newspaper/Radio/TV ☐ Agent/ Manpower company

10.6 Cost of migration

How much did you pay for migration including all expense (visa, air ticket and service fee to agency)	……NRs
Where did you manage money for migration?	☐ Loan ☐ Selling land ☐ Mortgaging land ☐Selling gold ☐ Saving
If you tool loan, where did you obtain the loan at what interest rate?	☐ Bank ☐ Relative ☐ Moneylender Interest rate…….

11. Reasons for international migration:

☐ Unemployed ☐ Low income ☐ Accumulate saving/capital
☐ Education of children ☐ To pay loan ☐ Education of self
☐ Others

12. Shocks faced during last year:

☐ Severe illness ☐ Death of family member ☐ Accident ☐ Drought ☐ Flood
☐ Pest infestation

13. Loan

13.1 Have you borrowed money? ☐ Yes ☐ No

13.2 If yes, please specify the source from where have you borrowed?.....

13.3 For what purpose had you taken loan?.....

13.4 Does any member of your family have bank account? ☐ Yes ☐ No

14. Remittances and its Use

14.1. Did you receive remittances in last 12 months from your relatives or friends?

☐ Yes ☐ No

If yes, how much did you receive for last year and in how many times?.....

How often do you receive this money from abroad?

Monthly	Bi-annually	Quarterly	Half yearly	Yearly

14.2 How long have you been receiving money from abroad?

☐ >1 year ☐ 1-2 Years ☐ 2- 3 Years ☐ 3-5 Years ☐ Above 5 years

14.3. How and where do you receive money (during last year)?

Amount	Bank	Money transfer	Migrant self	Hundi	Total
NRs					

14.4 For what purpose did you receive remittances?

☐ Daily consumption ☐ To buy land ☐ Build or renovate house ☐ Pay loan ☐ education of children ☐ Marriage ☐ Buy gold ☐ Migration of other family member ☐ Business ☐ Medical/treatment

14.4. Has the amount of money send/remitted differed during the time of migration:

☐ Same ☐ Increased ☐ Decreased ☐ Never send money

15. Use of remittances and Investment in last five years

15.1 Investment in last five years

In last five years	Source of fund	Where and when?
Did you buy land?	1. Yes with remittances 2. Yes without remittances 3. Both 4. No	
Did you build or renovate house?	1. Yes with remittances 2. Yes without remittances 3. Both 4. No	
Did you buy livestock?	1. Yes with remittances 2. Yes without remittances 3. Both 4. No	
Did you buy farm machineries?	1. Yes with remittances 2. Yes without remittances 3. Both 4. No	
Did you invested in business or commercial activities?	1. Yes with remittances 2. Yes without remittances 3. Both 4. No	
Is the business in profit?	☐ Yes ☐ No	
Did you sell land?	☐ Yes ☐ No	

16. Others

16.1 Do you think migration has improved your socio-economic condition compared to non-migration situation?

☐ Same ☐ Increased ☐ Decreased

16.2 Since when have you started living in this village/municipality? Did your parents or you migrate from any other place? If yes from where and when?.....

16.3. Reasons for internal migration: ☐ Job ☐ Education of children ☐ Better facilities ☐ In search of employment ☐ To start business activities

Thank you for your time and cooperation!!

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The research presented in this book quantitatively analyses the determinants of remittances receipts in Eastern Nepal. Based on the New Economics of Labour Migration (NELM), the study examines the relationship between remittances on the one hand and investments and household expenditure patterns on the other hand. The results show that households with a higher number of males aged 15 to 60 years, those being female-headed, belonging to the Hill Janajati ethnicity, having an extended family and/or owning a house with a semi-permanent structure are more likely to receive remittances. In particular, remittances have significantly positive impacts on food and health expenditures and no effects on educational expenditures. A considerable share of remittances is used by the migrants' households for purchasing land and constructing houses. The results suggest that remittances have no effects on business ownership.

Ranjita Nepal, born in Damak, Nepal in 1978, obtained her MSc in Regional and Rural Development Planning (RRDP) from AIT, Thailand in 2007 and her Bachelor in Urban and Rural Planning from Khulna University, Bangladesh in 2001. Her professional experience started from various international and development organisations such as UNDP and IOM in Nepal. In 2008, she started her PhD studies at the Department of Development Economics, Migration, and Agricultural Policy (DEMAP) at the University of Kassel, Germany with the support of the Germany Academic Exchange Service (DAAD). During her studies she presented her research at several international conferences. She obtained her doctoral degree in 2012. Her research interests include socio-economic aspects of labour migration, remittances and regional development.

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