

Transformations in Kagbeni village

The Influences of Climate Change, Roads & Tourism on the
Adaptive Capacity of villagers in the Nepalese Himalaya



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Photo front-page: Village front of Kagbeni from Kali Gandaki riverbed, Mount Nilgiri (6940 m.) in the backdrop©

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Foreword

It is thanks to many people that this thesis has come into realization and the process of doing the research and finishing the thesis has not been easy. Firstly, I would like to thank Dr. Paul van Lindert, for his support and feedback prior the research, during my stay in Nepal, and after the research during the long process of finishing this thesis. For their support in enabling the research, I would like to thank Mr. Shukla from the Nepal Engineering College (NEC) and Mr. Dixit from the Institute for Social and Environmental Transition – Nepal (ISET-Nepal).

During the research, Mr. Dara Varrgongwa was a great source of support and information. He organised the focus groups, sometimes acted as translator and told many stories and gave much information, he was very hospitable and did his best to give a proper insight in the daily lives of people in the village. Also of great assistance were Mr. Kulendra Ghimire and Mr. Ayo Lampa, who helped with finding people to interview for the questionnaire, and acted as translators. Several teachers at the local school and the local ACAP officers were also of great assistance with providing information about the village and their lives there.

Mostly, I would like to thank Renske Duns, my colleague student and researcher, with whom this research was conducted. She was a great source of mental support in Nepal, and we had a great time together arranging and doing the research. Lastly, I would like to thank my parents for their mental support and their patience for bearing with me on this long process of finishing my thesis and consequently my Masters degree.



Renske Duns and Mr. Dara Varrgongwa, just outside Kagbeni Village©

Executive Summary

Central in this thesis is the little village Kagbeni located in the ecological High Mountain region of Nepal, in the Mustang district. The aim is to uncover the many influences on adaptive capacity in the village with a special attention to Climate Change, Tourism, and a recently constructed Road. These three topics were chosen because they can all have both positive and negative outcomes for the development of a country or region. In addition, these three topics come together in the interesting setting of a small village that until relatively recent had been cut-off of all things associated with western and modern development. Climate change is predicted to be most severe for High Mountain communities; in 2008 the village became connected with the rest of Nepal by a new road, greatly reducing travelling time to the nearest large town; and the village is located on the popular trekking route around the Annapurna Mountain Range.

Therefore, by doing both qualitative and quantitative research, this thesis will try to answer the following main research question: *What are the positive and negative outcomes of Climate Change, Road construction and Tourism; how do these influence the adaptive capacity of- and within the community; and what are the effects of local mechanisms and geographical interactions on this adaptive capacity?*

When asking about perceived climate change, most villagers could not indicate many specific changes over the last few years. Only a majority mentioned precipitation had decreased with the result of less grass growing in pasturelands. Despite not many people pinpointing specific climatic changes, people did indicate that new species of birds and insects arrived in the village recently. Furthermore, apple farming has become a popular and lucrative business, despite apples not being suitable for farming several years ago due to the climate.

The road has had many effects on the village. The most direct effects are travel time and the costs of importing goods. Before, travelling to Pokhara (the nearest large town) would take at least seven days, now it takes one or two days by jeep or bus. The cost of importing goods has decreased from 50 rupees per kilogram to five rupees per kilogram. This has drastically changed eating habits in the village, as the price of rice has vastly decreased. New construction materials now manage to be imported in the village, changing the architectural outlook. Along with new construction materials, a TV, telephone, and Internet connection is installed. The flows of tourists have changed, with more tourists that are domestic and less foreign tourists because the road destroyed large sections of the trekking route.

Tourism has greatly diversified and increased the income of the village; consequently, it also increased competition amongst villagers for a share of that income. Tourism has also altered the culture in the village, especially amongst youngster who try to emulate foreign tourists. There are higher prices for locally produced food due to both the road and tourism, because there is more competition from people able to pay more for products. In addition, both tourism and the road have increased pollution in the village, as many newly imported products are wrapped in plastic, and most of these are destined for tourists.

Drinking water and agricultural water come from different sources. One of the biggest problems faced by the villagers in the depletion of-, and seasonal problems with, the source of drinking water. The depletion is going faster because of the high water consumption of tourists. The seasonal problem constitutes of the source being diluted with melt water at the end of spring, creating muddy water. Another problem in the village are the cold winter months, forcing the majority of the village to reside elsewhere temporarily. When looking at current and future problems, it seems that those with an income

from teaching, being a Lama, or direct income from tourism have the least amount of problems and thus the most secure positions.

There are many signs of modernisation in the village. One example is that people increasingly marry out of own choice, and the bigamist tradition of one woman marrying multiple brothers in a family is slowly disappearing. Increasing prosperity has created more funds for the local Buddhist monastery, which is expanding currently. Parents in the village understand the importance of education nowadays, and nearly every child goes to school despite the parents being poor.

Of all households in the village 83 percent have migrating family members, mostly for work and education purposes, 36 percent of households receive remittances from family members abroad. As such, there are many linkages between the village and the 'outside world', not only through migrants, but also through trade, government funds, and tourism.

The village is divided between original and non-original villagers. Original villagers own land, pay land tax, and attend village meetings. The land tax and village meetings are intended for improvement of the entire village. There are no funds for assisting individual households.

The main conclusion is that all three main topics assist the modernisation of the village, the village is increasingly prosperous but at the price of increased social inequality.

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Introduction

Nepal is one of the poorest countries in the world, on the Human Development Index of 2011, Nepal ranked number 157 of 187 countries. With a population of just over 30 million, and only 19.2 percent of the people living in urban areas it is a very rural country too. The life expectancy is 68.8 years and 78.1 percent of the population lives under the poverty line of 1.25 US Dollar a day (hdrstats.undp.org, 2012). This poor developmental state has much to do with the country's history and its geography. The country has roughly a rectangular shape, being 885 kilometres long and 160 kilometres wide and is located between the Tibetan Plateau of China in the north and the Ganges plain of India in the south. Along its width, the country can be divided in three elevation zones; from a low land Terai, to the Middle Hills and the High Himalayas. The country ascends from a few meters above sea level in the Terai to the highest point on earth; Mount Everest at 8,848 meters, see figure 0.1 (van Dalen 2002; Karan & Ishii 1996).



Figure 0.1: The three zones of Nepal. Source: CBS Nepal

The structure of deep valleys and High Mountain passes have allowed many communities to live in virtual isolation, east-west travels are extremely difficult in most places so most travels and trading took place going north south. This situation of a simultaneous isolation and intercontinental travelling has created a country with many different ethnicities, religions, and, under the influence of Hinduism and Buddhism, many different Castes (van Dalen & de Vries, 2002).

The country itself was created in 1769 by the works of the Ghorka King Prithvi Narayan Shah who unified all the different kingdoms of which contemporary Nepal then existed. This new country was protected from invasion in the north by the High Himalayas, and from the south by the malaria-ridden forests in the Terai. As such, the country was never colonised by a western power, although some concessions and treaties had to be made with the British regime in India. Until 1950, one powerful family

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called Rana led the country. The King and his family served a mere ceremonial purpose. The Rana family prevented any kind of development in the country and whilst leeching-off the population they engulfed themselves in riches. After a revolution in 1950, the King was reinstated with new power. Initially the country became a democracy, but in 1960, the King introduced a new neutral panchayat system, granting the King with absolute power and creating a one-party system. The autocratic panchayat system had run its course by 1990. A King introduced a democratic system and a new constitution after a revolution in the capital; Nepal became a Hindu-Kingdom. Under the new system nepotism, elitism, corruption, an unequal division and discrimination was rife in the country, and a Maoist insurgency began in the impoverished west of Nepal in 1996. Just after the turn of the century this turned into a civil war, which officially ended in 2007 (van Dalen & de Vries 2002; Shrestha 1997; Karan & Ishii, 1996).

The centre point of this thesis is Kagbeni, a small village in the Nepalese Himalaya, not far away from the Chinese Tibetan border. The people in this village are mainly Bhote Tibetans; Buddhist people of Tibetan origin who due to all sorts of historical developments are now part of the Federal Democratic Republic of Nepal. The village is located in the Mustang district of Nepal's Western Development Region. Historically the village was on the route of an important trade of salt coming from Tibet and cloths and other products coming from India. This trade largely ended in 1959 because of the Chinese annexation of Tibet. This trade was vital to the village as local climatic conditions mean that the land can only sustain its population for about eight months in a year. This is due to the rain shadow created by the Annapurna Mountain Range located just south of the village. Combine with a cold High Mountain climate the area surrounding the village is desert like, and only irrigated agriculture can sustain life in the region. Nevertheless, life has always been so tough in the area that several local mechanisms are in place to keep population growth under control and to prevent food shortage. The village has long been an isolated place, allowing it to keep its traditions, but things are changing (ACAP Kagbeni 2011; Stevenson 2002; Schuurbeque Boeye & Marullo 1995).

The reason this village is the centre point of this thesis is the confluence of three topics that all could have both a positive and negative effect on the development of a country. The three topics are climate change, road construction, and tourism. These three come together in the unique setting of ancient Kagbeni village, and this thesis researched their influence on the adaptive capacity of the villagers.

Climate change is a global threat; the warm of the earth is predicted to have many consequences such as a rising sea level, extreme weather generally, extreme high or low temperature, droughts or excessive precipitation, and the melting of perennial snow and glaciers. Furthermore, ecological lines could shift, species could enter new territories previously not suitable for habitation, and diseases could spread over wider geographical areas. High Mountain communities are often seen as vulnerable due to their already harsh living condition, but climate change is predicted to be extra influential in such regions. Global warming positively correlates with warming at high altitudes, meaning that one degree Celsius rise in temperature at sea level will mean a two degrees Celsius rise in temperature in the High Himalayas. In addition, the melting of glaciers could create so-called GLOFs, or Glacial Lake Outburst Flooding (Aase, Chaudhari & Vetaas 2010; Shrestha & Aryal 2010; Manandhar, Schmidt Vogt, Perret & Kazama 2010; ICIMOD 2006). Kagbeni, being a High Mountain village dependent on glacial melt water for irrigation could possibly be facing great future threats on because of climate change.

In 2008, a road was completed connecting the village with a large town in the Middle Hills of Nepal. This road was based on the old salt-trade route, which previously would take at least seven days

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trekking in donkey caravan. The new road had reduced this travelling time to one or two days, depending on type of vehicle. Roads are seen as essential for development; economic indicators such as trade, communication, electricity and health all seem to be positively connected to road infrastructure. Road construction is a public investment often intending to improve agricultural growth and consequently alleviating rural poverty. The main manner in which roads can improve the lives of the rural poor is through increased connectivity and increased market integration. Roads decrease transportation costs and time, allowing agricultural products to travel around a country both cheaper and faster, and make certain technologies suddenly available. However, studies also suggest that roads on their own do not create economic development. The potential for development must already be in an area before a road connects it, otherwise the road will just serve as a means to leave the area (Dillon, Sharma & Zhang 2011; Das Mulmi 2009; Dercon, Gilligan, Hoddinott & Woldehanna 2008; Karan & Ishii, 1996).

Ever since the emergence of global tourism during the sixties of the last century there have been many ideas on the consequences of wealthy western tourists visiting developing countries. Many theories considered a positive trickle-down effect of foreign exchange, technology, the creation of jobs and a modern lifestyle. However, some also saw many negative effects of tourism such as increased dependency of developing countries on the Trans National Corporations of developed countries. Some went even further and believed tourism was a new form of colonialism. These groups opposing the idea that tourism could aid the development of a country claimed that most financial benefits from tourism leaked back to the country of origin of the international tour operators, while employment in the sector was seasonal, low paying, and exploitative. At the turn of the century the so-called pro-poor tourism concept became popular and for the first time used by international development agencies. In this concept, it is believed that tourism can alleviate rural poverty because it is a market that comes to the producers; inter-sectoral linkages can be created locally with agriculture and artisanship; tourism is labour intensive, and thus creates jobs. Furthermore, tourism can take place in poor rural areas because it has low entry barriers when compared to, for example, manufacturing (Hummel & van der Duim 2012; Spencely & Meyer 2012; Mitchell 2012).

There are many tourists' attractions in Nepal, both culturally and environmentally speaking. Being on the crossroads of many ancient cultures there are many religious, architectural, and artistic sights to be seen throughout the country. Furthermore, the ecological and geographical situation allows for many outdoor type holidays, from mountaineering and trekking in the High Himalayas to rafting in the Middle Hills, and visiting wildlife parks in the subtropical Terai. In 1955, a year after the opening of Kathmandu Airport, an international travel agency offered the first organized tour in the country. More than ten years later in 1966, the first mountain trek was organized by an agency, that year saw 12,500 tourists coming to the country. Ten years later, 100,000 tourists came to Nepal, of which ten percent were trekking tourists. In the early nineties, this number rose to about 250,000. At the late nineties, there were almost half a million visitors, however, shortly after the Maoist insurgency came to a height causing the number to drop. After the signing of peace in 2007, tourist numbers rose again. Income from tourism generates around three percent of Nepal's Gross domestic Products and fifteen percent of its foreign currency earnings. The Annapurna trek, on which Kagbeni is located, is one of the most popular tourist destinations. The first tourist lodge in the area was opened 1969, but the numbers of lodges were quickly increasing with 45 lodges in 1980, 203 in 1990, and 497 lodges in 2002. The increasing numbers of lodges is creating new socio-economic relations within the villages along trekking routes (Khek Gee Lim 2007; Nepal 2007; Karan & Ishii 1996; CBS Nepal).

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These three topics come together in Kagbeni village, a village, which until relatively recent was still living in virtually the Middle Ages. The country Nepal has been isolated from the outside world until 1950, for Kagbeni the nearest big town is Pokhara, which has only been booming since tourists arrivals in the 1970s. Until the construction of the road, Pokhara and therefore the rest of the country were at least at seven days walking distance. Thus until the 1970s Kagbeni was still living as they had been doing since ancient times (Karan & Ishii, 1996). Many scientists have written about the vulnerable state of such poor and isolated High Mountain communities. Furthermore, scientific articles all point to potential positive, but also often negative outcomes for development as a result of climate change, road construction and tourism. This thesis aims to research the outcomes of these three topics in the interesting setting of Kagbeni village and find out the influence they have on the adaptive capacity within the village. In addition, the setting of Kagbeni village itself is very likely also providing influences on adaptive capacity, which is leading to the following main research question:

What are the positive and negative outcomes of Climate Change, Road construction and Tourism; how do these influence the adaptive capacity of- and within the community; and what are the effects of local mechanisms and geographical interactions on this adaptive capacity?

To help answering this question, there are the following sub-questions:

- What is the influence of the newly constructed road on Kagbeni, and the village's adaptive capacity?
- What is the influence of tourism on Kagbeni, and the village's adaptive capacity?
- What is the influence of climate change on Kagbeni, and the village's adaptive capacity?
- What are other external sources of influence on the culture and adaptive capacity of villagers in Kagbeni?
- What are local sources of influence on adaptive capacity within the village of Kagbeni?

The first chapter provides a more elaborate background of the geography, history and developmental state of Nepal, and Kagbeni's Mustang district in particular. This chapter is followed by a theoretical chapter on the three main topics in this thesis, namely climate change, road construction and tourism. Chapter three is a methodological chapter, it provides a research goal, conceptual model, operationalisation, an explanation on the methods used during the research, and the limitations of the research. Chapter four is the first chapter processing the research data. This chapter is centred on the latter two sub-questions, and will give an insight in the daily lives of Kagbeni people. The fifth chapter centres around the questions concerning the influence of climate change, road construction, and tourism on the village. The concluding chapter will try to answer the main question, link the result of the research with the theory, and provide discussion point and recommendations.

Chapter I – GEOGRAPHY –

Nepal & Mustang district

This chapter will discuss the geographical context of Nepal and the research area in specific. It will provide an insight in the farmer livelihoods of people in Kagbeni, and its historical and geographic situation.

1.1 Geography of Nepal

Nepal is a country with a vast ecological, geographical, and ethnological diversity. The country is landlocked between the Tibetan Plateau of the People’s Republic of China and the Ganges Plain in north-eastern India (see figure 1.1). Nepal is part of the Himalayan massif, the world’s highest mountain range. Worldwide, of the ten peaks reaching an altitude of more than 8000 meters, eight are located in Nepal, see; table 1.1. The country has a shape comparable to that of a rectangular, with a length of 885 kilometres and a width of 160 kilometres. In total, the size of Nepal is about 147,181 square kilometres, roughly two-and-a-half times larger than The Netherlands. Along the width of the country, the difference in elevation ranges from just a few meters above sea level in the Terai, which is the Nepalese part of the Ganges Plain, to more than 8000 meters in the Himalayas bordering Tibetan China (Insight Guide 2009; Karan & Ishii 1996). Nepal’s location and topography forms a good explanation for its cultural diversity. The rough terrain allows communities to live in virtual isolation, especially in the mountain and hill valleys. In addition, the location between China and India, and being on a crossroad between Central- and Southeast-Asia, creates many different cultural linkages. Combined with a long history, Nepal is nowadays home to 102 identified ethnic groups/castes, 92 languages are recognized though more languages are spoken, and there are eight main religions (van Dalen 2002; CBS Nepal 2009).

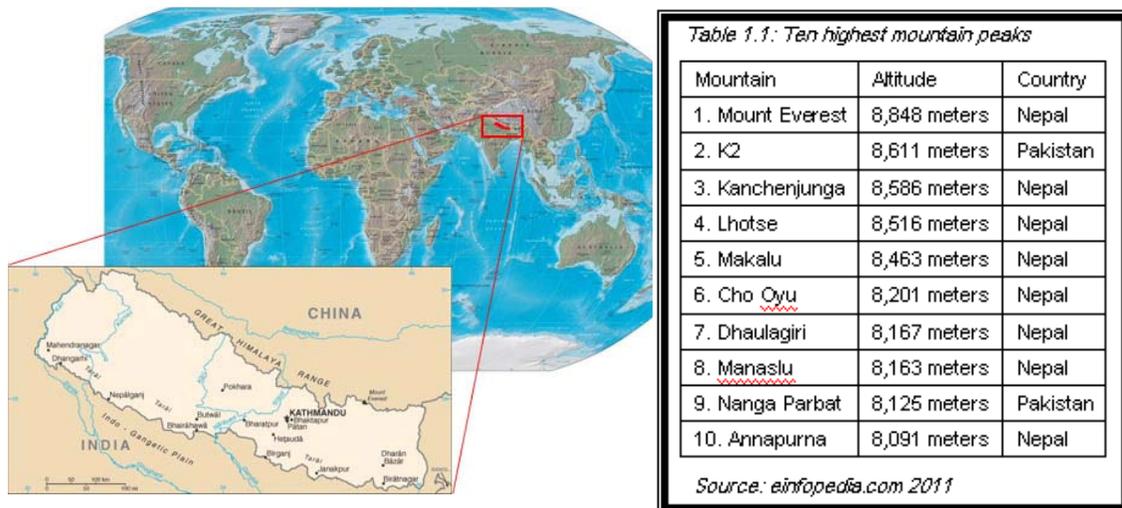


Figure 1.1: Location of Nepal. Source: World Wide Web

1.1.1 Ecological Diversity of Nepal

The most common geographical division of Nepal is based on elevation using three different zones, although some authors use five zones. The three-zone division consists of the Terai with an altitude of between 30 and 1200 meters; the Middle Hill area of Nepal between 1201 and 3000 meters; and the High Mountains from 3001 meters upwards to the highest point on earth. The five-zone division of Nepal consists of the Terai, the Siwaliks, Middle Mountains, High Mountains, and the High Himalaya, see figure 2.1. This section will use the division based on three elevation zones (Karan & Ishii 1996; Shrestha 1997).

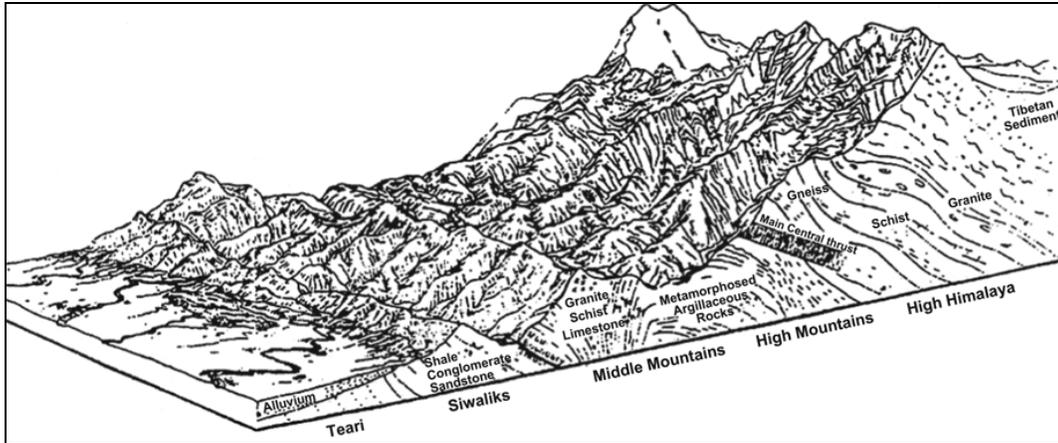


Figure 1.2: The five elevation zones of Nepal. Source: http://www.emeraldinsight.com/content_images/fig/0730180502001.png

The Terai is the lowland and least elevated ecological zone of Nepal. Currently it has the highest population density and is sometimes referred to as the 'rice farm' of Nepal. Its elevation is roughly between 30 and 1200 meters above sea level. About 23 percent of Nepal consists of this lowland. Known for its tropical and sub-tropical climate, the Terai became relatively recent densely populated. During the fifties, the Nepalese government, in cooperation with USAID¹, started a radical malaria eradication program. Before this program, only people who developed a mysterious immunity against malaria could live in this zone. The eradication programme mainly entailed the removal of most of the forests in the area, leaving many fertile arable lands. Under an other program, many people living in the Hill area were moved to the Terai to become farmers. Nowadays only a few forested areas remain in the Terai, they are all located in heavily protected national parks such as Chitwan and Bardia (Manandhar, Schmidt Vogt, Perret & Kazama 2010; Insight Guide 2009; Karan & Ishii 1996; Bhattarai, Conway & Yousef 2009). In terms of both forest and farm lands, the Terai is economically the richest region in Nepal (Shrestha, 1997).

The Middle Hill area of Nepal has an elevation between 1200 and roughly 3000 meters above sea level. The majority of people of Nepal live in this zone, which has a temperate to sub-alpine climate and comprised of 42 percent of Nepal's landmass. The country's two most famous valleys are in this zone: the Kathmandu and Pokhara valley. The Kathmandu valley has been the political, cultural, and economical centre of Nepal for many centuries. The valley consists of the three king cities of Kathmandu, the current capital, Patan (Lalitpur), and Bhaktapur. The people mainly live in valleys where

¹ The U.S. Agency for International Development

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nearly every hill or maintain slope is terraced for agricultural use (Manandhar, Schmidt Vogt, Perret & Kazama 2010; Shrestha 1997, Karan & Ishii 1996; Thapa & Thapa 1969).

The High Mountain area of Nepal, which is the focus of this thesis, ranges from 3000 meters to the highest peak of the world; Mount Everest at 8848 meters above sea level. The Himalayas are important to Nepal in multiple ways. They formed a natural border between Nepal and China and served as a barrier against foreign invasion. Climatically speaking, the Mountains prevent the cold winds of the Tibetan Plateau sweeping the country barren and frozen. The mountains also form a barrier against the rain clouds coming from the south. Without the mountains, there would most likely be no monsoon or rainfall of importance at all in Nepal. The snow-capped mountains are also the origin of most rivers in Nepal. Its difficult climatic and topographic conditions, however, allow for little economic activity and thus little human occupation. Agriculture is only possible in low sheltered valleys close to rivers. Trading and agro-pastoralism are the common economic activity in the region, but these are highly dependent on politics and respectively the climate. The High Mountain region makes up 35 percent of Nepali territory (Manandhar, Schmidt Vogt, Perret & Kazama 2010; Shrestha 1997, Thapa & Thapa 1969).

1.1.2 Historical Overview & Nepal's current Developmental State

The region that is now Nepal became largely Buddhist in the thirteenth century, before then shamanistic and animistic religions were abounded. In the seventeenth century, Hinduism became the main religion (van Dalen & de Vries, 2002).

Nepal, as it is known today, was largely formed in the eighteenth century when Prithvi Narayan Shah unified many different kingdoms, including Mustang (Karan & Ishii 1996). Shah began his campaign to unify Nepal in 1743 when he became King of Gorkha. By 1769, he conquered the three kingdoms in the valley of Kathmandu, and instated his capital in the city of Kathmandu (Shrestha 1997).

Shah's successors did not have the same statecraft and vision and soon lost real power to the powerful Rana family. In 1846, the Rana prime ministers came into full power with a tyrannical regime that lasted until 1951. The Shah Kings did not disappear under the Rana regime but only served a ceremonial purpose without any power. During this time, there was little development in Nepal. Virtually no contact existed with the outside world with the exception of the Gorkha warriors that were incorporated in the British army. The Rana dynasty regarded foreign influence with a great paradox; they would not allow any foreigners or foreign influence in Nepal, but they were privately besotted with foreign objects and inventions. The people of Nepal were leached off any kind of development and welfare, whereas the Rana family collected foreign clothing, other objects, and built large European styled mansions and palaces (van Dalen & de Vries, 2002). In his book about the developmental state of Nepal, Shrestha (1997) believes the legacy of Rana rule is still obstructing development in modern day Nepal. *"Unfortunately, even almost half a century after they were disposed through a relatively popular revolution, the road that the Ranas paved for the emulation of Western ideas and values, for sacrificing national interests and integrity for personal material gains and glamour, and for depending on the West for handouts at the expense of self-reliance and self-sufficiency remains the main road, a road to self destruction"*(Shrestha, 1997, p. 7).

Some of the main developmental problems stem from the lack of data, missing middle class, and virtually non-existent educational level. There was hardly any data available about fundamental issues such as economic and industrial power, arable land and even population data was missing. Combined

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with no middle-class that is independent from the ruling elite and a school system and literacy level that could not quickly lift off economic development, it is not surprising that Nepal was, and still is, among the 'least developed countries' (Karan & Ishii, 1996). After 1951, a coalition government was called into existence and six years later Nepal saw its first democratic elections. Democracy did not work well with King Mahendra, who was reinstated with new power after the fall of the Ranas, appointing a new prime minister every few months (Shrestha, 1997).

In 1960, the King introduced a new neutral panchayat system, which allowed for only one party, this granted the King with absolute power (van Dalen & de Vries 2002; Shrestha 1997). Under the panchayat system, people could choose local representatives, who on their term could choose a district representative. The National Gathering consisted of these district representatives, the cabinet was appointed directly by the King. Under this system, Nepal began to realize its strategic position between India and China; in addition, foreign aid was no longer shunned, but seen as the solution for many of the problems existing in the country (van Dalen & de Vries, 2002). Many surveys were done to get a better grip on the country, and different development plans were implemented. However, the lives of many people remained unchanged and some were even worse off than before. Nevertheless, there were some significant improvement in the field of education, infrastructure, and health services, but these developments mainly took place in cities not rural areas (Karan & Ishii, 1996).

The autocratic panchayat system had run its course by 1990. The new King Birendra introduced a democratic system and a new constitution after a revolution in the capital (Shrestha, 1997). Under this constitution, Nepal became a Hindu-Kingdom, with the King being unassailable, and with limited religious freedom. On the upper hand, Nepal gained a constitutional monarchy, a multi-party system, and power to and respect for the people. However, due to nepotism, elitism, and corruption many people longed a return of the panchayat system, soon after the introduction of this democracy. During these years, the Maoists started their insurgency in the impoverished west of Nepal in 1996, which soon spread out to the whole of Nepal. Some of the main reasons for the increased support for the Maoists were the unequal division and discrimination in the country. Ethnic minorities, low castes, and other religions had hardly any say in the government. For example, during this time 98 percent of all government positions were given to a caste that only made up fifteen percent of the entire population (van Dalen & de Vries, 2002). In 2007, the civil war ended and a year later, the Maoists became part of the government and mainstream Nepali politics.

On the Human Development Index of 2011, Nepal ranked 157 of 187 countries, placing it between the Low Human Development countries between Nigeria and Haiti. In that year, Nepal had a population of just over 30 million, of which 19.2 percent lived in urban areas. With an expenditure of two percent GDP on public healthcare, Nepal's life expectancy was 68.8 years, and the under five years old mortality rate was 48 on 1,000 children in 2011. More money was spent on education, namely 4.8 percent of GDP. Much has improved in this instance, people who are older than 25 years have received on average 3.2 years of education, and the literacy rate of people in Nepal aged 15 years and older is 59.1 percent. Children who are nowadays younger than seven years can be expected to be enrolled in education for 8.8 years. The Gross National Income per capita in Purchasing Power Parity in 2011 was 1,160 US Dollars; the average of Low Human Development countries was 1,585 US dollars. 78.1 Percent of the population live under the poverty line of 1.25 US Dollar a day (hdrstats.undp.org, 2012).

1.1.2.1 Administrative Structure

Nepal is divided into many different structures. The country is first divided into five development zones, namely Far-Western, Mid-Western, Western, Central, and Eastern. The second layer are the administrative zones, there are fourteen of these: Bagmati, Bheri, Dhawalagiri, Gandaki, Janakpur, Karnali, Kosi, Lumbini, Mahakali, Mechi, Narayani, Rapti, Sagarmatha, and Seti. The third layer is the districts, there are 75 of them, and each is made up of Ilakas. There are 927 Ilakas, and they are made up of four to five VDC (Village Development Committees). VDCs on their term constitute at least nine wards, which are the lowest administrative structures in Nepal. A ward is made up of settlements or clusters of houses. In addition to VDCs there are also 58 municipalities, which are clusters of nine to 35 wards (CIA Worldfactbook 2012; CBS Nepal).

For parliamentary elections, there are also 205 constituencies. Nepal has a unicameral Constituent Assembly, which consists of 601 seats; 240 members are elected by direct popular vote, 335 by proportional representation, and 26 appointed by the Council of Ministers (CIA Worldfactbook 2012; Adhikari 2011; CBS Nepal).

1.1.3 Cultural Diversity of Nepal

With its location in the middle of the Hindu Kush-Himalaya mountain ranges Nepal has long been an isolated country. 8000 meters high mountains in the north and an almost impenetrable malaria-ridden tropical forest in the south has allowed for little outside contact. The valleys, historically, also allowed for little contact between groups that live in nowadays Nepal (Karan & Ishii, 1996). As aforementioned, there are many different ethnic and linguistic groups in the country, to add to the mix are the many different Castes within the Hindu and Buddhist culture. Therefore is it virtually impossible give a proper account of the cultural diversity in the country, it would be too complicated. Table 1.2 shows the top ten of ethnic groups and spoken languages, and figure 1.3 shows a map of the whereabouts of different groups.

The map and table both show the complicated ethnic situation. In addition, from both the done research and from literary sources, it seems that many groups have also been giving the wrong ethnic identity by government officials. Many people in the research area were given the identity of Gurung, but claimed to be Bhote Tibetans. In one of the articles, Tibetan Sherpa's were categorised as Tamang people due to miss-communication between translators and a government official (Khek Gee Lim, 2007).

Caste/Ethnic Group	Percent	Mother-Tongue	Percent
Chetri	15.8	Nepali	48.6
Brahman-Hill	12.7	Maithili	12.3
Magar	7.1	Bhojpuri	7.5
Tharu	6.8	Tharu	5.9
Tamang	5.6	Tamang	5.2
Newar	5.5	Newar	3.6
Muslim	4.3	Magar	3.4
Kami	3.9	Awadhi	2.5
Yadav	3.9	Bantawa	1.6
Rai	2.8	Gurung	1.5

Table 1.2: Top ten ethnicities and languages. Source: CBS Nepal.

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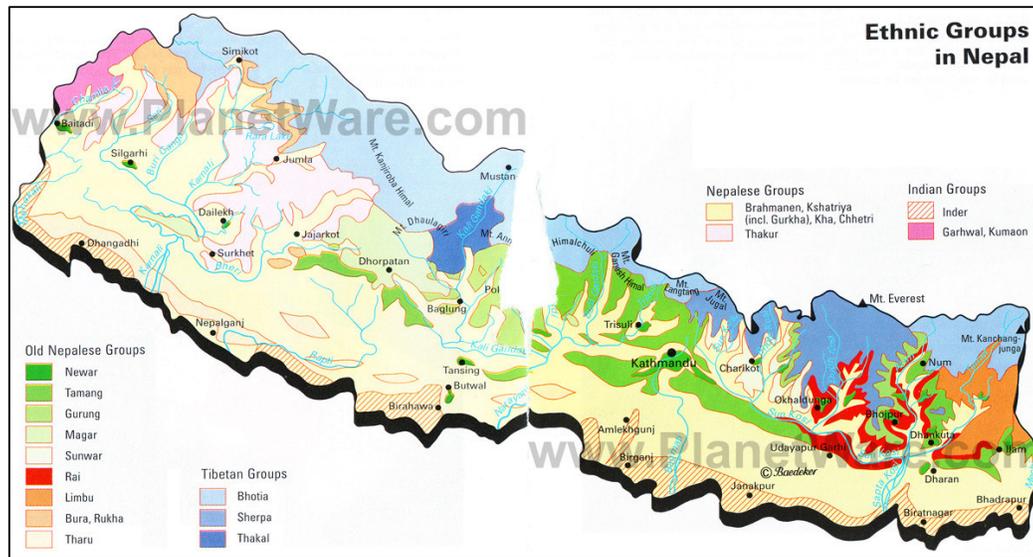


Figure 1.3: Distribution of ethnic groups. Source: <http://www.planetware.com/map/nepal-nepal-ethnic-groups-map-nep-nep032.htm>

1.2 Life in the Nepalese Himalaya

This section will first shortly introduce livelihood strategies in High Mountain areas in Nepal. After that, there will be a more in-depth look at the historical and geographic situation of the research area of this thesis: Kagbeni village.

1.2.1 Livelihood Strategies in Nepal's Mountains

Many of the communities in Nepal's High Mountain region are agro-pastoralists who confess to the Buddhist faith. Being agro-pastoralist means they both live off agriculture and livestock herding, and that the two need each other to exist. These mountain villages often consist of summer pastures, winter pastures, some kind of forest, and irrigated agricultural land close to the village. All components need each other. The forest is used for construction wood, fuel wood and for animal fodder and bedding in winter. The animals are used for foods, clothing, labour, and their manure is very important to keep the land fertile. The animals stay in the stable for two months during wintertime when it is too cold to venture out, the piled up bedding can be used as extra fertiliser later on. Outside these two months, the animals are kept in pastureland close to the village. During the summer months, some herders are sent away with the large herds to pastures far away so the grass close to the village can grow and be harvested. The agricultural land often needs irrigation, as these High Mountain communities do not experience frequent rainfall for their crops to grow. The residue of plants left after harvesting is also used as food for the animals during wintertime. Life is very harsh in this region of Nepal, and in most areas, the land can only provide the community with enough food for eight months a year. If possible the lack of food is resolved by trading or by a large section of the community moving south during the months of food shortage to find work and food elsewhere. Furthermore, because of the precarious situation, there are many local mechanisms to prevent large-scale food shortage. One such mechanism is bigamy, where

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one woman has two or more husbands, to prevent population growth and the dividing of inherited agricultural land between brothers (Aase, Chaudhary & Vetaas 2010; Stevens 1993).

1.2.2 Kagbeni Village

The village of Kagbeni has been from ancient time a border town. During the middle ages, it was the southernmost boundary of the Tibetan Kingdom of Lo. In modern time, it is the checkpoint for entering the restricted area of Upper Mustang. Coming from the south, it is the first village with a Tibetan Buddhist culture and people. This is in contrast to the Thakoli people from Jomsom just three hours walking to the south, and the large remainder of Hindu Nepal (Schuurbeque Boeye & Marullo, 1995). Figure 1.4 shows some signs of this Tibetan culture, and figure 1.5 shows Kagbeni's location within Mustang district.



Figure 1.4: Tibetan prayer flags of the flat mud roofs in Kagbeni©

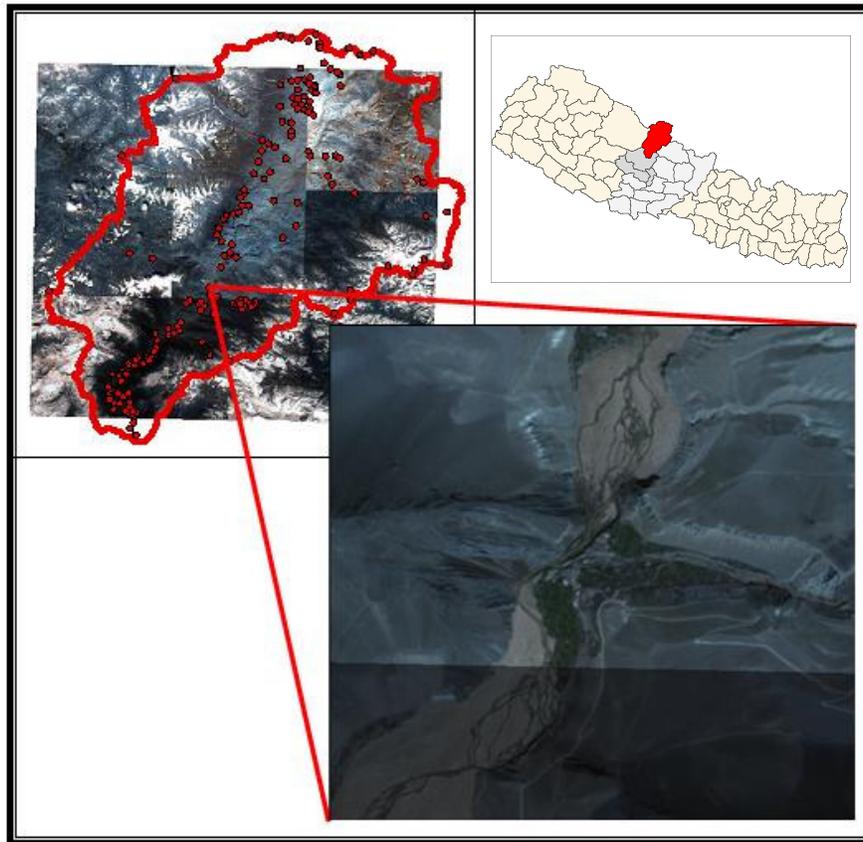


Figure 1.5: Mustang location within Nepal, Kagbeni's location within Mustang. Source: Word Wide Web & Department of Forestry, Kathmandu

1.2.2.1 Geography & Geology

In the area surrounding Kagbeni, many fossils of pre-historic marine animals can be found. For Hindus these fossils, or ammonites as they call them, are charms against the wrath of the Kali the Black, who is the goddess of death and destruction. Buddhists, however, believe the great mountains were once an ocean, for them the fossils are a symbol for an ever-changing world (Schuurbeque Boeye & Marullo, 1995). Scientists have discovered that the Buddhists got it quite right. The region is the ancient Thetys Sea, which existed before the Indian sub-continent collided with the Eurasian continent. This collision created the Himalayas (Schuurbeque Boeye & Marullo 1995, van Dalen & de Vries 2002). At first, the Tibetan plateau was higher than the growing Himalayas. The rivers, the Kali Gandaki being one of them, were descending to the south, eroding large river valleys in the soft sandstone that was once the bottom of the sea. As the Himalayas became higher than the Tibetan plateau, they created a rain shadow. As the rain-clouds collide with the southern mountain walls, the Tibetan plateau and most of Mustang district has become a desert. Therefore, the origin of the Kali Gandaki River does not receive nearly as much water as it once did. This is made evident in the wide gorge in comparison to river size, as can be seen at Kagbeni and other villages in the area (Schuurbeque Boeye & Marullo 1995, ACAP Kagbeni 2011).



Figure 1.6: The small river in comparison with the large gravel plain of the river gorge, at Kagbeni©

1.2.2.2 History & Culture

In the 1300s, a warrior united the different warlords in the Land of Lo and built a capital called Lo Manthang. The Land of Lo is mentioned in Buddhist scripts from the seventh century, which is around the time that the indigenous animistic Bon religion was assimilated into Tibetan Buddhism. By this time Lhasa also began to emerge as the centre of Tibetan Buddhism, the Land of Lo was second to Lhasa in importance for the new religion. Due to a cartographer's mistake, Manthang was written as Mustang,

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which became the name of the entire region and current district. Kagbeni village used to be the southernmost boundary of the Kingdom of Lo (Schuurbeque Boeye & Marullo, 1995).

The assimilation of Buddhism with the Bon religion is still reflected in male and female mud figures that are the guardians of the village in the old part of the city. In addition, animist traditions are also evident in the animal heads above some doorposts (Stevenson 2002).



Figure 1.7: Animistic remnants in Kagbeni©

Together with Dolpo, Mustang was an outlying province of Tibet, competition and war was abounding between the two regions. The significance of the Mustang region came from important Lamas visiting in the fifteenth century, in time making Lo Manthang also a pilgrimage place. In addition, major economic significance stems from its favourable geography. The mountain passes to and from Tibet are easy to access, and the Kali Gandaki river valley allows an easy trading route down south to India (Schuurbeque Boeye & Marullo, 1995).

Kagbeni was one of the important trading hubs on this route, which saw Tibetan salt coming from northern lakes traded for food to increase local food security. Salt was the main commodity on this trading route, but livestock and other food products were also traded (Schuurbeyeq Bouye & Marullo 1995, Stevenson 2002).

During the unification of Nepal in 1802, the Mustang region was left largely autonomous in exchange for an annual contribution for protection. This autonomy was stripped during the partial democratization of Nepal in 1950. This was followed almost immediately by China's annexation of the Tibetan Motherland, which made Mustang a region of resistance. More than six thousand exiled warriors lived in the region where they got secret support and training from the CIA, the US secret service (Schuurbeque Boeye & Marullo 1995, Stevenson 2002, van Dalen & de Vries 2002). The local support for the resistance against the Chinese in Tibet could not be sustained, however, the fighters turned out to be too great a strain on local resources. In addition, the local support did not improve ties with Kathmandu, which sought to improve bonds with China. The Nepali government put the entire region of Mustang in isolation. Furthermore, the US government under President Nixon, made amends to the Chinese government and stopped their support for Tibetan fighters (Schuurbeque Boeye & Marullo 1995; Nepal 2007).

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During the mid-seventies, the Nepali government opened a part of Mustang for tourism, namely up until Kagbeni village. This created a lower and upper Mustang, with Upper Mustang remaining a restricted area. The government further built some elementary schools, water pipelines, and health posts in Lower Mustang. However, these investments were not enough counteract the economic decline instigated by the previous isolation. If anything, these investments formed a threat to the local culture.

The people arriving along these investments were teachers, police officers, and other people from the

Hindu south of Nepal. This move was, and still is, by some regarded as an attempt to have the Tibetan Buddhists people of Mustang assimilated into the mainstream Hindu Nepali culture (Schuurbeque Boeye & Marullo, 1995).

Currently Kagbeni is the chief town of Kagbeni VDC, and its wealthiest village. The VDC is made up of seven villages in total, as figure 1.8 shows.

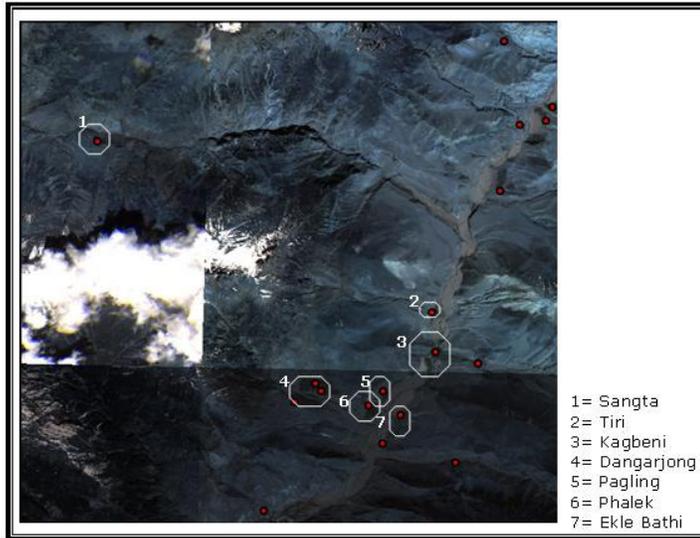


Figure 1.8: Kagbeni VDC. Source: Department of Forestry, Kathmandu

Chapter II – THEORY –

The influences of Climate Change, Roads & Tourism on a developing country

This chapter is going to provide some theories about climate change, road construction and tourism, and their influence on Nepal. Divided in three sections, this chapter will begin with providing an overview of thinking about climate change, and theories on adaptation to climate change. This is followed by an insight on the expected influence of climate change on Nepal's High Mountain communities. The other two sections will have a similar build-up of first an overview followed by specifications for Nepal.

2.1 Climate Change

Much is written about adaptation to climate change, as illustrated by the next quote: *"Adaptation at the community level means being able to maintain (and preferably improve) the current living standards in the face of expected changes in climate trends and the intensity and frequency of severe events that may affect people's livelihoods"* (van Aalst, Cannon & Burton, 2008, p. 170). However, this quote by Smith, Burton, Klein & Wandel (2000, p. 225) makes clear that the word adaptation can also be used under different circumstances: *"Adaptation' is also sometimes used, to refer to adjustments, particularly by businesses, to changes in the political-economic environment..."*. Coping with global climate change can be done using both forms of adaptations, namely by adapting directly to the consequences of climate change, or by improving the overall situation of a community by adapting for a more general purpose. This section will now first give an overview of climate change and adaptation theories, followed by some local examples of how general adaptation can also help communities deal with the consequences of climate change.

2.1.1 Climate Change Thinking and Predictions

After the signing of the Kyoto protocol it became evident that tackling the cause of global climate change, the emission of greenhouse gasses, was too challenging. Therefore, instead of making proper agreements on reducing the emission of greenhouse gasses, there came more focus on coping with and adapting to climate change (van Aalst, Cannon & Burton 2008; Smith, Burton, Klein & Wandel 2000).

The more classical adaptation to climate change models are top-down approaches, these begin with a global climate change model, which is then scaled down to regional scenarios. These scenarios are simplified versions of the local climate and are 'applied' to expose the impact of climate change on certain targets. For example, these models can project the impacts of climate change on the yield of a certain crop in a certain region or locality. A criticism on this approach is that crop yield is dependent on too many things to be properly projected by a simplified model. The classical approach assumes that adapting is dependent on available knowledge and technology concerning adaptation. Consequently, communities must adapt either partially or entirely, depending on the projected climate change model.

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Again, the main critique here is that this is an oversimplification of reality. This approach does not consider the actual local situation. It does not know how much and what kind of knowledge and technology is available, nor does it consider local socio-economic structures (van Aalst, Cannon & Burton, 2008). In addition, the gravity of the effects of climate change also depends on the local ability to adapt, and people have already adapted their lives to suit the local conditions (Smith, Burton, Klein & Wandel 2000). Furthermore, aside the lack of acknowledgement for diverse local adapting capacity, regional models also cover-up vast climatic variations whereas reliable models for local scales still have not yet been developed properly (Aase, Chaudhari & Vetaas, 2010).

More recently, studies in adaptation to climate change take a much more bottom-up approach. This bottom-up approach does not only seek to involve local stakeholders, but also focus more on current climate events rather than large future climate models. However, this approach could also form a problem. People in developing countries are more likely to consider every day threats to their livelihoods, rather than global climate change. This makes doing bottom-up participatory research on how people adapt to climate change difficult. Often on community level, there are coping measurements than enable people to adapt to these every day threats. However, the same cannot be said for future climate change. The combination of people not being aware of these threats, nor knowing how to adapt to them is one of the greater vulnerabilities for these communities. Especially as awareness for these future climate threats is generated through a top-down manner, which often does not involve the specifics for a local community (van Aalst, Cannon & Burton, 2008).

Globally speaking it is predicted that temperatures will rise between 1.4 degrees Celsius and 5.8 degrees Celsius by the year 2100 (Manandhar, Schmidt Vogt, Perret & Kazama, 2010). For South Asia, the predictions are between 3.5 and 5.5 degrees Celsius (ICIMOD, 2006). Global warming is positively correlated with warming at high altitudes, meaning that one degree Celsius rise in temperature at sea level will cause a two degrees Celsius rise in temperature in High Mountain regions (Aase, Chaudhari & Vetaas 2010; Shrestha & Aryal 2010). Furthermore, predictions indicate a decrease in both winter and summer precipitation (ICIMOD, 2006). The consequences of these climatic changes will generally include more extreme weather, extreme high or low temperature, droughts or excessive precipitation, and the melting of perennial snow and glaciers. The melting of glaciers could create Glacial Lake Outburst Flooding (GLOFs) which are characterised by a sudden release of lake water combined with mountain debris flooding and destroying everything in its path in lower lying areas. Furthermore, ecological lines could shift, species could enter new territories previously not suitable for habitation, and diseases could spread over wider geographical areas (Aase, Chaudhari & Vetaas 2010; Shrestha & Aryal 2010; Manandhar, Schmidt Vogt, Perret & Kazama 2010; ICIMOD 2006).

However, as mentioned before, there are great local variations in climate change and their influence on communities. Some studies show that in the near future some High Mountain communities may even benefit from climate change. Furthermore, in their article, Aase, Chaudhari & Vetaas (2010), claim that local differences are so large that it makes more sense to assess the flexibility of local High Mountain communities, rather than to stress how vulnerable these communities are. They argue that instead of looking at mountain communities as fragile and at the brink of a crisis due to climate change, they should be looked at as dynamic and flexible with many options to change local habits to whatever change is coming their way (Aase, Chaudhari & Vetaas, 2010). This is in line with the comment in the introduction of this section that also adaptations not aimed at coping with climate change specifically could improve the positions of people in the face of these prospected changes.

2.1.1 Climate Change in Nepal

Whilst Nepal is not significantly contributing to climate change, the country will suffer the consequences of it. Due to Nepal's heavy reliance on tourism and agriculture, the economy is very sensitive to climate change. Especially considering the low developmental state of the country there is presumably a weak coping system to deal with these changes (Shrestha & Aryal 2010; Manandhar, Schmidt Vogt, Perret & Kazama 2010). However, in their study about farmer flexibility in Mustangs' neighbouring district Manang, Aase, Chaudhary & Vetaas (2010) have highlighted many points of adaptation that could also suffice for Mustang district. In the near future, it seems that High Mountain communities might even benefit from climate change, as there is more water run-off from the mountains, which is directly beneficial as most of these communities are reliant on irrigation instead of rainwater. Furthermore, warmer temperature could mean different crop species and longer growing seasons. Lastly, despite the fact that Nepal often has food shortage, there are large quantities of previously cultivated land left unused currently. This is due to rules in many High Mountain communities that land can only be sold on to a local person, but many local people left the area several years ago to find their fortune elsewhere. Because of national land legislation that allow renters of land to buy half the land they cultivate after a number of years, many land owners to not rent-out their land anymore out of fear of loosing it. Furthermore, the article on farming flexibility suggests that some resources are currently used inefficiently because they are considered status symbols. As example, some households leave a large pile of manure outside house, to indicate that the household is wealthy; in dire times, those piles could be used on the land rather than as a status symbol (Aase, Chaudhari & Vetaas 2010; Shrestha & Aryal 2010; Manandhar, Schmidt Vogt, Perret & Kazama 2010). GLOFs, however, are a great threat to all mountain communities due to their unexpected nature and capacity to cause great destruction. An ICIMOD report takes notice of two GLOFs in Mustang district, however, year and number of casualties are not mentioned (ICIMOD 2011).

2.2 Road Construction

This section will start with the theory concerning road construction and its influence on the development of a country. The second part of this section provides an overview of road construction in Nepal.

2.2.1 The 'Road' to Development

In the industrial world, a road network has been one of the prime indicators of development (Campbell 2010). In addition, other economic indicators such as trade, communication, electricity and health all seem to be positively connected to road infrastructure (Das Mulmi, 2009). However, studies also suggest that roads on their own do not create economic development. The potential for development must

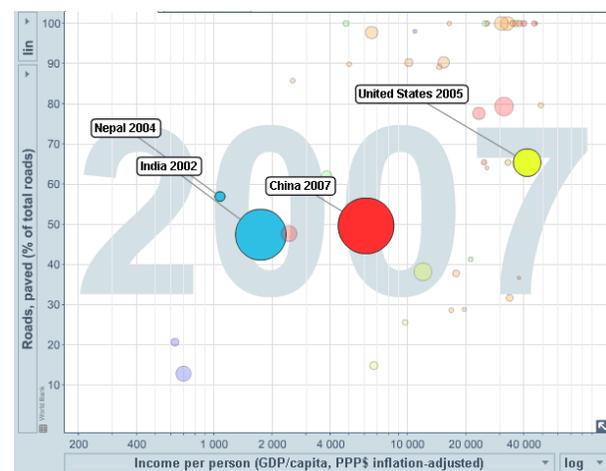


Figure 2.1: Connection between paved roads and income per person. Source: gapminder.org

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already be in an area before it is connected by a road, otherwise the road will just serve as a means to leave the area (Karan & Ishii, 1996) Looking at figure 2.1 there does appear to be a linear connection between the percentage of paved roads and GDP per capita. However, when comparing Nepal to its neighbouring India and China, and number one economy the United States, it can be argued that road construction is no guarantee for a high income.

Most people in rural areas are dependent on agriculture for their daily survival. Road construction is a public investment often intending to improve agricultural growth and consequently alleviating rural poverty (Dercon, Gilligan, Hoddinott & Woldehanna, 2008). The main manner in which roads can improve the lives of the rural poor is through increased connectivity. Roads decrease transportation costs and time, allowing agricultural products to travel around a country both cheaper and faster. The same goes for agricultural inputs such as improved seeds and fertilizers, which would increase agricultural output. This agricultural output could be sold at a better price due to increased market integration. The latter means that by connecting isolated areas to economic centres within a country, farmers could find a great difference in food prices and get more money for their crops by selling on a different market. Furthermore, increased connectivity also allows for productivity raising technologies finding their way to previously isolated places, and the same goes for government facilities that could help with coping with shocks such as flooding and landslides. (Dillon, Sharma & Zhang 2011; Dercon, Gilligan, Hoddinott & Woldehanna 2008; Jacoby 1998). Lastly, roads could create the opportunity for rural people to diversify their income with non-agricultural means of living, and gain access to better schools, health facilities and a greater variety of consumer products (Dercon, Gilligan, Hoddinott & Woldehanna 2008; Jacoby 1998).

In his 1998 research, Jacoby concluded that road construction, and especially the increased access to markets, would be on average beneficial to remote areas. He also concludes that some of the benefits would go to the rural poor. However, he warns for increased income inequality in the remote areas unless measures are taken to prevent this (Jacoby, 1998). In addition, the increased connectivity and market integration also works the other way around; not only have remote areas easier access to economic centres, economic centres also have easier access to remote areas. A result of this could be that renewed economic development in these newly connected areas do not stem from, or benefit, the local people but rather outside investors looking for new business opportunities (Dillon, Sharma & Zhang 2011; Jacoby 1998).

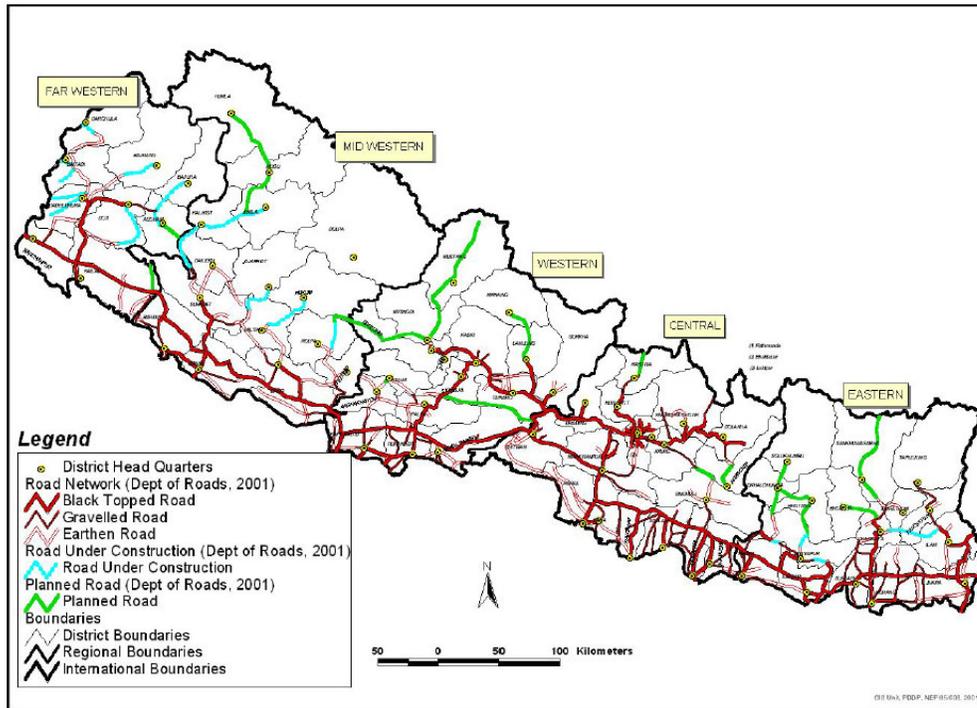
Das Mulmi (2009) makes a strong suggestion for sustainable road development, which should also include Local Level Capacity Building before completing a road. Campbell (2010) agrees with Karan & Ishii (1996) in his study about a (then) prospected road in Rasuwa district, which is also a High Mountain district in Nepal. People in this study feared that not being directly connected to the road would decrease their already low income even more; furthermore, they feared many people would leave the area to find better income prospects abroad (Campbell, 2010).

2.2.2 Road Development in Nepal

As mentioned in the previous chapter, Nepal was up until the fifties a virtually isolated country with hardly any development, and virtually no roads. Beginning in 1953 and onwards, roads began to be constructed in areas outside the Kathmandu valley. Most new roads were built in the Terai, either being connected to India or the Kathmandu valley (Karan & Ishii, 1996). In the 1960s, the Arniko highway was

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built connecting Kathmandu to the Chinese border. For a very long time this was the only international road in Nepal not being connected to India. Combined with almost 80 percent of all Nepalese trade taking place across the Indian border, there is a certain dependency issue between the two countries. India at times has taken advantage of this dependency, for example by sometimes closing the border or increasing costs for using an Indian port (Campbell 2010; Karan & Ishii 1996). Figure 2.2 is a map of Nepal's road network in 2001, the different red lines are existing roads (at that time), and the green roads are prospected road. The road that is part of this thesis, the Kali Gandaki road, is visible in green. Figure 2.3 shows the increase of kilometres of roads in Nepal over the years 1995-2007.

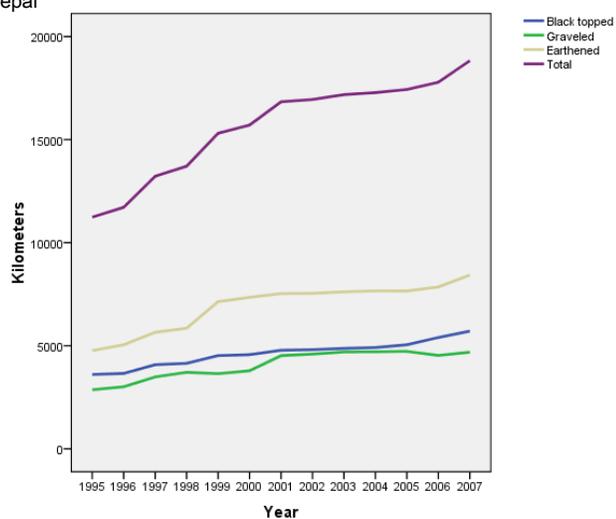


Top; Figure 2.2: Road Network in 2001. Source: CBS Nepal

Right; Figure 2.3: Kilometres of Road. Source: CBS Nepal

In 2004, the Asian Development Bank proposed a so-called 'connectivity' project to alleviate poverty in Nepal's remote and isolated areas, this was during the Maoist insurgency. Part of the reason behind these projects was to increase connections between Nepal and China, taking away some of the dependency on India, as many road projects were meant to be installed in isolated northern districts (Campbell 2010). Investing in roads in rural areas of a country like Nepal could have multiple benefits for the rural households, as explained in the

previous paragraph. In their research about rural investments in Nepal, Dillon, Sharma and Zhang, discovered that a ten percent decrease in travel time, created by the installation of a road, would increase the value of a plot of land with 2.6 percent. The same decrease in travel time would also



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increase the chance of escaping poverty by 0.5 percent. These figures stem from a time that the Maoist insurgency was still at a high, these researchers suggest that roads could have even higher success rates now the civil war is over. Increased connectivity and increased integration of markets for agricultural products are the main reason for the higher land prices (Dillon, Sharma & Zhang 2011). However, an increased land price does not immediately mean more income for rural households, and those without land do not benefit at all (Jacoby 1998). This seems to be reflected in the small increase of likelihood to escape poverty (Dillon, Sharma & Zhang 2011).

Because there are so many developmental and economically sound reasons to construct roads, the Nepali government has not always considered environmental circumstances properly before building. In many instances, this has resulted in roads that create landslides, loss of land, siltation, erosion, and loss of biodiversity (Das Mulmi, 2009).

2.3 Tourism

This section will firstly give an overview of changing paradigms about the influence of tourism on developing countries. This will be followed by an overview of tourism in Nepal generally and in the Annapurna region specifically.

2.3.1 Tourism in Developing Countries

During the 1950 and 1960s, tourism was seen as a potential modernisation strategy for 'third world' countries, which could help them earn foreign exchange. Tourism could help to transfer technology, increase employment, increase GDP, attract foreign investments, and create a modern lifestyle. The latter was synonymous with a western lifestyle (Hummel & van der Duim, 2012). Tourism's contribution to development was based on an assumed 'trickle-down' effect of both money and lifestyle (Spencely & Meyer, 2012).

During the 1970s, 1980s and 1990s, several different theories were circulated. On the one hand, there were calls for reform of the tourism sector to make it more suitable to increasing development. Some countries and international organisations promoted tourism as an export product. At the same time, neo-liberalist thinking wanted an increased role for the private sector and a decreased role for governments. Neo-liberalists envisioned tourism as a way for a country to trade itself out of poverty. In the meantime, others raised the dependency debate, saying tourism increased the dependency of developing countries on developed countries. Furthermore, some saw tourism as a new form of colonialism and as an industry that is dominated by western Trans National Corporations (Hummel & van der Duim 2012; Spencely & Meyer 2012). During the remainder of the nineties, new ideas arose about so-called sustainable tourism that embraced concepts like grass-root development, local participation, empowerment, and equity. New forms of tourism came into being, such as community-based tourism, alternative tourism, and eco tourism (Hummel & van der Duim, 2012). Calls were made not only investments in 'hard-infrastructure', such as facilities, utilities, and transportation networks, but also in 'soft-infrastructure', such as human resources and capacity building (Thapa, 2012).

At the turn of the century there were 'tourism-pessimists', and people who were 'tourism-euphoric'. The pessimists claimed that most financial benefits from tourism leaked back to the country of origin of the international tour operators, while employment in the sector was seasonal, low paying, and

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exploitative. In addition, they claimed that poor people were often made even more vulnerable because they lose access to, or face depletion of, natural resources due to tourism. People, who were more euphoric about tourism, point to the jobs and economic activity that would not have been created without tourism (Mitchell, 2012).

The UK DFID² made an overview study and concluded that initiatives like community-based tourism were not sufficiently addressing poverty reduction. A new concept was created called pro-poor tourism; this concept was further endorsed by many other NGOs and international organisations such as the World Bank and Dutch SNV (Hummel & van der Duim 2012; Spencely & Meyer 2012). Pro-poor tourism has the potential for development for different reasons, as given by Spencely & Meyer (2012):

- *“the market comes to the producers, thus providing additional sales opportunities in the destination;*
- *inter-sectoral linkages can be created, especially with agriculture, artisan production and additional services, which are essential for livelihood diversification;*
- *tourism is generally labour intensive (although often less so than agriculture);*
- *tourism takes place in marginal areas, areas where the majority of the poor live;*
- *tourism generally employs a high level of females, young people and unskilled or less-skilled individuals; a high percentage of the poorest in society fall into these categories;*
- *tourism has rather limited barriers to entry when compared with manufacturing or other export activities; and*
- *the tourism sector is already growing at a very high rate in many LEDCs” (Spencely & Meyer 2012, p. 302).*

Mitchell (2012) sees some difficulty with bringing the theory for pro-poor tourism into practice beginning with what the concept poverty entails. He is theorising about poverty being more than a daily income, as it also includes inequality and access to resources. Then, he goes on about what pro-poor tourism really is, if it is something that has to benefit the poor more than others do, or if tourism should just attempt to benefit the poor. As far as different forms of tourism goes, he concludes that: *“There is as little empirical basis for suggesting mainstream tourism is inherently bad for development as for the view that community-based/ecotourism/cultural tourism is ubiquitously good for development”* (Mitchell 2012, p. 473).

2.3.2 Tourism in Nepal

Before the revolution in 1950, only few foreigners ever entered Nepal, an exception was made for Hindu and Buddhist pilgrims who wanted to visit holy sites such as Kathmandu, Lumbini and Muktinath. After the revolution, Nepal expanded its diplomatic ties with the rest of the world and opened its borders; western mountaineers soon arrived (Karan & Ishii, 1996). In 1955, a year after the opening of Kathmandu Airport, an international travel agency offered the first organized tour in the country (Khek Gee Lim, 2007). Due to the lack of roads and system of ‘short take-off and landing’ airstrips, tourism was mainly confined to Kathmandu valley and some areas in the Terai. In 1966, a travel agency organized the first mountain trek, that year saw 12,500 tourists coming to the country. Ten years later,

² United Kingdom Department for International Development

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100,000 tourists came to Nepal, of which ten percent were trekking tourists. In the early nineties, this number rose to about 250,000 (Karan & Ishii, 1996). In the late nineties, there were almost half a million visitors, however, shortly after the Maoist insurgency came to a height causing the number to drop. After

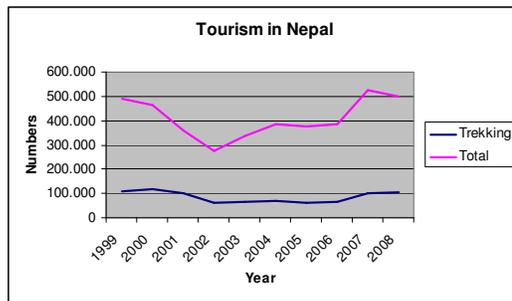


Figure 2.4: Tourist numbers in Nepal 1999-2008

the signing of peace in 2007, tourist numbers rose again, see figure 2.4 (CBS Nepal). Income from tourism generates around three percent of Nepal's Gross domestic Products and fifteen percent of its foreign currency earnings (Khek Gee Lim, 2007).

One of the strategies in Nepal concerning tourism is getting remote rural areas more connected with the national economy. This is done to attract more tourists by offering a great variety of destinations and types of holidays. A result is that these places lose their autonomy in order to gain modernity by being assimilated into a commercial economy and national policy. Many previously isolated villages face potential conflicts between local traditions and national development, and tourism is an important force behind these life-altering changes (Karan & Ishii, 1996).

There are many tourists' attractions in Nepal, both culturally and environmentally speaking. Being on the crossroads of many ancient cultures there are many religious, architectural, and artistic sights to be seen throughout the country. Furthermore, the ecological and geographical situation allows for many outdoor type holidays, from mountaineering and trekking in the High Himalayas to rafting in the Middle Hills, and visiting wildlife parks in the subtropical Terai (Karan & Ishii, 1996). The Annapurna trek is one of the most popular tourist destinations.

2.3.2.1 Annapurna region

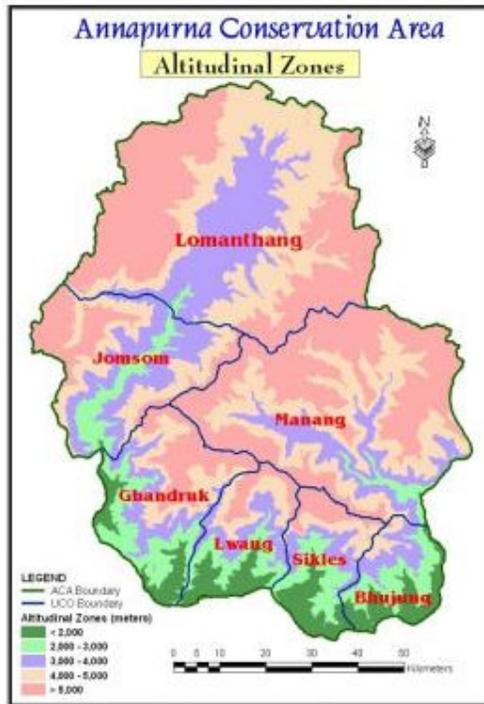
During the mid-fifties of the twentieth century, many people in the Middle Hills of Nepal migrated to the Terai, this was caused by declining trade and agricultural productivity in the hills and the opening of a new frontier in the low-land (see paragraph: 1.1.1). However, during the eighties trekking tourism became ever more popular and many people moved back to the hills to invest in tourism related businesses. In 1986, the Annapurna Conservation Area Project (ACAP) was launched to regulate tourism and environmental management, ACAP is part of the Non-governmental organization National Trust for Nature Conservation (NTNC) (Nepal, 2007). The goal of ACAP is to "*achieve sustained balance between nature conservation and socio-economic improvement in the Annapurna Conservation Area (ACA) thereby assist National Trust for Nature Conservation in achieving its goal*" and their objectives are to:

- "*Conserve the natural resources of ACA for the benefit of present and future generations.*"
- "*Bring sustainable social and economic development to the local people.*"
- "*Develop tourism in such a way that it will have minimum negative impact on the natural, socio-cultural, and economic environments.*" (NTNC.org.np, 2012)

The first tourist lodge in the area was opened 1969, but the numbers of lodges were quickly increasing with 45 lodges in 1980, 203 in 1990, and 497 lodges in 2002. These rising numbers of lodges correspond to increasing numbers in trekking tourists visiting the area. However, the area of Mustang has a two century old tradition of hospitality due to the aforementioned trans-Himalayan trading routes

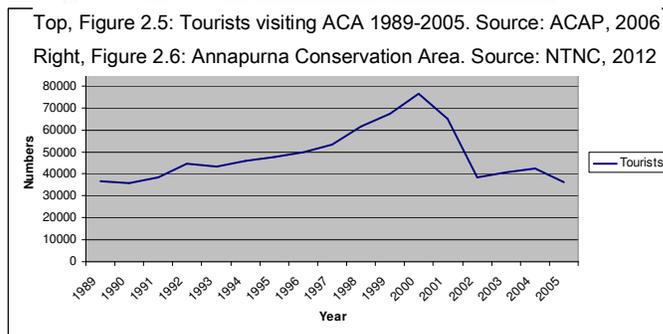
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between India and Tibet (Nepal, 2007). Figure 2.5 shows the number of tourists in the ACA over the years 1989-2005, and figure 2.6 shows a map of the ACA.



Problems with the Maoist rebels scared many people off just after the turn of the century, as could be seen in the previous figure about tourist numbers. In figure 2.6 Lomanthang and Jomsom make up Mustang district.

The increasing numbers of lodges is creating new socio-economic relations within villages along trekking routes. Often, only a few influential families own lodges, as others would simply not be able to get loans or save enough money to build a lodge themselves. New social classes arise; that of lodge-owners as employers and others in the village as workers for wage. Less attention is paid to agriculture, as tourism is producing more money for less effort. The agricultural products still produced are conforming to tourists' desires and not local diet (Khek Gee Lim 2007; Nepal 2007). To conclude:



“Historically, in the Himalayan communities of Nepal, religious institutions such as the temple have been socially and politically dominant. Much has changed, and as a result of tourism, a large share of the power has shifted away from the temples into the institutions of tourism” (Khek Gee Lim 2007, p. 734).

2.4 Conclusion

This chapter has provided some theoretical thinking on climate change, road construction, and tourism, and gave some examples of these three topics in the reality of a country such as Nepal. As evident from this chapter, it is clear that all three topics form both threats and opportunities for developing countries.

Climate change is believed to have many negative consequences such as extreme weather, excessive precipitation, or droughts. Furthermore, global warming is predicted to change ecological zones, allowing disease to spread and species to colonize territories that were previously not suitable for habitation. Especially High Mountain communities are seen as vulnerable to climate change as global warming is predicted to rise twice as fast at high altitudes. However, studies also indicate a reality for High Mountain communities such as Kagbeni that climate change could prove to be beneficial. In addition, to see climate change automatically as a threat to mountain communities could be rather short

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sighted, as these communities in harsh climates already have many adaptive mechanisms as their daily realities. These communities also have much flexibility, not just vulnerability.

Road construction, may lead to many positive outcomes such as increased connectivity and market integration, with the result of access to new technologies, government support, and better paying markets for their products. However, potential for development must be present in the newly connected areas otherwise the road will serve as an escape route for rural poor, whilst outside investors may take a business interest that might not benefit the local people.

Tourism again, has also many pros and cons for developing countries. As a market, tourism can operate directly in marginal regions, where it can create jobs, livelihood diversification, and local linkages with other sectors such as agriculture. In this way, tourism can bring development on a broad scale to remote areas. On the negative side, many form of tourism in developing countries is dependent on western tourists and international travel agencies. This runs the risks of much money generated by tourists does not remain in the country itself. In addition, local people run the risk of loosing access to, or the depletion of local resources. Furthermore, in small communities tourism could distort traditional socio-economic relations between those who own a lodge and those who do not.

Chapter III – Methods & Techniques

This chapter is divided in a theory and a methodology part; the theory part will firstly discuss the research goal and objectives. This is presented visually in a conceptual model from which the main research question and sub-questions are derived. This theorising part also includes the operationalisation of the different concepts and topics in this research. After this theoretical part, there is a methodological part. This part discusses the methods and techniques used to collect data from the field. There will be an explanation for the employed research methods, and how these methods worked out in the field. This chapter will conclude with the problems and limitations of the research.

3.1 Theorising

This first part of the chapter includes the main research question, the sub-questions, and the conceptual model. It starts with the research goal and objectives.

3.1.1 Research Goal and Objectives

The objective of this research is to discover the impact the three main topics in this thesis, climate change, the newly constructed road, and tourism have on the village of Kagbeni by looking in particular at their influence on the adaptive capacity in the village. In addition, the goal is to investigate local mechanisms and geographical flows that also influence the adaptive capacity and the daily lives of the villagers in Kagbeni.

The new road brings many transformations at a rapid speed. Travelling has become easier and importing goods became cheaper. Not all changes brought by the road are positive, as are some side effects and consequences. Tourism is a major source of income in the village, but is also a source of cultural change and economic inequality. In addition, scientists consider climate change to be a major threat for high mountain communities like Kagbeni, due to increasing insecurity and volatile weather conditions in the future. Lastly, there are many local mechanisms, traditions, and a completely adapted lifestyle to suit the local climate, but also international connections, or geographic flows, over hundreds, if not thousands of years.

These three topics are the focus of the research and the objective is to find out how the villagers in Kagbeni experience the changes created by these topic what the consequences and side effects are of these for the adaptive capacity of the village. A different goal is to see if there are cultural or institutional aspects within the village that influence adaptive capacity in the community.

As stated in the introduction, Kagbeni was chosen for this research because of the combination of these three topics in the context of a village that until relatively recently had been cut-off from most of the world, and where some people are still living in the same way they have been doing for centuries.

3.1.2 Conceptual Model & Research Questions

This paragraph will first show the conceptual model, which is a visual representation of the research goals. In the model are three hypothesis included. The model is followed by a quick explanation, and the resulting research questions.

3.1.2.1 Conceptual Model

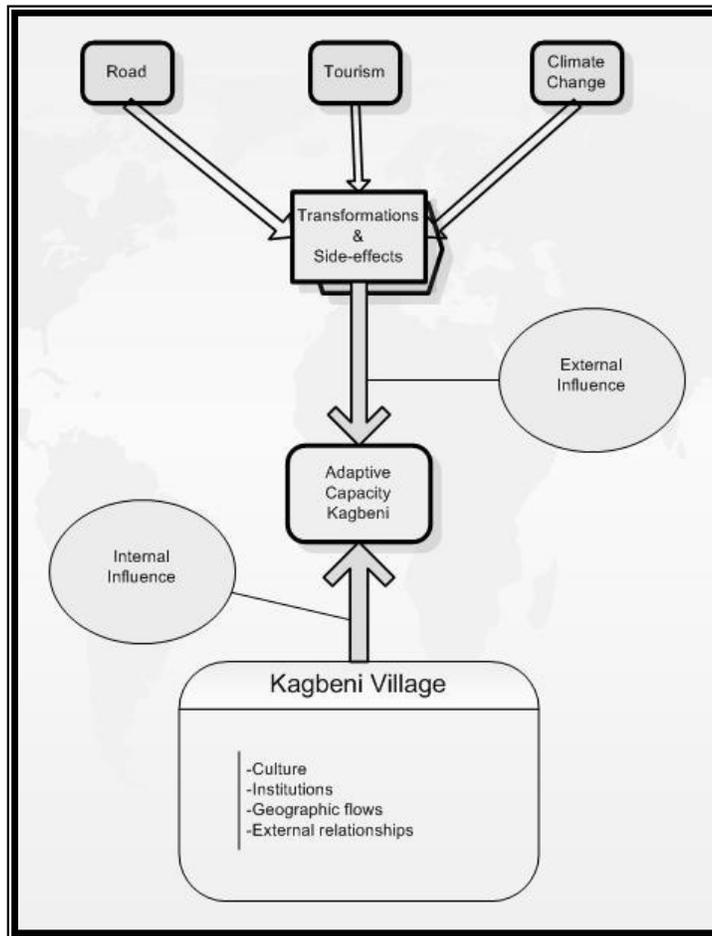


Figure 3.1: The Conceptual Model

The model begins with the three main topics of the research: the newly constructed road, tourism, and climate change. These three topics can cause transformations, or changes, and side effects. These changes and side effects form an external influence on the adaptive capacity of Kagbeni. At the bottom is the village itself, in the box representing the village are the topics used in this research to investigate the internal influence on the adaptive capacity of Kagbeni. The conceptual model assumes that the adaptive capacity of the village is influenced by the changes and side effect caused by the three main components. The model also asserts that the culture and institutions inside Kagbeni village influences its adaptive capacity. The three concluding hypotheses are:

- The new road, tourism and climate change cause changes and side effects, these can be both positive and negative.
- The caused transformations and side effects influence the adaptive capacity of people in Kagbeni.
- Local culture, institutions, geographic flows, and external relations also influence the adaptive capacity of people living in Kagbeni.

3.1.2.2 Research Questions

The main research question of this thesis is:

What are the positive and negative outcomes of Climate Change, Road construction and Tourism; how do these influence the adaptive capacity of- and within the community; and what are the effects of local mechanisms and geographical interactions on this adaptive capacity?

To help answering this question there are five sub-questions, namely:

- What is the influence of climate change on Kagbeni, and the village's adaptive capacity?
- What is the influence of the newly constructed road on Kagbeni, and the village's adaptive capacity?
- What is the influence of tourism on Kagbeni, and the village's adaptive capacity?
- What are other external sources of influence on the culture and adaptive capacity of villagers in Kagbeni?
- What are local sources of influence on adaptive capacity within the village of Kagbeni?

3.1.3 Operationalisation

- **Adaptability:** a measure of flexibility to adjust to changing circumstances while maintaining a certain degree of livelihood security and sustainability.
- **Changes/transformations** cause by three main topics: In this thesis, this means, for example, that people were asked how life was before and after the construction of the road. This question was followed up by a question on the positive and negative outcomes of the constructed road. Thus, these changes are the perceptions of villagers on the influence one of the three main topics have had on their lives.
- **Climate Change:** refers to a statistically significant change in climate. To make this change statistically representative there has to be at least 100 years of data concerning climate related events.
- **Climate Data:** Data about: temperatures during the day and night and over different months; data about the timing and amounts of precipitation; data of hours of sunlight and power of the sun; data about air pollution. Lastly, data about extreme weather events such as: droughts, extreme temperatures, excessive rain-/snowfall, flooding, wild fires, storms, disease outbreaks, and pests.
- **Climate Variability:** short term, ten/fifteen years, differences in timing of climatic events. For example: later or shorter frost periods, different timing of monsoon rains, etcetera.
- **Domestic tourism:** This type of tourism consists of Hindu pilgrims from Nepal and India. Kagbeni itself is a pilgrim site for many Hindus, but the destination is Muktinath, a few kilometres east of Kagbeni.
- **Farmer Livelihood:** all facets, strategies, and actions entailing the everyday life of farmers in the research area.

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- Foreign tourism: Foreign tourism in Kagbeni coincides with trekking tourism. The village is located on the Annapurna trekking trail and as such is visited by especially wealthy Westerners. However, trekkers come from all over the world.
- Geographic flows: This includes all forms of contact, interaction, and commercial activity with some selected places outside Kagbeni village, see figure 3.2.
- Kagbeni Village: The village from which the research sample was drawn.
- Kagbeni VDC: The municipality or Village Development Committee of which Kagbeni village is the chief. Other villages in the VDC are: Sangta, Tiri, Ekle Bathi, Pagling, Falek and Dhagarjong.
- Local institutions: The unofficial manner in which the people of Kagbeni organized their village society. Local institutions are for example marriage, choosing a village leader, holding village meetings, and the management of irrigation water.
- Local mechanisms: Local traditions and customs aimed at adapting to living in a harsh climate along an ancient trading route. For example; mechanism for food security and an entrepreneurial mindset.
- Non-original villager: A person in Kagbeni who does not own land, regardless of being born in the village or owning a house in the village.
- Original villager: Person who owns land, pays land tax and is allowed to attend village meetings.
- Perception: awareness of the farmers to a changing climate or climate variability.
- Permanent migration: Migration in which the migrant lives throughout the year in a place other than Kagbeni, including those who migrate for education.
- Research sample: People included in the questionnaire, excluding people from focus groups or other interviews.
- Temporary migration: Migration in which the migrant is living part of the year elsewhere and part of the year in Kagbeni.

3.2 Methodology

The research was done in two stages. The first was a short exploratory stage at the end of February 2011, and during second stage in March and April 2011, all questionnaires and the majority of interviews were conducted.

3.2.1 The First Stage

The first stage of the research was an exploratory visit to the village for a short week at the end of February in 2011. The goal behind this visit was to get some first impressions and to make some contacts within the community to aid the research in the second stage. The latter was important because the village is used to seeing many Western tourists, therefore, it was important that the researchers would be seen as researchers, despite being Western, and not tourists. In this initial stage, two interviews were conducted, respectively with a villager in nearby Tiri and with an ACAP employee. During this stage, the researcher gained a better grasp on the problems and realities faced by the people living in the village. Therefore, this exploratory stage greatly formed the real research conducted

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in stage two. In between the two stages, the researchers finalised the plans on how to do the research and which methods to use. The researchers agreed on using multiple methods, both qualitative and quantitative such as focus groups, interviews, and questionnaires.

3.2.2 The Second Stage: focus groups

The second stage began with a focus group of village elders. The topic of this focus group was geographic flows, or movements, from and to Kagbeni village (two examples: Appendix I). The origins and destinations of these flows are Kagbeni VDC, lower Mustang, Upper Mustang, Muktinath/Manang, Dolpo, Kathmandu/Pokhara, Tibet/China, India, and Further Abroad. The visual representation of this focus group can be seen in figure 3.2, in this figure the arrows do not indicate distance or size of geographic flow. Village elders were invited for this focus group as it was presumed that they had much knowledge of the village, including what is coming in and out.

The second round of focus groups dealt with four topics, and consisted of groups of random people

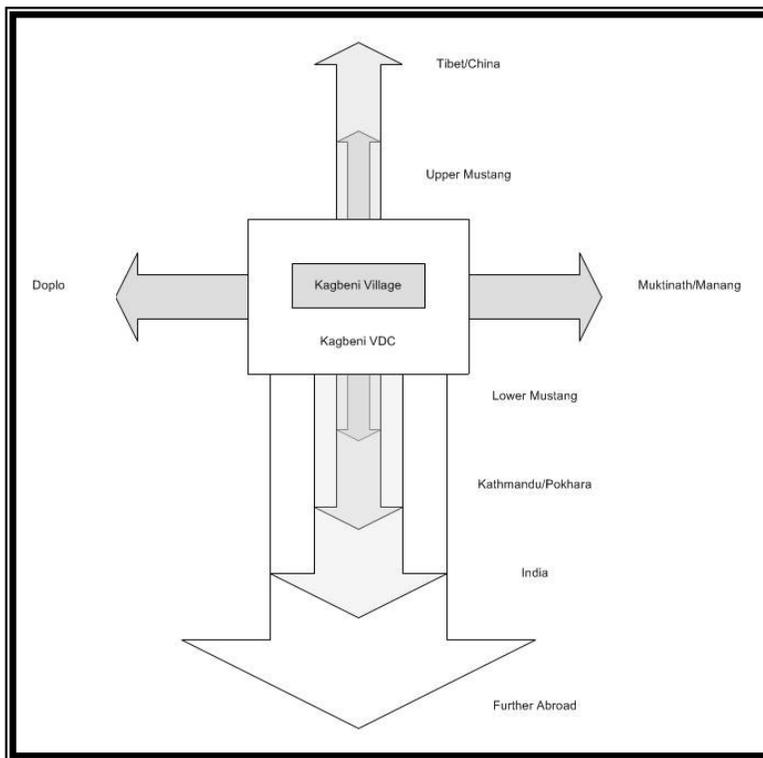


Figure 3.2: Visual representation of the first focus group topic.

who gathered at the bridge. Some groups consisted of only men, and others of only women. These groups were formed by people who had finished their work on the field and in the house, and looked for the company of other villagers while finishing some other chores like knitting.

The first focus group tried to map problems with water availability. For each season the villagers were asked if there was too much, too little, or enough water, differentiated between

drinking water and water for agricultural use. In addition to asking about quantity, they were asked about quality of the water, and how any of the problems could be solved, or coped with.

The second focus group involved the three main topics of the research: the newly constructed road, tourism, and climate change. People were asked about their lives prior to the road construction, and how the constructed road changed their lives. To follow up on these questions, the positive and negative effects of the road were listed. Next, people were asked about climate change. This turned out to be a difficult topic as many people professed not to have any knowledge, or proper memories, about the

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climate. Lastly, the villagers were asked to list the positive and negative effects of tourism on Kagbeni. Examples of the outcomes of these focus groups are listed in appendix II.

3.2.2.1 The use of focus groups

Focus groups can be a very useful tool to conduct research. Due to group dynamics, participants are encouraged to respond to the researcher but also to each other. Unlike the isolated one-to-one atmosphere of individual interviews, interviews using focus groups can provide extra information about the cultural background of people. Due to the often-relaxed atmosphere, the conversation within a group can take an unexpected turn (for the researcher) and thus provides information, insights, and feedback to the researcher. Downsides to focus groups are that some individuals are more dominant than others are and might not let other speak their mind. Furthermore, focus groups are not useful for sensitive or taboo topics, as people are likely not to share opinions about such topics with group members (Kitzinger 1995).

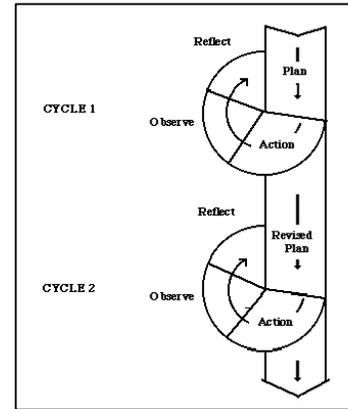


Figure 3.3: Action Research Process.
Source: O'Brien, 1998

In this research, focus groups were used as part of action research, or participatory research, although not in the strict explanation of this type of research. By conducting focus groups, the researchers gained new insights and a better understanding of the culture and problems in the village. As the Action Research Process requires (see: figure 3.3), the researchers went through two cycles of action, planning, observing, and reflecting before conducting questionnaires and finishing the research (O'Brien 1998). The first cycle was the exploratory first stage after which many changes were made to the original research goal. The focus groups during the second stage of the research completed the second cycle of reflection, after which the researchers finalised the questionnaires and remaining interviews, and eventually the entire research. However, this is more in an abstract form and not like proper action research in which actual action is undertaken, from which the researcher can learn. In this instance, the researcher used the action research models of two cycles to improve the final part of their research.

3.2.3 The Second Stage: interviews & questionnaires

During and after the rounds of focus groups the researchers had many informal interviews to gain better understanding of life in the village. Interviews were done with teachers at the local school, hotel owners, an entrepreneur, an employee of the local health post, and an employee of the local ACAP office.

In addition to this qualitative form of data collection, quantitative data was also collected. Data about the climate was collected from a weather station in nearby Jomsom, and data about tourism was retrieved from the ACAP office. The researchers also collected 30 household questionnaires from a total of 100 households in the village.

The questionnaire used can be seen in appendix III. However, due to several factors like language barriers and the time each interview would consume, the questionnaire became a structured interview.

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This structured interview was based on the questionnaire seen in Appendix III but the interviewed people would not fill in the forms themselves. Some questions were skipped because they turned out to be unanswerable. Question five was skipped as it was not relevant due to the great number of small plots interviewees had. On question six everyone used different measures or had different ideas about what yield was. Questions fourteen, fifteen and sixteen were morphed into one question. Question 30, the network matrix was found not relevant, as people would reply that there is a village committee that would assist problems concerning the whole village, not individual families. Finally, question 42 the income matrix was not used either; most of the people had not idea how to translate their income to money payments. The structured interviews lasted about an hour each. The people participating were those who were at home and had time to do the interview.

3.2.3.1 The use of questionnaires

Questionnaires are a form of quantitative research. Quantitative research can be explained by using the following two quotes: “*The aim is to classify features, count them, and construct statistical models in an attempt to explain what is observed*” and “*Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail*” (Neill 2007). Thus, questionnaires provide a researcher with statistical data, with the aim of testing hypotheses and finding statistical proof for research questions. As can be read in the second quote, quantitative data may miss the context and cultural background. This is why is it preferable to combine qualitative (here; interviews and focus groups) and quantitative (here; questionnaires) data.

The researcher used a quota sample for choosing the right people for the questionnaires. In quota sampling, the researcher describes the types of people based on certain characteristics'. The quotas' of these characteristics' should be representative of the chosen research population. One problem with quota sampling is that though the quotas' can be representative, the entire sample might not be representative of the whole population (Laws, Harper & Marcus 2003).

Initially, the researchers wanted to add Caste as a quota, but after some interviews, the researchers discovered that the overwhelming majority of the households in the village belonged to the same Caste, see textbox 3.1. Therefore, the researchers decided that it would be both difficult and hardly relevant to quote people on Caste. Instead the quotas' were based on being a lodge owner or not, and being originally from Kagbeni or not. In total 30 people were interviewed using the questionnaire. In the entire village, 23

households own some type of lodge or hotel, this results in a sample quota of seven households. Furthermore, there were 42 households in the village not originally from Kagbeni, resulting in 13 households in the sample quote. With these quota installed, the researchers went with the two translators around the village to find people who fit the quotas' and had time to do the questionnaire.

Caste in Kagbeni.

The hundred households in the village are divided amongst three different Castes. The Takori, who are descendants of old kings. The Gurung, who are the middle class and can again be divided in higher and lower. The lowest class are the Biko, this caste consists of only two households. The Takori live in five households, and the Mendic, the lower Gurung, consists of four households. The remaining 89% of the households in Kagbeni are Gurung.

Textbox 3.1: division of Castes in Kagbeni

3.3 Limitations of the Research

One of the biggest limitations the researchers came across with was the fact that the research had not been properly planned beforehand. The researcher went to Nepal as part of collaboration between Utrecht University, Wageningen University, and the Nepalese Engineering College (NEC) in Kathmandu. However, this collaboration had not been finalised yet, mainly due to the limited contact. Because of this limited contact, the researchers were not aware of the areas and research topics of the NEC. Upon arriving in Kathmandu, it was clear that NEC could not provide the researcher with the needed support on site. Because there is, in Mustang district north of Jomsom, the interesting situation of climate change, a new road, and tourism in an area both isolated- and connected through an international trade link at the same time, the two researchers were set on doing research there. The consequence of this was that the researcher needed two months for further defining the research and finding support and contacts to assist the research. Finally, through a NGO called ISET-N (Institute for Social and Environmental Transition Nepal), the researchers came in contact with two teachers from the village. These teachers could assist us with finding translators and introduce us to some important people in the village. If the research had been better planned beforehand, the research would not have to take up the time consuming task of looking for support and contacts. In the end, the researchers had one month to do the actual research.

Another limitation was the use of translators. One translator came from India, but had lived a long time in Nepal and had done research himself in the village. The second translator came from the Chitwan region in south Nepal; he had lived several years in Kagbeni doing work for a Christian NGO. This meant that neither the researchers nor the translators had English as their mother tongue, which most likely led to some problems in understanding each other. To make it even more complex: even though Nepali is the official language in the whole of Nepal, the people in the village have Bhojpur, a Tibetan language, as their first language. It is very likely that information got lost in translation. In addition to the language, there were also great cultural differences. The researchers' were atheist Europeans, the translators came from a Hindu background but were converted to Christianity, and the villagers were Tibetan Buddhists. Again, most likely there have been some or many misunderstandings during the interviews, focus groups, and questionnaires.

Another limitation was the memory of people. This limitation is mostly linked to asking questions about the climate. People would often give contradictory information, or simply said that they did not know anything about the climate. The size of the Kali Gandaki River was especially a source of contradictory answers. A teacher who said that when people claim the river is small now is because they have a flooding in mind that happened fourteen years ago gave one explanation for these contradictions. This problem might also be linked to the aforementioned language problem.

Lastly, the researchers were very dependent on cooperation of the villagers, their availability, and their time schedules'. Because of this, it is not guaranteed that the questionnaire sample, or opinions expressed in focus groups and interviews are representative for the entire village.

CHAPTER IV - Internal and External interactions in the Daily Life of Kagbeni Villagers

This chapter will try to form a picture of the daily reality in Kagbeni village, and is divided into two parts. The two parts will try to answer two of the research questions formulated in chapter three, namely:

- What are local sources of influence on adaptive capacity within the village of Kagbeni?
- What are other external sources of influence on the culture and adaptive capacity of villagers in Kagbeni?

The first part discusses culture, institutes, and local traditions that constitute a main component of living in the village. The second part looks at geographic flows, which connect Kagbeni to the rest of the world. Dara, who is a prominent villager, has provided many stories about the village and its culture. This chapter therefore contains some textboxes called 'Dara's Stories', as these stories are sometimes the best way to explain cultural elements of the village.

4.1 Living in Kagbeni: local culture and institutions

The first part of this chapter will focus on internal dealings in the village. It begins with family life, followed by migration and education amongst households. Then some light is shed on the more political side of village-life, income, and it ends with current and future problems with a special focus on water issues.

4.1.1 Family and Marriage

The tradition surrounding the search for a wedding partner is changing as the village is becoming more modern. The tradition was that of pulling (see textbox 4.1) or parents agreeing with other parents that their children should marry. Nowadays it is ever more frequent that people marry by own choice and out of love. A villager stated, *"The marrying tradition now is much better than before. Before we would pull a girl and marry her, it was basically kidnapping. Now people marry by own choice"*. However, this freedom of choice is relative, and whom a girl marries does make a difference in her social position in the village. As explained, *"In Kagbeni, a Gurung girl can marry a Takori boy, she then also becomes Takori. If a Takori girl marries a Gurung boy, she becomes Gurung. The lowest two castes cannot marry outside their own caste. It is very rare, but it happens that someone marries someone entirely outside the community"*. Outside the community means someone who is not from Upper Mustang, Kagbeni VDC or the Muktinath valley; people from these areas all belong to the Bhote Tibetan community of Mustang.

Aside pulling, bigamy is also a marriage tradition that is becoming less popular. In Kagbeni, as in other High Mountain communities in Nepal, it is not uncommon for one woman to be married to multiple brothers in one family. The idea behind this is that the land and other property of the family would not be divided amongst the brothers. This ensures that the plots of land remain large enough to provide food security for the family. Instead, the brothers form their own family with one wife in which it does not matter which child (genetically) belongs to which brother. The increasing prosperity in the village is creating the downfall of this tradition because some earn enough money to buy more food if necessary. The other reason is that people are more mobile and often migrate permanently to other places. Therefore, this tradition that creates population control and food security is not necessary as a survival

strategy anymore.

Despite one woman having multiple husbands, the role division within the household seems to be paternalistic. Of the 30 people in the research sample there were fourteen men and sixteen women, thirteen of the men claimed to be head of the household against seven of the women.

Dara's Stories: *Pulling*

"Pulling is very rare these days, but six months ago some people from Kagbeni pulled a girl from Dagarjong. How it works is that the boy first tries to convince the girl to marry him in a normal way. When she rejects his proposal but he really likes her then he asks his friends to help him. Same as what happened six months ago (interview on 24-03-2011). We asked him if he was really sure that she was the one he wanted to marry; he was sure so we started to plan the pulling. There was someone in the village (i.e. Dagarjong) who helped us, he knew the girls house like the back of his hand, so we knew exactly where her bedroom and where her parents bedroom was. We went with a group of five on motorbikes, before (the road) we would go on horseback, in the middle of the night, locked in the parents, and kidnapped the girl. She was tied in between two people and screamed very loud the whole way back.

Tradition prescribes that her family comes early morning to the house of the boy, throwing rocks and screaming 'why did you take my girl!'. Then the boy has to invite the family and give them food and entertain them. Finally if the parents have been satisfied by the boy they ask their daughter if she wants to stay, or go back home. Nevertheless, the girls always decide to stay. Within 24 hours, the family and friends of the boy wear special clothes, go to the house of the girl, and offer her mother nine coins for the nine months she carried her. Then they get married. In the case of the boy and girl six months ago, they are very happy and romantic now.

If a girl does not want to be pulled she always makes sure to close her room properly, or she runs away from home when she hears a rumour about pulling. Pulling also happens when a boy and a girl really like each other but her family does not approve. It is actually quite a shame if a girl returns home after being pulled."

Textbox 4.1: Pulling

Buddhism is also important in family life and in keeping the population growth under control. According to tradition, every second son and second daughter in every family belongs to Buddha. These children are sent to the monastery and learn Buddhist teachings from Lamas. Some very poor families send all their children to live in the monastery because they cannot afford to raise them, themselves. The whole community pays for the monastery. One Lama explained that he lived entirely on gifts, for example: when he goes for prayers to someone's house, that person pays him in the form of dinner. Despite the decreasing size of families, the tradition of sending children remains intact. In fact, it is becoming more popular as there are more funds available for maintaining the local monastery. Kagbeni does not receive any government support for their Buddhist monastery in contrast to the Hindu temple also located in the village. However, due to remittances, the increasing prosperity and foreign aid, the monastery is currently even building new quarters to house new lamas and students.

As written above, the size of family in the village is decreasing: "*On average people have three or four children, eight is the maximum. Before, many families had ten children. Back then, people did not know about birth control. Also people are now very busy, and having many children is very expensive*". This quote is in line with the research sample in the questionnaire. The mean family size in the sample is 5.5 people, thus a household of five or six members. The smallest household consisted of two people, the largest of twelve.

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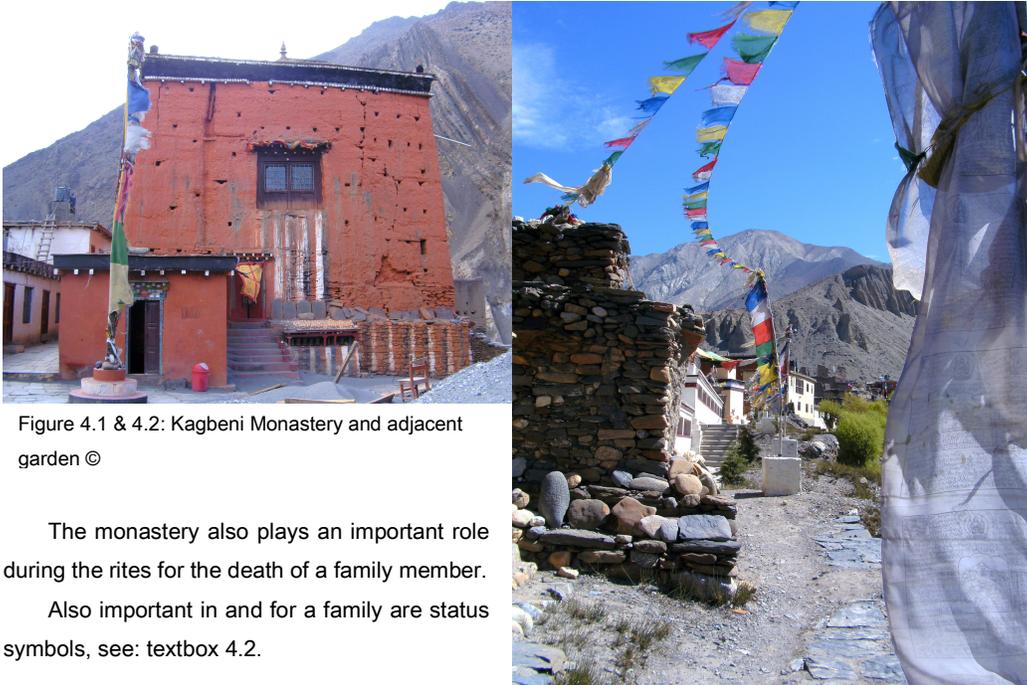


Figure 4.1 & 4.2: Kagbeni Monastery and adjacent garden ©

The monastery also plays an important role during the rites for the death of a family member.

Also important in and for a family are status symbols, see: textbox 4.2.

Dara's Stories

The Dead

"Ten to fifteen years ago we would feed the deceased to the vultures; nowadays they are cremated close to the river. The deceased must be burned within two days of death. The fire for this burning used to be the holy fire from Muktinath, but now we have our own special fire in the monastery (see: At War with Muktinath, paragraph 4.2.4). On the third day there is a special ceremony and on the seventh day again. From the seventh day until the seventh week, the family prays every single day for the dead person. Then after the first, second and third year there are special ceremonies again for the dead person. After the third year the mourning and remembering for the deceased is over. The cremations are done with wood, even today when wood is very expensive. But funerals are very expensive anyway."

Status Symbols

"People here pile wood on the roofs of their house. It is believed that this brings good fortune and is an indication of the wealth (mainly immaterial) of the concerned household. The wood on the roofs is not used unless there is real need for it, and it has to be replenished straight away otherwise bad luck will happen. Horses are also a good indication for a household. A good horse is even above the head of the household" (further evidence of the importance of horses in: Apple Farm behind Tiri village, paragraph 4.2.1).

Textbox 4.2: The Dead & Status Symbols



Figure 4.3: status symbols, stacked wood & horses

4.1.2 Migration & Education

Many people in the village undertake some form of migration. There are several reasons to migrate, and different forms of migration. Temporary migration usually corresponds with winter migration. Winter migration is a very common lifestyle. During winter months, the school is closed and the overwhelming majority of villagers temporarily migrate south. One or two people per household are left behind to look after the house and livestock. The reason behind this is that there is hardly any food during winter and it is too cold to be doing anything productive like working the land. Temporary summer migration is less common and takes place over shorter periods of time. Summer migration is used for harvesting crops elsewhere and for picking yarsagumba (see more in: paragraph 4.2.4). Permanent migration includes those who are enrolled in education elsewhere, and those who work and live throughout the year in other places rather than doing so seasonally. Table 4.1 and 4.2 show what kind of migration household members undertake, and how many persons per household migrate.

Type of Migration	Frequency/ households	Percent	Household members Migrating	Frequency/ members	Percent of Households
No Migration	5	16.7	One	10	40
Temporary Migration	7	23.3	Two	5	20
			Three	3	12
			Four	3	12
Permanent Migration	9	30	Six	4	16
			Total	25	100
Temporary & Permanent Migration	9	30			
Total	30	100			

Table 4.1 (Left): Types and frequencies of migration per household.

Table 4.2 (above): Numbers migrating per household.

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Only five of the 30 households had no member undertaking any kind of migration. These households included people who were migrants themselves, or people too poor or too old to travel. In 23 percent of the cases, household members only went on temporary, or winter, migration. Thirty percent of the households consisted of relatives who had permanently migrated, and another 30 percent had a combination of migrants. The percentages in table 4.2 only include migratory families, thus excluding the five 'No Migration' families. In 40 percent of these migratory household there was only one family member migrating. The maximum number of people within one household who undertook some form of migration is six. A scatter dot graph showed no distinct connection between size of the household and number of household members migrating.

Tables 4.3 and 4.4 show the reasons behind, and destinations of migration. Of the household who have migrants, almost 50 percent gave up labour as sole reason for migrating. Twenty percent of the households only had migrants who had education as a sole purpose. Of the twenty percent in the 'else' category are households that also consist of migrants with religious purposes.

Reason for Migration	Frequency/ Households	Percent
Work	12	48
Education	5	20
Work & Education	3	12
Else	5	20
Total	25	100

Table 4.3: Reasons for migration

Destination of Migration	Frequency/ Households	Percent
Within Nepal	16	64
India	3	12
USA	1	4
Multiple Countries	5	20
Total	25	100

Table 4.4: Migration destinations

Most migrants, 64 percent, remain in Nepal, with India being the second favourite destination. Twenty percent of the households have relatives migrating to multiple countries. Usually this is a combination of Nepal and India, in two occurrences, the USA was included, and one household had a relative in Italy. The foreign embassies and the Nepali Ministry of Foreign Affairs make it more difficult to get visas for countries other than India. A few years ago there were more people migrating further abroad.

In total nine households received remittances from relatives abroad. A scatter dot graph showed no relation to house size and receiving remittances. In addition, a Chi-squared test showed no relation between households who have members migrating for work purposes and households receiving remittances. Possible reasons why there is no relation between remittances on the one hand, and household size and migration on the other, is that the research sample is not large enough. Table 4.5 gives an overview of the differences between those who receive remittance and those who do not.

Receiving Remittances	Origin	Size of Household	Problem Drinking water	Different Fuel sources	Problems Energy	Problems Enough food	Income sources	Future Problems	Current problems
Yes	90 percent	7.7	80 percent	2.6	70 percent	20 percent	3.6	2.6	1.4
No	40 percent	4.6	80 percent	2.3	60 percent	60 percent	2.2	1.9	0.8

Table 4.5: The differences between receiving remittances and not receiving remittances

The table does show some great differences between the groups, especially when looking at the origin of the household, the size of the household and the difference in food security. However, neither of these topics indicated a significant relation with receiving remittances. Separating the households between those who have permanent migrants and those who have temporary migrants both for work purposes showed that in both cases half the households received remittances. It can only be guessed why statistical test do not indicate a relation between migrating for work purposes and receiving remittances. It could be that the cell count is too low in the research sample, or the migrants earn too little money abroad, or the migrants do not know how to send the money back.

4.1.2.1 Education

The local school in Kagbeni exists since approximately 1964. In the beginning, the school only had year one to five. Twenty years ago, this increased to year one to eight, and since ten years, the school has year one to ten. The school is open six days a week, between ten o'clock a.m. and four o'clock p.m. A few years back the Nepali government reformed the school system. Years one to five are now called basic education, six to eight is pre-secondary education, nine to ten is called secondary education, and years eleven and twelve is called higher education. After year twelve, students can go to university. Consequently, the local school provides up to secondary education. For higher education, there is a school in Jomsom, at two hours walking distance. If students want to go to university, they have to migrate to Pokhara and beyond. While most students from the village finish higher education, there are only few who go to university, because this is expensive and far away. Furthermore, by the time the students have finished higher education, they have reached the age of sixteen to eighteen and are old and strong enough to work, according to local teachers.

Many children from the surrounding villages come for education to Kagbeni. As most of these children would have to walk too far everyday there are hostels on the school terrain, and many of these children only go home during the holidays. It is unsure how many children attend the school, an ACAP employee mentioned a number of 150 and a teacher claimed at least a hundred, but a lodge owner said it is currently (i.e. March 2011) not more than 70. The latter further said, *"The school in Kagbeni is not very good, but it has improved. Now there are more years of education, and an Indian NGO has built a library. However, those parents in Kagbeni who have money prefer to send their children to school in Pokhara or Kathmandu. Only few children go to school in Kagbeni and even less do not go to school at all. It used to be different, but these days' parents really see the benefits of an education and want the best school they can afford for their children"*.

Number in Education	Frequency/ Households	Percent
0	8	26.7
1	9	30
2	8	26.7
3	4	13.3
4	1	3.3
Total	30	100

Table 4.6: Number of people enrolled in education per household

Location of Education	Frequency/ Households	Percent
Kagbeni	8	36.4
Elsewhere In Nepal	8	36.4
Abroad	1	4.5
Multiple Places	5	22.7
Total	22	100

Table 4.7: Location of enrolment

Table 4.6 shows that 22 households in the sample had at least one person enrolled in education. In 77 percent of the households with education enrolment, the number of people enrolled was one or two. One

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household had four people enjoying education. Most of the people enrolled in education do so somewhere in Nepal. Eight households have students solely in Kagbeni, and the same number have students elsewhere in Nepal. Of the five households with students in multiple places there was one with a student in the USA, the remaining four households had students in both Kagbeni and other places in Nepal. A scatter/dot graph indicated that there is no relation between household size and number of people enrolled in education.

There is a tuition fee for the local school and parents also have to pay for the school uniforms, nevertheless, almost all children go to school, even those from poor families. The teachers at the school come from different places all over Nepal, none came from the village itself and one teacher came from Upper Mustang. Some people in the village considered this lack of local teachers an attempt from the government to gain more influence on the Tibetan culture in the area. It is prohibited for the schoolchildren to speak Bhote (the Tibetan dialect spoken in the area) on the school grounds, and according to some, the government purposefully send mostly southern Nepali teachers to the village. It was claimed there are more people in the area able to teach, but they get send away to teach elsewhere, and the school receives Hindu teachers in return.

This complaint resonates in another accusation against the government. It was openly claimed that the Hindu government was trying to decimate the Tibetan Buddhist culture in the village. An other example of this (according to some villagers) is that the government is funding the building, maintenance, and renovation of a relatively new Hindu temple, whereas no money is made available for the centuries old Buddhist monastery. Furthermore, the official holidays are based on the Hindu calendar and traditions, forcing the Buddhists to change the date of some of their celebratory days to coincide with a day off.

4.1.3 Local Politics

There is one major dividing line amongst villagers in Kagbeni. Namely, whether a person is or is not originally from the village. The consequence of this division is that a person who is originally from the village owns land, pays a village tax over that land, and attends village meetings. Being born in the village, or if someone's family has been living for generations in the village, does not have to mean that someone is originally from the village. In rare occasions, it is possible to go from non-original to original. In the research sample was a woman who, after a referendum during a village meeting, was granted the right to buy land and thus become an original villager. Owning a house does not give the right to become an original villager. This difference between owning land and owning a house is connected to the paying of land tax.

The money raised from land tax is used for projects concerning the entire village. The Mukiers are the ones deciding what to do with the money. Every year, during a village meeting, there are three Mukiers chosen from a group of prominent villagers. These three have the responsibility to use the land tax money for improvement of the entire village. During the questionnaire, people were asked if they received any assistance from fellow villagers. Nearly all answered negative and explained there is no assistance for individual families, only for something that would benefit the entire village. Six people said they could sometimes borrow money or food from neighbours, but there is no village fund for households struggling to make ends meet, with an exception for Lamas.

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Figure 4.4: community work on the irrigation system©

way of stopping the water flow; only the direction can be changed. Therefore, the Mukiers have a schedule of when which plot of land receives water. This is usually once every fourteen days for three consecutive hours, also during nighttime. The owner of a plot of land is notified in advance when he or she receives water.

The main project the entire village works on is the irrigation system. At the end of winter, when thaw sets in and people are returning to the village, a Mukier organises a village renovation of the irrigation system. During the winter freezing, many channels are broken or clogged up and this needs to be fixed before the opening of the irrigation season. Figure 4.4 shows members of the community working together on the system; figure 4.5 shows the result of their hard labour. The monks and lamas in the monastery pick a date for the opening of the system. This date is based on ancient calendars and rites. There are many ceremonies before and during the opening of irrigation, including a three-day prayer and music making to wake up nature. Because the irrigation system is not mechanical, there is not a



Figure 4.5: result of construction on the irrigation system©

4.1.3.1 Kagbeni VDC

Aside village meetings there are also VDC meetings. A VDC is a Village Development Committee. As chief village, Kagbeni receives government funds, which are distributed amongst all villages in the VDC. A VDC must constitute at least nine wards; it is not entirely clear to the researcher what a ward is made up of, as it is not synonymous with a village. Kagbeni VDC consists of nine wards, namely: Sangta, Tiri and Pagling are their own ward; Ekle Bathi is part of Kagbeni and does not receive its own government fund; and Kagbeni, Falek and Dagarjong are all two wards. The funds received from the government have increased significantly over the last few years. Seven years ago, the whole VDC would receive only one lakh³ Nepali rupees from the government. However, since then this figure has increased to twenty lakhs in 2010⁴. The fund can have different uses; it can be used for sanitation, water security, food security, education, health care, and other purposes. It is up to the VDC to decide how to distribute the money. For the most part Kagbeni VDC decided to do this equal to the number of wards, although there are some projects in the VDC that require a greater financial sacrifice from some wards more than others. At the time of research, the VDC had two main purposes for the government funds, a

³ One lakh equals one hundred thousand –100,000- of whichever unit; one lakh Nepali rupees = €894.90 on 16-12-2011 (<http://www.tijd.be/wisselkoersen>)

⁴ The villagers did not give an explanation why these funds have increased so rapidly of the last few years, a presumption is that it is connected to the end of the civil war and government plans for economic development in remote areas.

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new apple farm and water security, as Dara explains in textbox 4.3. Projects such as a new apple farm are topics for the VDC meeting as they cross the territory and funds of the different wards and villages. The VDC meeting also prescribed the policy that the use of pesticides is strictly forbidden in the area.

Dara's Stories: Apple Farm behind Tiri village

"Phalek, Tiri and Kagbeni share the same land. A village meeting was organised to discuss the possibility of building a big apple farm on a plateau behind Tiri village. Many years ago people would farm there. The legend says that the first year people farmed that plateau they sacrificed a chicken to the gods. The following year they had a very good harvest, better than the year before. The people thought that if they would sacrifice something bigger they would get an even bigger harvest. Therefore, that year they sacrificed a goat, and indeed the harvest was bigger. Every year they sacrificed a larger animal, at one point they sacrificed a yak and got an enormous harvest. Then they became a bit insecure, what animal could they sacrifice now? The people decided to sacrifice a horse, but the gods had become convinced of their greed and sacrificing a horse was the last straw. The gods destroyed the water supply and covered the land in rocks and stones. The people were forced to leave the area and are said to be the founders of nowadays Sangta village, many kilometres away. Because of this legend, it was decided that with a new water supply system, and hard work on the land, the plateau could once more be transformed into a farm. A large source of water has been found and this source could supply drinking water to Kagbeni, as well as irrigation water for the new apple farm. At first, the people from Tiri were against the plan, as they are a small village who would therefore not profit much from the farm, and they are more benefited by extra water supplies to the village itself. The problems have been solved after a number of meetings, and once all the funds are available, the farm could be in operation in five years time. And with extra help and money from the government the water pipeline could be extended to solve the water problem in Kagbeni."

Textbox 4.3: Usage of government funds on an apple farm and water security

For geographical reference, there is figure 4.6, which is a map showing land-cover in the VDC. It should be noted that the spelling of name places in the map is not consistent with the spelling in this thesis. The spelling of the names in the map is that of the Forestry Department in Kathmandu, whereas local people gave the spellings of names in this thesis. Most notable is the difference between Tiri and Treegaun. Figure 4.7 shows a satellite image of the VDC.



Figure 4.6: Map showing land cover of Kagbeni VDC. Source: Department of Forestry, Kathmandu

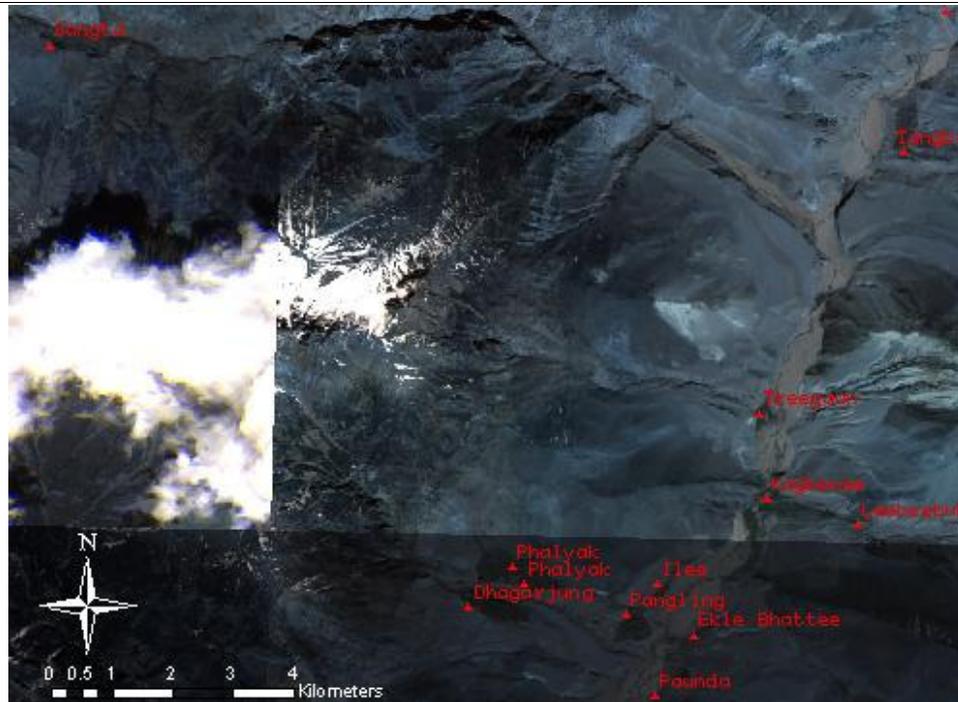


Figure 4.7: Satellite image of Kagbeni VDC. Source: Department of Forestry, Kathmandu

4.1.4 Income, Agriculture and Food

Eight sources of income are distinguished in the questionnaire, namely: direct income from tourism, indirect income from tourism, selling products, remittances, paid labour, teaching, renting out rooms, and gifts received as a lama. Direct incomes from tourism stems from owning lodges, shops, and teahouses. Indirect income is generated from, for example, renting out horses. Some people in the village rent out rooms to teachers or others who live more permanently in the village. Paid labour includes those who work directly for money, like being a wageworker in a lodge or in construction, but it includes also those who work the land of others in exchange for a large share of the harvest. The latter is included in the category because in the context of Kagbeni food products can be used as countertrade and as such are a form of 'money'. Selling products includes food products, but also homemade knitwear and Rakshi, a distilled beverage made of barley. In the research sample the minimal sources of income was one, and the maximum seven. On average, households in Kagbeni have 2.6 sources of income, so two or three sources. Figure 4.8 shows the different forms of income,

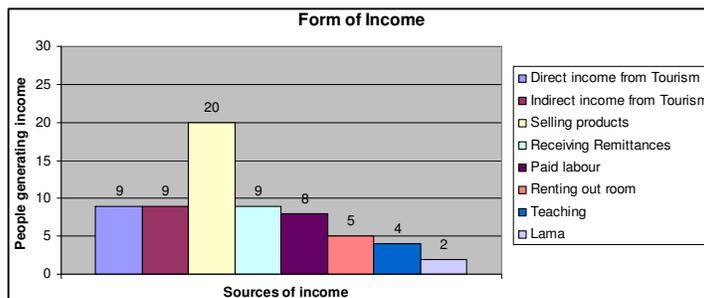


Figure 4.8: Sources of Income

and how many households are generating each type of income.

Chi-square tests were performed to see if there is a connection between sources of income and a household being originally from Kagbeni or not⁵. A performed chi-squared test of the

⁵ Chi-square tests start with the hypothesis that there is no connection between variables. If $(\text{Chi}) X^2 > 5.99$ and (Level of Significance) $\alpha < 0.05$, the hypothesis is rejected and there is a connection.

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variable 'selling products' indicated a significant connection between a household being originally from Kagbeni and having products sales as a form of income⁶. This could be explained by the fact that those who are not from Kagbeni do not own land and can therefore not sell food products easily. Table 4.8 is a cross tabulation belonging to this chi-square test.

Originally from Kagbeni/ Selling Products	Not Original	Original	Total
No	9	1	10
Yes	4	16	20
Total	13	17	30

Table 4.8: Selling of products divided by the origin of the household

Originally from Kagbeni/ Performing Paid Labour	Not Original	Original	Total
No	6	16	22
Yes	7	1	8
Total	13	17	30

Table 4.9: Paid labour divided by the origin of the household

that the chi-square test concludes a significant relation between have a teaching income and being not originally from Kagbeni⁸. As for the last form of income, there were only two lamas in the research sample, resulting in a meaningless test. Having a direct or indirect income from tourism, receiving remittances and renting out rooms were all not significantly linked to a household being originally from Kagbeni or not.

On average, households that are not originally from the village have 1.9 different sources of income, and those who are from Kagbeni have 3.1 sources of income. Using an One-Way ANOVA test, it can be concluded with 95 percent security that there is a significant difference in the number of different income sources between those who are originally from Kagbeni and those who are not. This is made clear by the F being distinctly larger than one, and the α being smaller than 0.05. Table 4.10 shows the difference in how many current and future problems households have, divided by source of income.

Source of Income	Tourism Direct	Tourism Indirect	Selling Products	Remittances	Renting Rooms	Paid Labour	Teaching	Lama
Current Problems	0.6	1.8	1.1	1.4	1.4	0.8	1	1
Future problems	2	2.1	2.1	2.6	2.2	2.8	1.8	0.5

Table 4.10: sources of income and average prospected current and future problems

Crudely speaking, households with an income stemming directly from tourism, paid labour, teaching and being a Lama have fewest current problems. Combined with future problems, Teachers, Lamas and households with a direct income from tourism seem to be more secure than those with other income sources.

⁶ $X^2=13.303$ and $\alpha=0.000$

⁷ $X^2= 8.666$ and $\alpha=0.003$

⁸ $X^2= 6.036$ and $\alpha=0.014$

Another form of income that is significantly linked to a households' origin is paid labour⁷. Table 4.9 shows that people not originally from Kagbeni have paid labour significantly more often as a source of income. Again, this is most likely related to these people not owning land, but also to the reason some of these people are in the village. Most of those who are officially not from Kagbeni are in the village to work in one of the lodges or work on the construction of the monastery.

As mentioned in the previous paragraph the teachers at the local school all come from different places in Nepal. Therefore, it comes as no surprise

4.1.4.1 Agriculture & Livestock

From ancient times, agriculture has been vital for survival in the village. During the winter months it was not possible to trade with Tibet or lower parts of the Kali Gandaki valley. This issue has been discussed before, agriculture is the reason one woman marries multiple brothers and food security causes the village to be largely deserted during winter. The newly built road, which shall be discussed in

Originally from Kagbeni/ Growing Crops	Not Original	Original	Total
No	11	1	12
Yes	2	16	18
Total	13	17	30

Table 4.11: growing crops divided by origin of the household

Chapter V, makes importing food easier and cheaper. Therefore, not everyone in the village needs their own land for growing crops, though most still do. The latter is once more an indication of the difference between the two groups in the village; the original and non-original, as can be seen in table 4.11.

The Chi-squared tests provided a 95 percent security that growing one's own crops is related to being originally from Kagbeni⁹. Growing crops is also strongly related to owning land. In the research sample, three households did grow crops but did not own land, and one household owned land but did not grow crops. The latter was the household of a Lama who lived with his elderly mother and whose siblings had permanently migrated. The three households not owning land but growing crops were labourers working for food. Using a Chi-squared test and a Cramér's V test to indicate the strength of a connection it can be concluded that there is a strong connection between growing crops and owning land¹⁰. The size and number of plots of land is difficult to measure. People in the village do not measure their land in hectares or square meters. Furthermore, plots are not a good indication either as they all have a different size, as can be seen in figure 4.9.



Figure 4.9: The many different plots of land surrounding Kagbeni

⁹ $X^2= 19.027$ and $\alpha=0.000$

¹⁰ $X^2=16.272$ & $\alpha=0.000$, and Cramér's V 0.736

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Figure 4.10 gives a good indication of what the most popular crops are, namely: buckwheat, barley, potato, fruit, vegetables, and garlic.

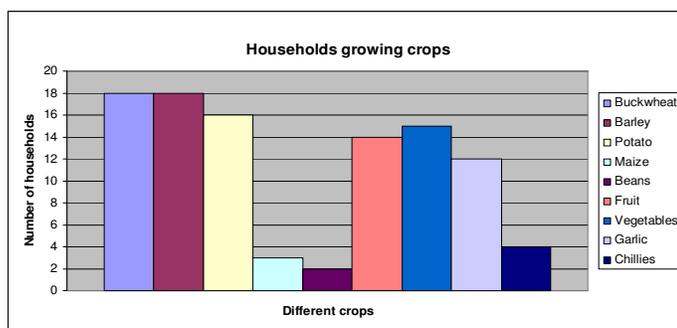


Figure 4.10: Crops grown by households in Kagbeni

potato, fruit, vegetables, and garlic.

On average people in Kagbeni, grow 5.7 different crops with two being the minimum and nine the maximum. Most people sell some of what they produce as can be seen in figure 4.11; only seven households kept all they produced.

Buckwheat, barley, vegetables, and garlic are traditionally grown in the region. Figure 4.18 shows that these more traditional crops are not regularly sold on. Potato and fruit are a favourite amongst tourists; therefore, these products are sold quite often. Nearly all people sell their food products at the local market. One person sold to

the market in Jomsom, and someone else in Pokhara and Kathmandu.

Owning livestock is also very important for survival in the mountains. Animals provide food, fertilizer, clothing material and perform labour. Twenty people in the research sample owned livestock. Using the Chi-squared test, it is with a 95 percent security that there is a connection between growing crops and owning livestock¹¹. In addition, a Cramér's V test result¹² shows that people growing their own crops are more likely to own livestock. Like growing crops, owning livestock is also linked to being originally from Kagbeni, although the connection is less strong¹³. The fact that growing crops is stronger related to origin that owning

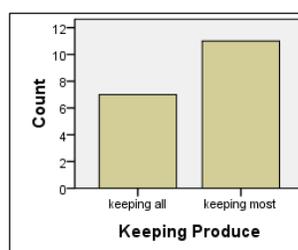


Figure 4.11: Keeping agricultural products

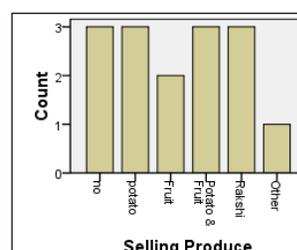


Figure 4.12: Type of product sold

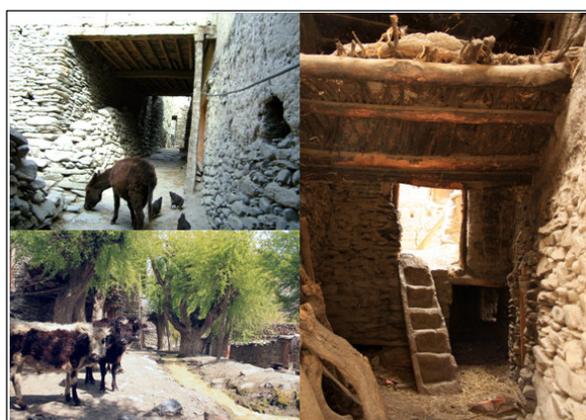


Figure 4.13: Animals roaming freely through the village & ground floor of a house

livestock is related to the layout of houses in Kagbeni. The old traditional houses in the village have stables on the ground floor, with steps leading to the living area for people. Furthermore, the animals do not graze in paddocks like in western countries. Most animals such as cows and chickens roam freely throughout the village. Donkeys and horses are brought back to their stables for the night, and goats are always grazing on high plateaus with a herder keeping an eye on them. Therefore, people can own livestock without owning land, figure 4.13 gives some

¹¹ $\chi^2=10.0$ and a $\alpha=0.002$

¹² Cramér's V test = 0.577

¹³ $\chi^2=8.213$ & $\alpha=0.004$, and Cramér's V=0.523.

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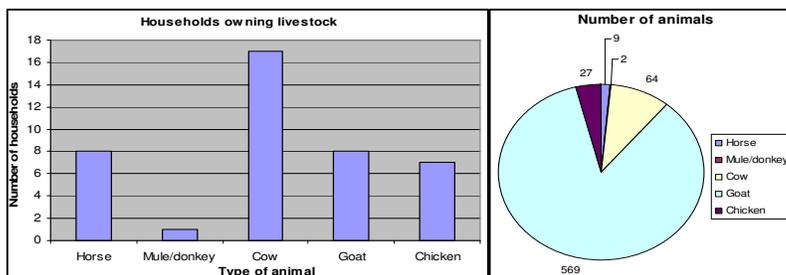


Figure 4.14: Animals owned by households

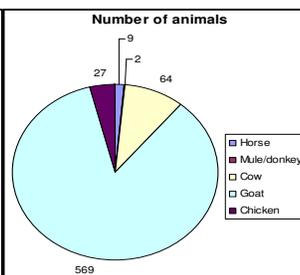


Figure 4.15: Number of animals

in research sample had a size of 200.

On average, people originally from Kagbeni owned 43.6 animals and non-originals owned 3.4 animals. However, due to the limited number of cases involved, no meaningful test could be performed to indicate a significant statistical difference.

4.1.4.2 Fuel & Food

Type of Fuel	Wood		Gas		Dung		Kerosene		Solar power	
	O	N-O	O	N-O	O	N-O	O	N-O	O	N-O
	16	8	16	10	4	1	6	4	7	0
Total	24		26		5		10		7	

Table 4.12: Types of fuel, distributed along origin of household

the Chi-squared and Cramér's V test, only solar power showed a significant connection between original and non-original, albeit a medium strong one¹⁴. Thus with 95 percent security it can be assumed that owning solar power is connected to being originally from Kagbeni.

There is no significant difference between having energy problems and being originally from the village or not. Table 4.13 is a cross tabulation of the kind of energy problems against being and original villager or not. It is evident that wood causes most problems for people in the village. In addition, when all energy problems are combined in one category there is still not a significant difference between the two groups. This is most likely related to wood being the main factor in energy problems. Deforestation is a big problem in the area as acknowledged by several villagers. A university teacher from Kathmandu gives as explanation the fact that there less state controlled forest management in the region. Wood has many uses, as discussed in previous paragraphs; it is used for burial rites and stacked wood on a roof is a sign of prosper and favours good Buddhist spirits. In Lower Mustang nearly all forests are protected, however, there is a forest behind Tiri village where people can still cut wood.

Originally from Kagbeni/	Not	Original	Total
Energy Problems	Original		
No Problems	5	6	11
Wood Problems	6	10	16
Gas Problems	0	1	1
Other Energy Problems	2	0	2
Total	13	17	30

Table 4.13: Type of energy problem * origin



Figure 4.16: Forest behind Tiri

An ACAP employee stated that only poor people use wood

¹⁴ $X^2=6.982$ & $\alpha=0.008$, and the Cramér's $V=0.482$

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nowadays as it is four hours walking one way to retrieve the wood. The research sample shows there is quite a misunderstanding from ACAP on this part. Wood is very important for the people in the village. Only six in the research sample did not use wood, one of whom was too busy to retrieve wood, not too poor. The others, not using wood were Hindus from other parts of Nepal who do not favour wood as much as a fuel or for other ends. There are more issues between ACAP and the village, not only relating to wood. However, ACAP claimed there was only some tension concerning the culling of wild animals; villagers had more complaints, see textbox 4.4.

Dara's Stories: ACAP

"ACAP is bad for us, I hope they will leave once their contract is over, that should be quite soon. A big problem for us is wood for construction; there is good wood close to Lete (Lower Mustang). The people there now know how to manage their forest and do not cut down the young trees anymore. However, it is good for the forest to cut down the old trees, otherwise they will just die, and that is of no use to anyone. ACAP prohibits us to buy wood from anywhere in the Annapurna conservation Area. We have to get the wood from Pokhara, which is much more expensive. In this case, ACAP is double negative, we have to pay more for wood, and other people from Lower Mustang cannot make money and see trees die without a cause. Those ACAP people make much money out of tourists; the local people do not get much in return. ACAP people earn at least 20,000 rupees a month, but most earn around 40,000 rupees. Normal government officers earn a minimum of 10,000 rupees but most earn around 15,000 rupees. A normal wage in Nepal is 10,000 rupees. ACAP prohibits many things for us but give little in return; it is just an employment scheme for people elsewhere from Nepal. ACAP does not employ local people either, it is people from Kathmandu and Pokhara telling us what we can and cannot do. Most new trees in the area are planted by people from Kagbeni, not by ACAP."

Textbox 4.4: Forest regulation & ACAP

The vast majority of households in the research sample both produced and purchased their food. Nine households purchased all their food, and two, both lamas, received all their food as a gift. The most frequently purchased food items were: rice, sugar, tea, and salt. A Chi-squared and Cramér's V test revealed a strong connection between being not originally from Kagbeni and purchasing all food products¹⁵. This result is not surprising considering earlier test results showing those from non-original households generally do not grow crops themselves.

Fourteen households indicated there were sometimes problems obtaining enough food. There is no significant difference between origin and having food problems. The cause of food problems, however, is debatable and households gave conflicting reasons. Some said the road made food more expensive, others say it is only a problem when the road is dangerous. Many said the road is improving food security as availability and importing food is more stable and cheaper than before. Several prominent villagers say people in the village are just getting lazy and therefore have not enough food.

Food problems are not related to a household saving crops or seeds for the next year. In total seventeen households saved crops, and sixteen households saved seeds. There is a strong relation between saving crops¹⁶ and seeds¹⁷ and being originally from Kagbeni or not. However as stated

¹⁵ $X^2=17.767$ & $\alpha=0.000$, and Cramér's V = 0.768

¹⁶ $X^2=19.201$ & $\alpha=0.000$, and Cramér's V = 0.800

¹⁷ $X^2=15.922$ & $\alpha=0.000$, and Cramér's V = 0.729

previously in this paragraph, this is linked to non-originals not growing their own crops due to them not owning land.

4.1.5 Current and Future Problems

Water is of great importance for livelihoods anywhere in the world. The people of Kagbeni also have their own history to remind them how important water is. Some four centuries ago, the entire village was located higher up the Jhong Khola River. Currently the village sits on the junction where the Jhong Khola runs into the Kali Gandaki River. The village moved to this place because the plateau at this junction ensures the water being on the same level as the village. Figure 4.17 shows the previous location of the village. The mountain in the background was once covered in perpetual snow. The melt



Figure 4.17: Previous location of Kagbeni©

water of that glacier was the lifeline for the village, as water could not be retrieved from the Jhong Khola River running at the bottom. The people in the region did not have a system to pump up water, so irrigation was not possible using the water of the river below. Currently, the village does not use water from the Kali Gandaki for the same reason; the lack of a pumping system. Four hundred years ago global climate change made the snow disappear, and with it the village. The Annapurna glaciers feed the current Jhong Khola River. This tributary is the melt water coming down from the Thorong-La pass and runs through the Muktinath valley, to end in the Kali Gandaki River at Kagbeni village.

Kagbeni uses the Jhong Khola for irrigation water; however, there is a separate source for drinking water. People in the village indicated no major problems with

irrigation water. Irrigation stops during winter, and starts once the snow is starting to melt. Figure 4.18, on the next page, shows some irrigation systems in the Jhong Khola. During the focus groups it became clear that most people would like to see more water during spring, but from May until the end of autumn there is plenty irrigation water. However, that is also the time when problems concerning drinking water begin. In general, people indicated that the source currently used for drinking water is slowly drying up.

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This process is speeded by the amount of water tourists' use. In paragraph 4.1.3, it was already noted that there are plans for opening a new drinking water source to cope with this problem. An ever-returning problem is coming of May, when the melt water of the Jhong Khola dilutes the drinking water. This diluting creates yellowish muddy water, which needs to be filtered before it can be used. Only six households claimed they had no problem with their drinking water. Of the remaining 24 households, fourteen indicated that muddy water during rainy season was the problem. One person only had drinking water problems during winter when the pipelines would freeze, and eight households had problems during both the rainy season and winter. There is no connection between origin and problems with drinking water. Drinking water is a concern for the entire village, though for some even more problematic than for others. There are eight public taps in the village, built by the NGO Care. However, due to the increasingly limited water availability, there is not enough water pressure for the water to reach the taps at the end of the village. Some houses that are at the end of the water line, had to make a cooperative and invest much money in building extra pipelines to ensure their water supply.

Twelve households had large storage tanks on their roof for storing extra water. Storage tanks are also a coping mechanism for the muddy water during rainy season. Of the households indicating drinking water issues, seven used sediment sinking to cope with the problem. Two of these households specifically said they used the storage tanks. The other five used buckets. Five households would filter their water, and another five would use the water from the Kali Gandaki. As said before, the villagers do not usually use the water from the Kali Gandaki River, as the village is towering over the river on a plateau. Making it a laborious task to retrieve water from the river for which most households do not have time for.



Figure 4.18: Irrigation works in the Jhong Khola. Picture on the right-bottom shows the Thorong-La pass in the background. ©

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When asked about current problems other than drinking water, education, income and food were often mentioned. Some said they had not had enough education themselves, or hardly had enough money for educating their children. An unstable and or too small income is often a problem, and some indicated a bad health as a current problem. The latter is often contributed to the local climate; a hard wind blows through the Kali Gandaki valley every day, carrying a lot of dust. It is also very cold and dry in the mountains. Fifteen people said that they do not have any major problems at that moment, not counting water issues. Four households dealt with one problem, eight households indicated two problems, two households had three different problems, and one household had four problems. Statistical tests did not indicate a difference in problems between people originally from Kagbeni and those not originally from the village.

As can be seen in figure 4.19 drinking water, food and income are the main future problems indicated by the research sample. Seven households did not foresee any future problems; another seven saw one future problem. Two households feared a maximum of six different future problems, but on average people in the village anticipated 2.1 problems in the future. There is no statistically significant difference in the number of future problems and the origin of the household.

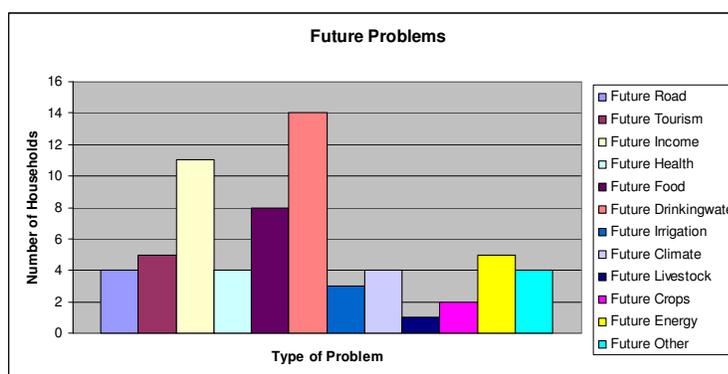


Figure 4.19: Future problems according to households

4.2 Living in Kagbeni: geographic flows

Its geographic location and the external relations this location allows or prevents determine a large part of daily life in Kagbeni. The village is on the border between lower and upper Mustang, on the trekking trail from- and the pilgrim's route to Muktinath. Throughout history, the village has been one of traders; traders from and to Tibet and India. This section holds paragraphs each containing an external relation; every paragraph begins with the figure first shown in paragraph 3.2.2. This figure will serve as a visual representation of which geographic flow is discussed in the paragraph. Furthermore, each external relation also contains a figure showing what flows there are between the two geographies. These flows are grouped in:

- Human flows
- ✓ Money flows
- ❖ Food product flows
- Animal product flows
- Construction material flows
- Other material flows

The figures showing the external relation and what that relation consists of, is followed by an explanation why certain flows enter and exit the village.

4.2.1 Kagbeni Village & Kagbeni VDC

The first external relation is that between Kagbeni village and the other villages in Kagbeni VDC. As aforementioned, these villages are: Ekle-Bathi, Tiri, Sangta, Falek, Pagling and Dagarjhong.

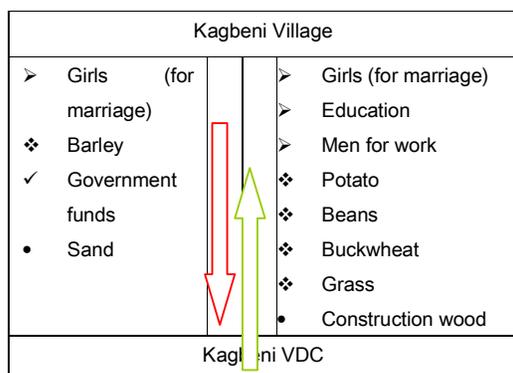
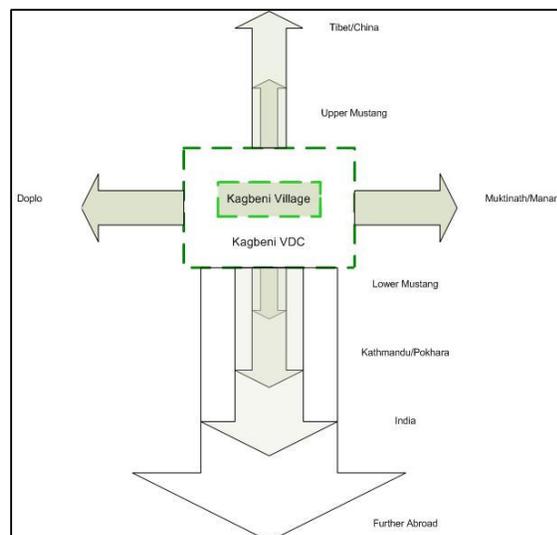


Figure 4.20: Geographic Flows Kagbeni-VDC



As chief village, Kagbeni receives government funds, which are to be distributed amongst all villages in the VDC. Furthermore, Kagbeni exports sand due to its advantageous location next to the Kali Gandaki River, which carries much debris, gravel, and sand from higher areas. Most other villages in the VDC are located further from the river, or have less easy access to it.

Food is imported due to the tourist sector in the village. Tourists eat, on average, much more than local people and pay much more. Therefore, Kagbeni does not usually trade food with the surrounding villages as they can get much more money for their goods by selling it to tourists in the village itself. The other villages in the VDC sell food to people in Kagbeni who cannot afford the local prices anymore.

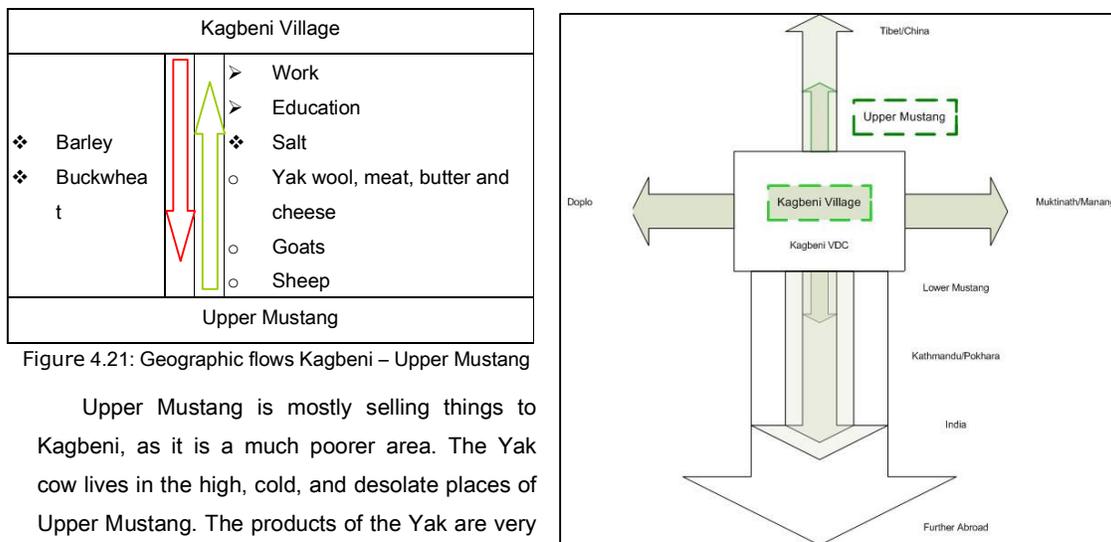
In Kagbeni, there is a huge shortage of wood and grass therefore this is imported too. People in Kagbeni have access to a forest behind Tiri village; this forest is connected to a forest behind Dagarjhong and Pagling. It is more than four hours walking, one way, thus is a time saving option to trade wood with other villages in the VDC. This wood is fuel wood, not construction wood.

Many children from the surrounding villages come for education to Kagbeni. As most of these children would have to walk too far everyday there are hostels on the school terrain, and many of these children only go home during the holidays. Most children that are going to school in Kagbeni come from the other villages in the VDC.

Last in the external relation; the exchange of girls for marriage purposes. Paragraph 4.1.1 already explained that the tradition concerning the search for a wedding partner is changing as the village is becoming more modern. Nowadays it is ever more frequent that people marry by own choice and out of love. As people in the surrounding villages are also Bhote Tibetans, there are quite some marriage exchanges. It hardly ever occurs that someone marries someone from another community. For example marrying a Thakoli from Jomsom, or Hindus from even further away like Kathmandu.

4.2.2 Flows to the North

Kagbeni village is the border town to the restricted area of Upper Mustang. This area is only restricted for foreigners, not for Nepali people. People in Upper Mustang still live traditional lives with no electricity and no road connecting it to the rest of the country. This latter part is about to change as currently the road from Pokhara to Kagbeni is going to be extended to connect with Lo-Manthang, the capital of Upper Mustang. The Chinese government has already constructed a road from Tibet to Lo-Manthang, and the two roads are planned to be connected within three years. One teacher in Kagbeni village, who is from Upper Mustang, fears for this moment because he thinks it will cause great damage to the local culture. However, at the time of research the trade between Kagbeni and Upper Mustang was much as it had been for many years, see figure 4.21.



Upper Mustang is mostly selling things to Kagbeni, as it is a much poorer area. The Yak cow lives in the high, cold, and desolate places of Upper Mustang. The products of the Yak are very important for livelihoods in Kagbeni and other people living in the high mountains. The wool is not appropriate for clothing as it is too rough and harsh. However, the wool is nearly weatherproof and is very insulating. The outer wool is used for making tents, and the inner wool is used for blankets. The butter and cheese from the yak stay good for many months, which is useful during the winter months when it is too cold and there is too much snow to travel elsewhere. The meat is dried; therefore, this also lasts for months. Chewing on dried yak meat gives a real energy boost. There is also an ancient festival annually in the local Bhoté culture entailing rituals and ceremonies using the Yak cow.

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Figure 4.22: Tourist checking point for Upper Mustang in Kagbeni©

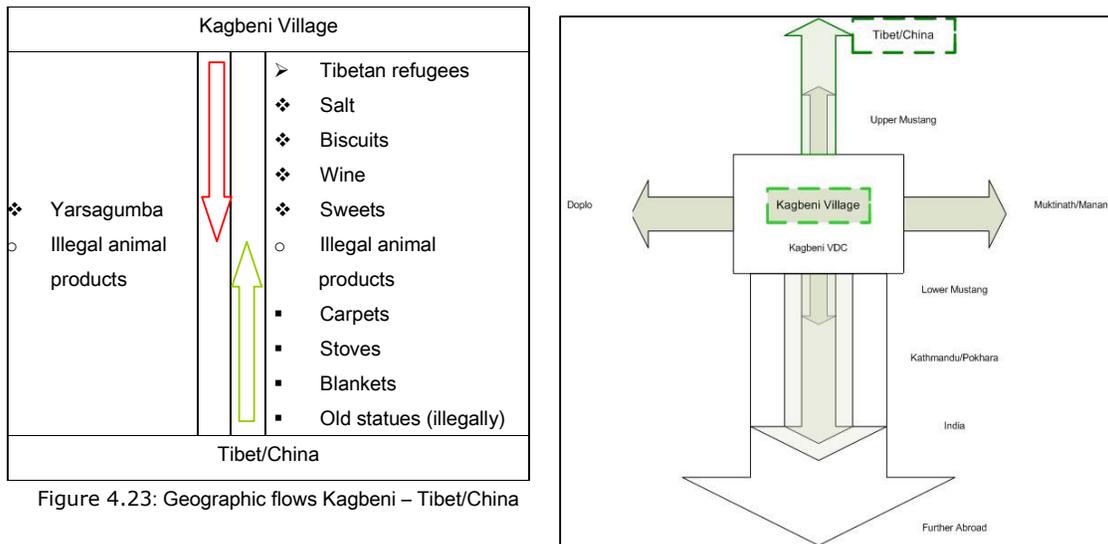


Figure 4.23: Geographic flows Kagbeni – Tibet/China

As explained in previous chapters there was a huge trading route from Tibet through the Kali Gandaki Valley to Pokhara, with Tibetan salt as main commodity going southwards. Despite political problems, Tibetan salt is still traded much across the border, see figure 4.23. The Chinese government strictly regulates trade; nevertheless, it is a vast improvement from the time when the border was completely closed-off and extremely dangerous to cross.

Tibetan salt is still important in Kagbeni because it is used to make Tibetan tea, a traditional drink containing salt and Yak butter. Together with the old statues and illegal animal products salt is a remnant of the ancient trading route. The consequences of the road the Chinese constructed to Lo-Manthang are evident in the Chinese stoves, sweets, wines, blankets, carpets en biscuits that are now

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finding their way to Kagbeni. Reversely there is an increased interest from the Chinese side in illegal animal products and in Yarsagumba. Yarsagumba is the rare unification of a fungi and a caterpillar. It is an herb and can only be found in some places, not cultivated. Yarsagumba is also called the 'Viagra of the Himalaya', which is the reason why it is so popular in China. Its popularity has caused some problems with people coming from other places in Nepal to look for the herb to make some good money. A villager recalled an incident in neighbouring Dolpo district a year before where thirteen people got killed in a row about illegal Yarsagumba harvesting. Picking Yarsagumba used to be a traditional local form of income, but the Chinese interest is making it a lucrative business attracting young men from across the country. This causes tension between locals who fear a demise in income and aliens who also want a share of the profit.

An other, rather gloomy, geographic flow is that of Tibetan refugees. As discussed in chapter two, Upper Mustang was the scene of a secret war of Tibetans against the Chinese after the Annexation of Tibet in the fifties of the twentieth century. In the caves around Kagbeni, many Tibetans would seek refuge. Even today, many Tibetans cross the border into Mustang, at great risk, with the goal of settling in Nepal or India. There are stories that Chinese border troops strictly check all trade between Tibet and Mustang, people who illegally try to cross the border are shot without questioning. Tibetans who manage to cross the border do usually not stay in Mustang. There are large Tibetan refugee camps in Pokhara and Katmandu.

4.2.3 Flows to the South

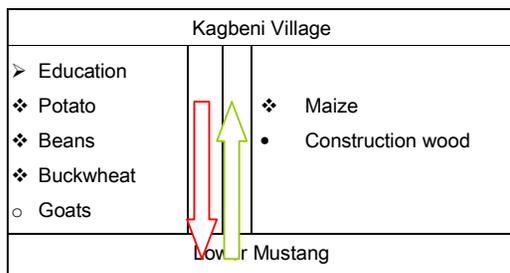
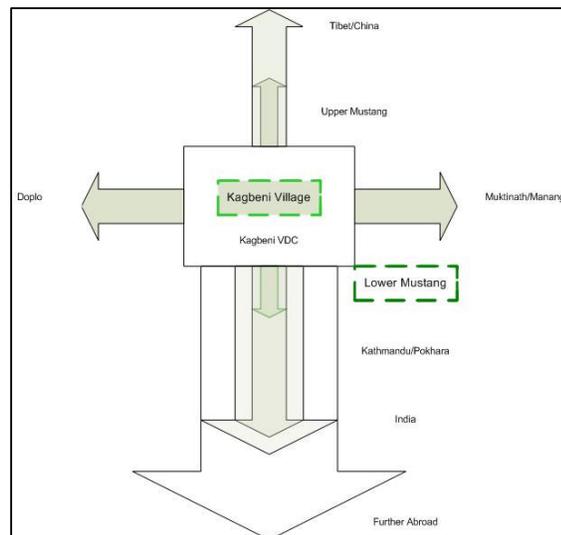


Figure 4.24: Geographic flows Kagbeni – Lower Mustang

There are not many geographic flows between Kagbeni and lower Mustang, as can be seen in figure 4.24. Perhaps this is linked to the difference in culture, Lower Mustang being Hindu with a Takholi population.

Kagbeni transports food to the market in Jomsom, this market again trades food with Pokhara. Food prices are much higher in Pokhara; therefore, Kagbeni people get more money for their products there than at the Kagbeni market. Higher Secondary education is also located in Jomsom, thus many schoolchildren enjoy education there.

Imported from Lower Mustang is maize, which does not grow very well in cold Kagbeni, and construction wood. The latter is becoming more problematic, as explained by Dara's complaint about ACAP (textbox 4.4, paragraph 4.1.2.4). The wood grown in the Tiri forest is not strong enough to be used as construction wood.



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Geographic flows between the big cities of Nepal and Kagbeni are more impressive, see figure 4.25.

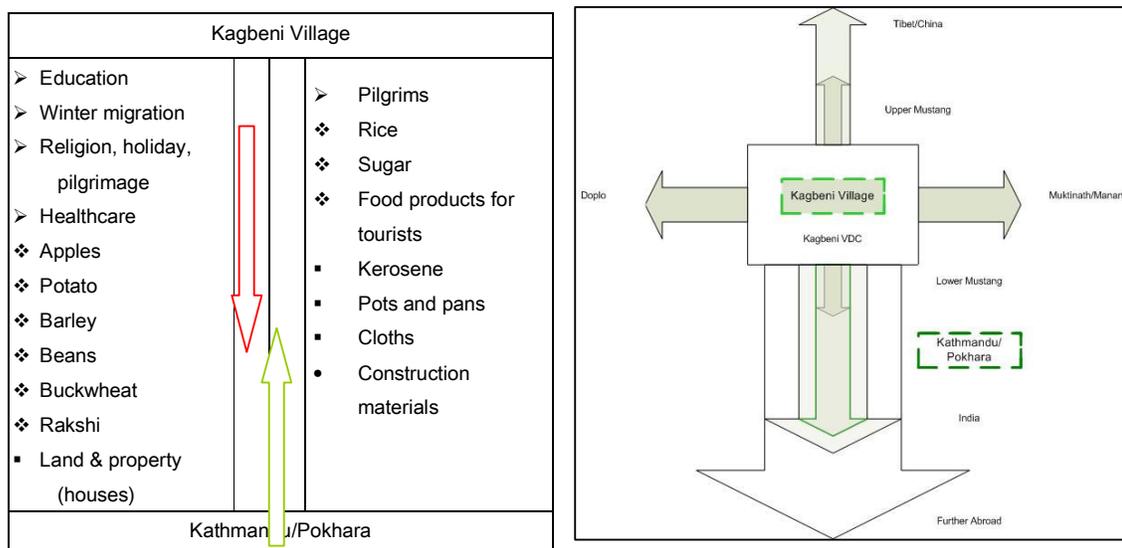


Figure 4.25: Geographic flows Kagbeni – Kathmandu/Pokhara

During the interviews, many people complained that the intermediaries at the Jomsom market were cheaters. This explains why some people take the trouble of bringing their food products directly to Pokhara, where they get a better price. Rakshi is a local drink made from barley; this is also made in other places in Mustang.

The other flows from Kagbeni are more long term. As mentioned in paragraph 4.1.1, the wealthier people in Kagbeni send their children to the better schools in Kathmandu or Pokhara. In the village, there is a health post, though not many seemed to trust it. For real medical issues people go to the hospital in Pokhara. Winter migration is a very common form of lifestyle. During the winter months, the school is closed and the overwhelming majority of villagers temporarily migrate south. One or two people per household are left behind to look after the house and cattle. The reason behind this is that there is hardly any food during winter and it is too cold to be doing anything productive like working the land. Due to these migration movements, some people own property in Kathmandu or Pokhara. Other reasons for Kagbeni villagers to travel south are pilgrimages to holy Buddhist sites like the Boudhanath Temple in Kathmandu, and Lumbini the birthplace of Buddha.

Kerosene and different food products have come from Pokhara since a long time. What has changed is that it used to arrive on donkey caravan, and nowadays it arrives on jeeps, busses, and trucks, due to the road. With these vehicles come also heavy construction materials and ever more pilgrims that are domestic.



Figure 4.26: Boudhanath Temple in Kathmandu©

4.2.4 Flows to East and West

Due to Kagbeni's location in a valley that runs from north to south, there are not many geographic flows from east to west. However, beginning with Dolpo district, in the west, there is figure 4.27.

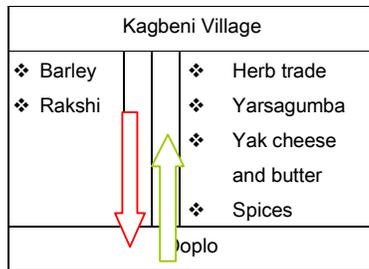


Figure 4.27: Geographic flows Kagbeni – Dolpo

Dolpo is hard to reach due to the Dhaulagiri mountain range. This district has seen hardly any modernization thus far which is reflected in its trade products. Yarsagumba is much found in this area and is at times a main source of income, but also a source of conflict as mentioned previously.

Going to the east there is more activity (figure 4.28), mainly because Muktinath is easy to reach. The same cannot be said of Manang, which is only accessible using the very steep Thorong-La pass, but people do this sometimes.

Muktinath is a very important pilgrimage destination for both Hindus and Buddhist. Pilgrims first go to Kagbeni to bathe themselves in the holy Kali Gandaki, and then go to the temples of Muktinath for two hours of praying. After that, they go home, travelling two days, praying two hours.

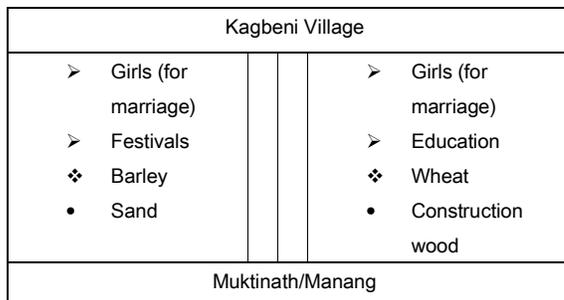
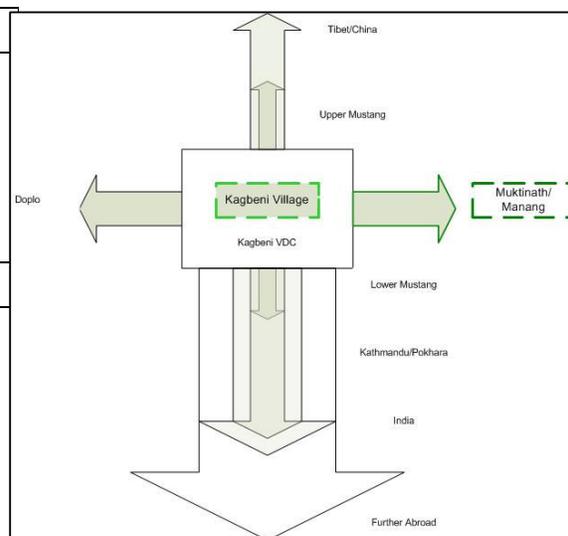
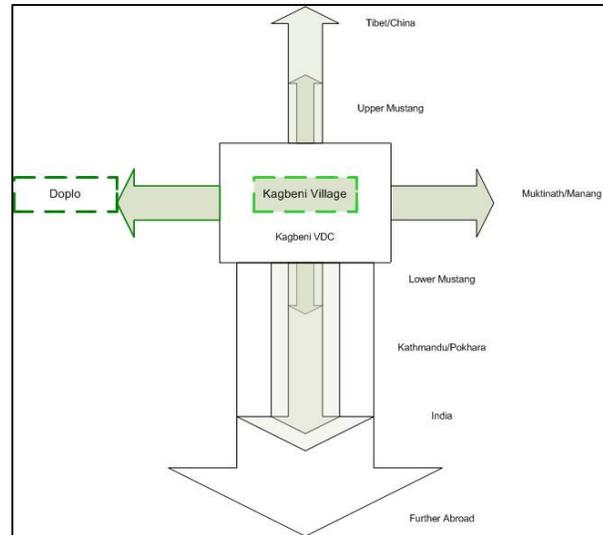


Figure 4.28: Geographic flows Kagbeni – Muktinath/Manang

Muktinath is right beneath the Thorong-La pass, therefore there is no sand, only rock. Having a good relationship between the two places is important, but not guaranteed, as textbox 4.5 shows. Figure 4.29 shows the Thorong-La pass and the village Muktinath.



Dara's Stories: At War with Muktinath

Phalek, Tiri and Kagbeni share the same land. The borders of this area are known on the other side of the Kali Gandaki, which is on the other side of Kagbeni. On the Kagbeni side of the Kali Gandaki the exact borders have been disputed for a very long time. Seven years ago people from Kagbeni build a centre on the route to Muktinath for pilgrims to have some food and drinks for on the way. We brought water supply from Kagbeni to the centre. But people from Muktinath were furious, saying we build it on their land, which we dispute. In the middle of the night they destroyed our centre, and we went there to throw rocks at them using catapults. This war went on for almost two years in which we completely boycotted each other, but pilgrims and tourists never noticed a thing. We did not supply any sand to Muktinath anymore so they have to get it from Jomsom and transport via Lupre, which is a much more difficult road than via Ekle Bathi. Relatives from the different towns would not invite each other over for drinks and food anymore. One of the worst things was that they would not give us the holy fire for cremations anymore. We had to create our own special fire in our own monastery to use for cremations in the future. In the end we went to Jomsom to settle the dispute. There it was finally decided, more like a compromise, that this whole area (that is known as the Muktinath Valley) is Annapurna Conservation area and that borders are to remain a status quo and land use cannot be changed anyway. No new things can be built without ACAP's approval. This is a big shame as there are some plateaus suitable for irrigation and farming, instead we have to look for areas further away (like the apple farm behind Tiri village).

Textbox 4.5: Dispute between Kagbeni and Muktinath.

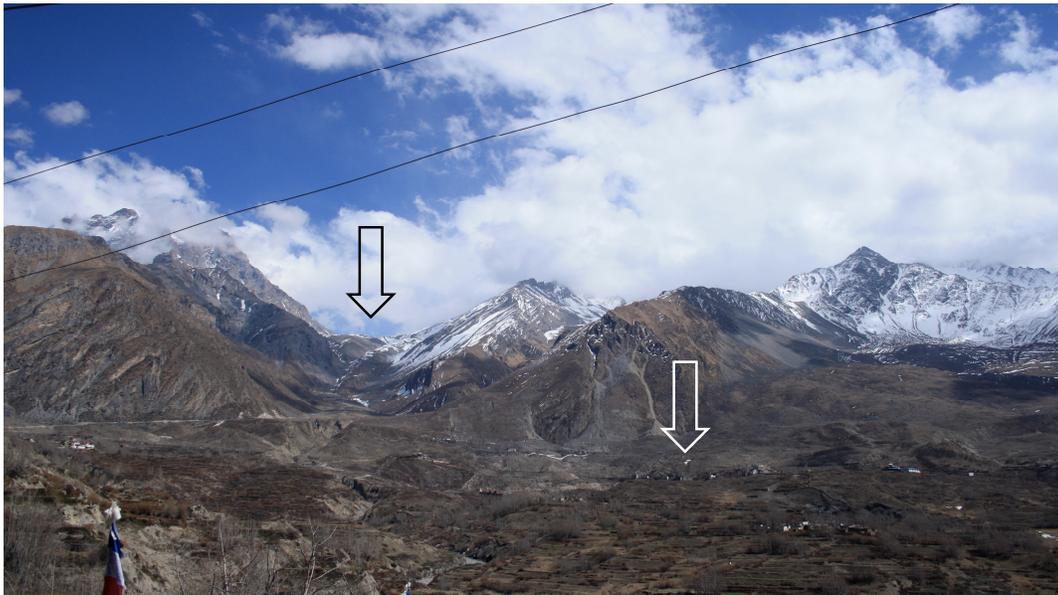


Figure 4.29: The Thorong La pass ↓ descending to Muktinath village ↓ and the Muktinath valley©

4.2.5 Flows Abroad

Being a small village in the High Himalayas' will not make large international flows likely. However, as for the rest of Nepal, India (figure 4.30) is not really considered to be a foreign country.

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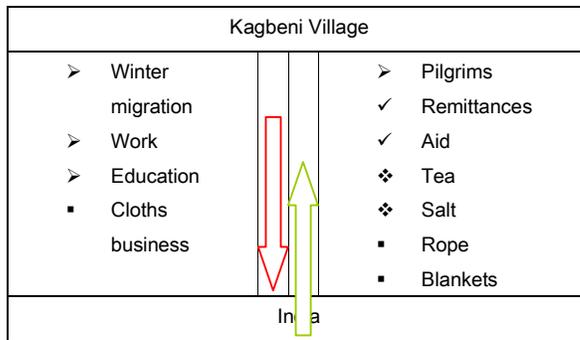
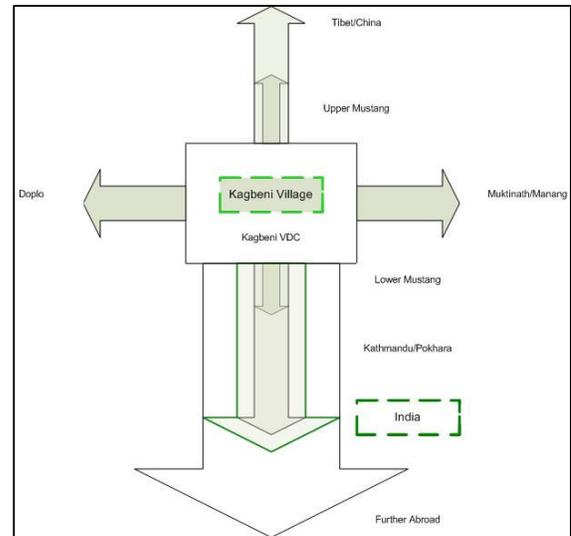


Figure 4.30: Geographic flows Kagbeni – India

For Nepali people, travelling to India is very easy and is often done for pilgrimages or to spend the winter months. The same goes for villagers in Kagbeni. Some spend the winter working in the Indian textiles business; others go more permanently for education, for example.

Kagbeni people in India send back remittances or the fruits of their labour: blankets. People staying in India for the winter are more like to send back money than those staying the winter in Kathmandu or Pokhara. The reason is those staying in Nepal live with relatives or friends, and generally do not manage to find a job that would pay more than the cost of living. In India people can make enough money during the winter months to send some home. Amongst some other food products, salt is also send from India, see textbox 4.6. Many Hindu pilgrims and some aid are also travelling from India. An Indian NGO has built a library on the school grounds, and a Christian NGO, also from India, gave some awareness classes.

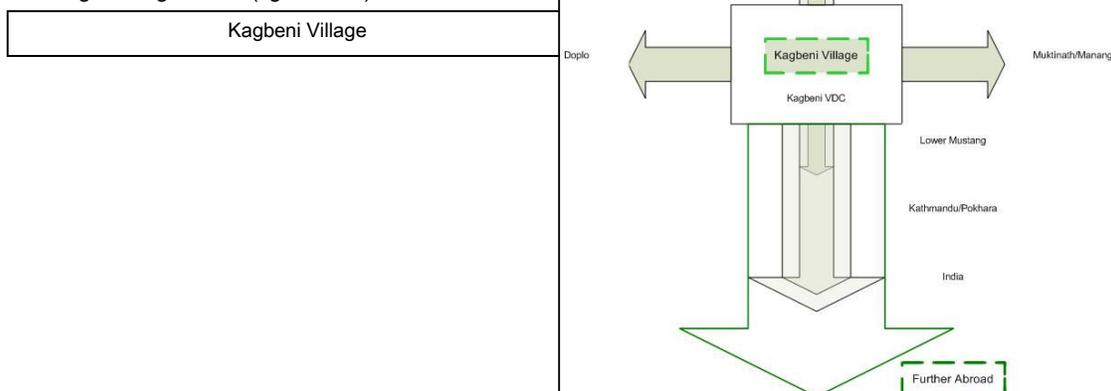


Tibetan salt versus Indian Salt

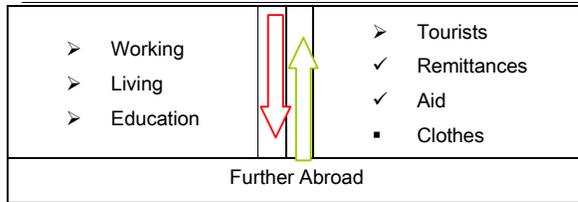
23-03-2011 Prominent villager, Kagbeni:
 “From the government we get five kilograms of Indian salt per person per year. This salt contains iodine, which is healthy for you. If we want to buy extra it costs ten to fifteen rupees per kilogram. We still use Tibetan salt; its flavour is better for making Tibetan tea.”

Textbox 4.6: Tibetan & Indian salt

Going further abroad than India, the geographic flows are largely limited to the trekking tourists, some NGOs, and the very rare occasion of a villager living abroad (figure 4.31).



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4.3 Conclusion

The first part of this chapter discussed the life of villagers in Kagbeni. It described the marriage culture, the importance of religion to families, migration, education, income, and the things troubling villagers currently and in the future. The aim of this part was to answer the sub-question:

- *What are local sources of influence on adaptive capacity within the village of Kagbeni?*

By using qualitative and quantitative data, it became clear there are many traditions in the local culture that improve adaptive capacity. In Kagbeni, life does not seem to be very easy, yet manageable. The landscape is particularly difficult to live in; fertile land and water are rare. Historically Buddhism and an old marriage tradition have kept the population small, as the land cannot sustain a large population. Nowadays, food security is made easier because importing food has become easier. The village immediately reacts to this by changing their ancient coping mechanism or adaptive capacity and bigamy and arranged marriages are becoming rare.

The onset of modernity in the village creates a diversification in livelihoods. People realise that the old way of being high-mountain agro-pastoralists is not the only way anymore, and respond by sending their children to school. Nearly all parents understand the importance of a good education and want the best they can afford for their children. These new modern influences are also stimulating entrepreneurial initiatives in the village. A prime example of this are the plans for creating a new large farm for the exportation of apples to other areas in Nepal or the rest of the world, as some were dreaming about.

The traditional winter migration lifestyle appears to be continuing, mainly because it is linked to the climate rather than being solely a matter of traditional versus modern lifestyles'. This form of migration is still needed to adapt to the harsh mountain living conditions. Modernity has increased mobility of the population, with more people permanently migrating.

Of current and future problems, water is the main issue, and the main threat to adaptive capacity in the village. The history of the village has shown that without a proper source for drinking water the village cannot exist. However, the plans for creating a new pipeline that would secure drinking water in the future require a large investment and engineering expertise that does not exist in the village. The Nepali government and foreign NGOs could help circumvent this threat and allow the village to remain where it is.

The second part of this chapter discussed external relations and geographical flows, the sub-question is tried to answer was this:

- *What are other external sources of influence on the culture and adaptive capacity of villagers in Kagbeni?*

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This part made clear that Kagbeni is for a large part dependent on its relations with outside localities, much of its income is derived from it. The village has never been isolated or cut-off from the rest of the world, but the way the village is connected has changed and has made an impact on the adaptive capacity of the village. This latter aspect is further discussed in the following chapter.

CHAPTER V - The Influence of Climate Change, the New Road & Tourism on Kagbeni village

This chapter will discuss the influences that climate change, the new road, and tourism have on the village of Kagbeni. These three topics are individually analysed in separate sections. This chapter will also seek to find if the three topics influence adaptive capacity in the village as formulated in three sub-questions:

- What is the influence of climate change on Kagbeni, and the village's adaptive capacity?
- What is the influence of the newly constructed road on Kagbeni, and the village's adaptive capacity?
- What is the influence of tourism on Kagbeni, and the village's adaptive capacity?

5.1 Climate Change

The climate has always been very important and decisive for people living in Kagbeni. The dry land climate creates cold winters and short summers. The high mountain ranges of the Annapurna's and Dhaulagiri form a rain shadow, and the high mountains create highly local climates that could differ greatly over small areas. The weather data used in this section is derived from the meteorological station in Jomsom. Despite being only about eight kilometres away, the climate in Jomsom could differ from that in Kagbeni, due to its location lower and on the left-hand side of the Kali Gandaki gorge (see figure: 5.1). This creates some flaws in describing the actual climate in Kagbeni; however, this will not change much in terms of climatological trends in the area.



Figure 5.1: Difference in location in the Kali Gandaki gorge of Jomsom and Kagbeni. Source: google.com/maps

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Different problems with climate change are the perceptions of people. Villagers were asked about how the climate of the last five years compares to the climate of before, and people gave very conflicting answers. Furthermore, it became clear that people did not understand all questions properly leading to people describing big events that had happened many years ago. Nevertheless, this section will try to answer the following question by using data of the years 2005-2010:

- What is the influence of climate change on Kagbeni, and the village's adaptive capacity?

5.1.1 People's Perception versus Weather Data

Villagers in the research sample were asked if they had noticed a difference in: snowfall, rainfall, temperature, the amount of water in the Jhong Khola River, the amount of water in the Kali Gandaki River, if the wind has been changing, and if there had been any extreme events. Extreme events are defined as wildfires, droughts, storms, extreme temperatures, excessive rain/snowfall, flooding, insect outbreaks, and disease outbreaks.

5.1.1.1 Precipitation

In terms of precipitation, 27 percent of villagers indicated no change in snowfall and 73 percent believed there was less snowfall over the last five years. Rainfall showed a different image with 53 percent not believe there was a change in rainfall, 40 percent believed there was less rain and seven percent believed more rain had fallen over the last five years. The data from the weather station in Jomsom contradicts the general perception that there was less precipitation. The weather station combines snowfall and rainfall in one statistic, the result can be seen in figure 5.2.

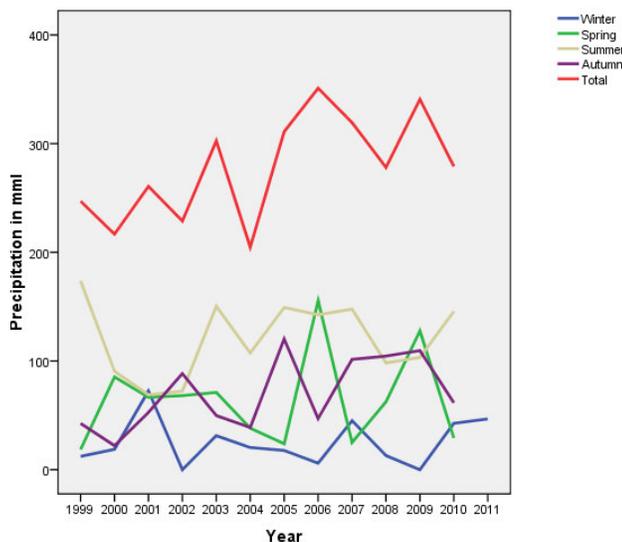


Figure 5.2: Precipitation data from Jomsom

Villagers indicated that normally the village hardly sees any rain on a yearly basis, and that most of the precipitation comes from snowfall during winter months. There are some arguments for this little rain comment. As mentioned before the village is located in a rain shadow, which is evident when looking at the desert like area. An other indication that there usually does not fall much rain is the construction of roofs in the village. The roofs are flat and made of mud and animal manure; this combination is not effective in the drainage of water.

In the bottom of the figure are the precipitation levels per season over the years 1999 until the winter of 2011. The red line at the top shows the yearly precipitation in Jomsom, and seems to indicate that overall precipitation is slightly increasing. Furthermore, it is evident that most precipitation falls during summer, with winter being a dry season. This is consistent with the Nepali climate of a rainy season during the summer months, but it is not consistent with the stories of villagers in Kagbeni.

Villagers indicated that normally

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During the research, there were some showers, which the villagers considered unique heavy rainfall; the result of this rainfall was immediately noticeable by the leaking of the roof. The houses in the village generally do not have guttering and are not built for draining large quantities of water. Both for their roofs as for the barren land surrounding the village, villagers prefer snow above rainfall. During a focus group people explained that snowfall is better than rainfall, because snow stays longer on the ground keeping it moist, whereas rain drains away immediately to lower lying land. During the focus group with the elderly villagers, it was claimed that heavy snowfall in winter creates good grass for the rest of the year. Furthermore, they claimed that there has not been good snowfall during the last few years and the lack of grass was starting to become problematic for their livestock.

5.1.1.2 The rivers

The most important river for the people of Kagbeni is the Jhong Khola, which runs straight through the village and provides irrigation water. As explained the previous chapter the village towers over the Kali Gandaki River, see figure 5.3, and cannot properly use the water from this river. There is no data available concerning the discharge of these rivers over periods of time. Therefore, this paragraph will only consider the perception of the villagers concerning these rivers.



Figure 5.3: Kagbeni towering over Kali Gandaki River

Of the people in the research sample, 80 percent saw no difference in the size of the Jhong Khola River, and 63 percent did not believe anything was different with the Kali Gandaki. Twenty percent believed the Jhong Khola was discharging less water, against 33 percent believing there was less water running through the Kali Gandaki. One person believed there was more water in the Kali Gandaki. This person, a teacher who lived for over nine years in the village, believed that people claiming there was less water in the Kali Gandaki were confused with a flooding that happened many years ago. He explained that a GLOF (Glacial Lake Outburst Flood) occurred several years ago (different people gave different timelines), that during this flooding the river was so large that plots of land were washed away, and six people drowned. Compared to that event the river seems small, however, he believed that the river was slowly increasing with more melt water.

5.1.1.3 Temperature, Wind & Extreme Events

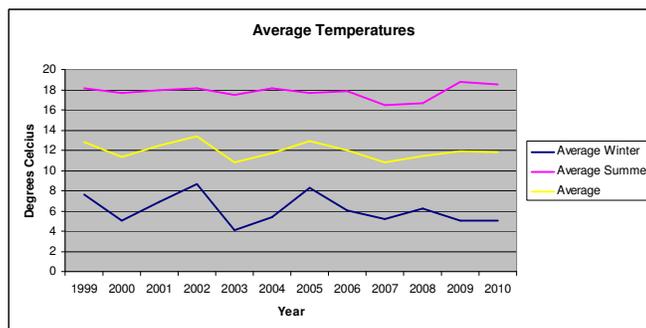


Figure 5.4: Average temperatures at Jomsom

In the village, 57 percent of people distinguished no difference in temperature, and 43 percent of people thought it had become warmer. Figure 5.4 shows the average temperatures between 1999 and 2010. There are no trend distinguishable indicating warmer

temperatures. However, the last few

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summers have been warmer than before, and the yearly average has increased a little.

There was no data available at the weather station in Jomsom about wind power and extreme events in the area. Around two thirds of the people in Kagbeni indicated no change in wind power. Three percent believe the wind has become more irregular and 30 percent believes there is more wind than

Events	Households	Percent
0	23	72
Drought	1	3
Storms	3	9
Precipitation	1	3
Flooding	2	6
Insects	2	6
Total	32	100

Table 5.1: Extreme weather events experienced by number and percentage of households

before. A great majority of people claimed there were no extreme events over the last five years, see table 5.1. It is rather curious, however, that some do recall extreme events where others do not. Events like drought, storms, and excessive precipitation are very subjected to perspective and memory. Two people recalling a flooding were probably talking about the GLOF that happened more than five years ago. The two persons claiming there were insect outbursts was a woman with some plots of land, and the same teachers who believed there was more water in the Kali Gandaki River. The woman said there were more insects than before but not so many that they were a pest, she said the main problem was the villagers are not allowed using pesticides. The teacher believed there is definitely something changing in the climate. He believed there are more insects, but also claimed there was a new specie of birds in the area never seen before since a few years. The focus group of elderly villagers also mentioned this new bird specie. The teacher further mentioned that the rise in apple farms is also an indication of a changing climate. Twenty years ago, the climate around Lete and other areas south of Jomsom were very suitable for apple farming. Nowadays apple farms are not seen much in that area and are instead found more north, so in the area of Kagbeni and further into Upper Mustang. Some of the other teachers agreed with him and were a bit wary of the new entrepreneurial interest in apple farms in the area; fearing that in a few years time the investments will go to waste due to the changing climate.

5.1.2 The Effects of Climate

The possible changing of a climate does not have to be a problem per se. Climate change will only be a problem if it is affecting the adaptive capacity of those who experience it on a daily basis. The end of the previous paragraph is an example of how climate change could affect the lives of people by taking away a source of income which has been invested in. When people in the research sample indicated a change in climate, they were also asked if this change had an effect on their lives, and if it did how they were coping with this.

Of the people who did see a difference in snowfall, 32 percent did not think it affected them in any way. Of the remaining people who noticed a change, 41 percent said they suffered crop loss, and 27 percent said there was less grass, which was affecting their livestock. Less people responded to the possible effects of rainfall. A teacher said that rainfall itself was a relatively recent event, and within these short years rain was falling in the area, there had been even less rain in the last five years. This perhaps explains why only few people responded that less rainfall was somehow affecting their lives, as their lives were not accustomed to rainfall in the first place. Of all people who noticed a difference in rainfall, 64 percent did not think this affected their lives at all. Amongst the remaining people, 21 percent believed is affected their crops in a negative way, and fourteen percent saw increased desertification

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and less grass as a consequence. Coping with these effects of the changing snow- and rainfall does not appear to be too difficult for most respondents. Many said that it was not a big problem in Kagbeni because there is a good irrigation system in the village. Irrigation was the number one coping mechanism mentioned in the research sample. People also responded that this was a much bigger problem in surrounding villages like Tiri, which is not located next to a large spring and does not have an extensive irrigation system. Spending more time on collecting grass or buying grass from others counteracted the limited availability of grass. A lama mentioned that his way of coping was praying some more for his fellow villagers.

No one mentioned any effects of the possible changes in water run-off from the Jhong Khola River. It was a different story with the Kali Gandaki with many people saying it was positive that there was less water in it because that means no more plots of land could be washed away. These answers seem to suggest that a teacher was right about people talking about a GLOF happening many years ago when saying the river has less water in it. However, another teacher mentioned that it was negative that there was little water in the Kali Gandaki as the result was less fish, and less electricity from the hydro-electrical plant at Tukucho, farther down the river.

The majority of people who noticed a difference in temperature said it did not affect them, 58 percent. Some said it affected their crops, seventeen percent claimed their crops were negatively affected, whereas 25 percent claimed the opposite. Eight percent saw their health affected by the increase of insects, another eight percent only said there were new species in the village because of warmer temperatures. People who believed their crops to be positively affected by warmer temperatures said that crops were maturing faster; some crops even gained growing seasons having two instead of one cycle in a year. One respondent also said that apple did better in the new warmer climate and as a coping mechanism he said that he was going to invest more in apple trees. The people mentioning a crop loss due to the temperatures said in one instance that the problem could be solved using pesticides, but the village leaders forbid this. The other person said his problem was solved with extra irrigation.

Most of the people who mentioned a change in wind said it did not affect their lives, 64 percent. The remainder mentioned health problems because of the dust, and damage to apple trees if the wind was particularly ferocious late in the growing season. As can be expected, no one mentioned a coping mechanism for increased wind. Most affected by extreme weather events were crops and in particular apples. Nearly everyone mentioning an extreme weather event said either his or her land was washed away, or a storm/drought/excessive precipitation destroyed his or her crop or apple production. Half of these people also said it had affected their income, which would be especially true for those specialised in apple farming. Someone also mentioned that a drought had affected livestock due to the limited availability of grass. No one mentioned a coping mechanism for dealing with extreme events, which is not surprising, as one usually cannot prepare for such events.

5.1.3 Conclusion

The climate has great influence on the lives of people in Kagbeni because most people live off the land they till. It is a harsh climate to live in but the people have adapted to it. Currently, climate change seems to improve the life of people because villagers can invest in apple farming. However, there are many threats to the village. From talking to villagers it became clear that some years ago (some said

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fourteen- others 21 years ago) there was a GLOF hitting the village. Some buildings within the village are standing on the edge of a plateau above the river. Climate change could increase the chance of another GLOF hitting the village, potentially washing away sections of the village, aside doing damage to plots of land. The prophecy of the teachers also indicates a threat, and seems to hold a warning that people should not put everything on these recent positive climate changes. However, on the other hand, if people earn enough money with their apple farm they would increase their adaptive capacity, in case of a change for the worse. This would depend on whether people invest their money wisely.

5.2 The Road

In 2008, a road was finished that connected Pokhara with Muktinath, via Baglung and Beni in the south and Kagbeni in the north. This road follows the old trekking route from Tatopani upwards, see figure 5.5.

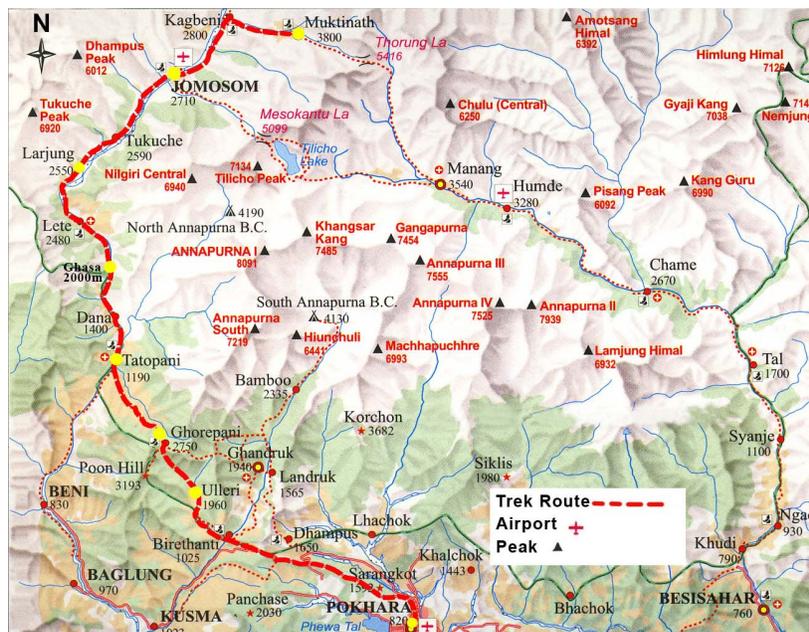


Figure 5.5: Road from Pokhara to Muktinath. Source: <http://www.explorehimalaya.com>

The road north of Beni is sand topped and it takes two days by bus to travel the whole route, though from Jomsom (Jomosom) onwards only a jeep service drives. Alternatives are travelling the whole route by jeep or motorcycle, and then the journey lasts one day. The other alternative is travelling by plane to Jomsom, which takes about half an hour, followed by a jeep ride to Kagbeni that takes about an hour, or it is two to three hours hiking. The popular Annapurna trekking route is a round trip going from Besisahar through Manang district, over the Thorong-La pass into Muktinath valley, and from Kagbeni downwards through the Kali Gandaki river valley. Without side trips and resting days, the whole route could be hiked in approximately fourteen days. Trekkers do not usually walk the other way around because the Thorong-La pass is too steep to ascend at the Muktinath side.

5.2.1 Changes brought by the road

The road has brought a great many changes to the village. Before the road, people would travel in donkey, mule and horse caravans and visit relatives and friends along the way. A villager explains:

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“Transportation is easier and cheaper now because of the road, but travelling is not nice anymore. Before we could enjoy the scenery and meet our friends along the route to Pokhara. Now we are in Pokhara in just one or two days, the landscapes are changing too fast and friendships are fading.” It took between seven and ten days of walking before the road was built. However, some people still prefer to walk instead of taking the bus. The reason for this is that although the transportation of goods has become cheaper, not everyone can afford the bus fares. Furthermore, many of the poorer people have never travelled in anything faster than on horseback and cannot get accustomed to bus movements and get motion sickness. Many villagers mentioned that it feels like the distance is less far away now, and some fear that Pokhara is getting too close: *“I am afraid that Kagbeni will become like Pokhara, with many jobless and cheating people. I do not like it that sometimes people come and go at night and no one in the village knows who they are and what they want or came to do here.”* These are all indications that the village is no longer an isolated place, and this seems to scare some villagers.

As mentioned earlier, transportation of goods to the village has become cheaper with the arrival of the road. *“Before when we relied on horse caravans it cost 50 rupees per kilogram to get something here from Pokhara, now it is only five rupees per kilogram.”* Many households mentioned that rice has become much cheaper. The consequences of this are that people in the village eat much more Dahl Bath, a traditional Nepali rice dish. In addition, they drink much more tea because sugar is cheaper.

The new road with its easier and cheaper transport also changed the architectural landscape in the village. The big trucks that are now able to reach the village are filled with more than just food products. From ancient times, houses in the village and entire region were built with materials that could be found in area. Mud, rock, wood, and twines were used for construction. Nowadays, the trucks bring iron, concrete and cement from Pokhara, drastically changing the look of the village, see figure 5.6.



Figure 5.6: Traditional lodge on the left, new built hotel on the right©

The road brings modernity in all its forms to the village. An ambulance is now capable of reaching the village in case of emergency. In addition, motorcycles are replacing horses as means of transport. However, one villager had a definite preference for using a horse above driving a motorcycle. *“I will never give up my horse for a motorcycle. When I’ve been out drinking it is very dangerous to drive a motorcycle. My horse, however, will bring me home safely even when I am too drunk to recognise my own house.”*

Although the village already has electricity for eight years, recently a TV cable and Internet have been added. Some of the wealthier families own a television now, and Internet café’s are cropping up in

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the village. Mobile phones are also becoming part of daily life in Kagbeni. More children are sent to school in Pokhara, though people indicated that, aside educational reasons, they did not travel more often to Pokhara. Of the research sample, only two households indicated that the road had not changed their lives. These two households were both not originally from Kagbeni, but the cell count was too low to make a significant statistical test.

5.2.2 Negatives and Positives about the Road

The road and the modernisation that comes with it have both positive and negative consequences for the households in the village. Table 5.2 gives a good indication of the opinions of households,

Origin households/ Influence road	Original	Not- Original	Total
No influence	0	2	2
Positive	4	4	8
Negative	3	2	5
Positive & negative	10	5	15
Total	17	13	30

Table 5.2: Origin of Household divided by perceived Influence of the road

divided by the origin of the household. Exactly half the amount of households in the research sample considers the influences of the road to be both positive and negative. Only five households think the road only has negative effects on their lives. Figure 5.7 is the result of a focus group on the positive and negative effects of the road.

As mentioned in the previous paragraph, the transport fares for products from Pokhara are much cheaper since the construction of the road. With the result that imported food has become much cheaper too. Moreover, trucks bring the products into the village nowadays, instead of undertaking the painstaking job of going on donkey caravans themselves. Furthermore, with Pokhara becoming relatively closer so does the Pokhara food market. Kagbeni prides itself with only growing organic food products and these products sell for a high price in Pokhara. Owning a TV, Internet, and mobile phones also increases the village connectivity with the rest of the country. This is making it easier for family members to stay in contact despite being many days' travelling away.

As mentioned in the previous paragraph, the transport fares for products from Pokhara are much cheaper since the construction of the road. With the

The Road	
Positive	Negative
<ul style="list-style-type: none"> -Transport fares are cheaper -Goods are brought to house, instead of carrying it themselves -Imported products are cheaper -Farmers get higher price for their organic crops -Travelling to other parts of Nepal is easier -Telephone, TV and internet -More domestic tourists 	<ul style="list-style-type: none"> -Travelling is not as nice anymore -Price of local food has increased -Destruction of some fields and trekking route -Smog, pollution, and more noise in the village -Local culture is changing -Less foreign tourists

Figure 5.7: Positive and Negative effects of the Road

Kagbeni and especially Muktinath are important pilgrimage places in both the Hindu and Buddhist religion. Pilgrims go to Kagbeni to bathe themselves where the Jhong Khola joins the holy Kali Gandaki, then the pilgrims go onwards to Muktinath for prayers and meditation. The numbers of these pilgrims have been vastly increasing since the road, which is evident in the large number of new built lodges in Kagbeni and Muktinath village. During the many festivals held at the temple complex, there are so many

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visitors that there are not enough hotel rooms. Pilgrims have to sleep on the floor in the hotel's dining rooms or stay at people's private homes. These visitors are all domestic tourists, although by Nepalese standards, Indian visitors are also considered domestic. The large difference between these domestic tourists and foreign tourists is, as described by a hotel owner, "*as far as income goes, ten domestic tourists equal one foreign tourist*". Although the road greatly increases the number of domestic tourists, the numbers of foreign tourists are sharply declining. Foreign tourists are visiting less frequent as the road has destroyed the trekking route, forcing hikers to walk along the dusty road, see figure 5.8.



Figure 5.8: Traffic on the dusty road between Muktinath and Kagbeni©

Many villagers complained that since the arrival of the road there has been much dust in the air. The road was at many parts blasted into a mountain wall and is not covered by tar or any other material.



Combined with the hard winds that sweep through the Kali Gandaki river valley, which is the climatologic result of the dry cold air from Tibet colliding with the warm moist air from India, dust is becoming somewhat of a health problem in the village. Until 2008 horses were the main means of transportation, therefore, it comes as no surprise that some villagers complain about the increased noise level coming from the road. Pollution is another complaint. Pollution mainly comes from wrapping paper and plastic bottles of the imported food products. There is no general waste management scheme in the village. Allegedly, one person is collecting all plastic, batteries, and tins. The plastic is burnt once a week, the batteries are buried, and the government collects the tins. Nevertheless, plastic and other garbage is scattered around the village, as can be seen in figure 5.9.

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The price of locally produced food is increasing. Villagers nowadays sell their food products mainly to the lodges and to traders from the Pokhara food market because they can pay higher prices. As pesticides are prohibited, the food can be sold as one hundred percent organic, generating an even higher price. This resulted in a general rise in price of locally produced food, leading to many villagers claiming that because of the road, the poor are getting poorer and the rich are getting richer. Statistical tests, however, could not reveal a connection between being indifferent or negative about the road and having certain, or more, current and future problems.

As with the increased food prices being both a negative and positive consequence of the road, the same goes for the introduction of TV, Internet, and mobile phones in the village. Especially some of the elder villagers see this as a threat to their culture. Because of TV and Internet, people and especially youngsters stay indoors much more, instead of gathering at a central place in the village. Most of the elderly people gather after all their work is done, for some company. Men sit together and gamble, while the women are spinning threads, knitting or begin preparations for dinner. While they are gathering, they often sing culturally important songs and tell traditional stories or myths. With the youngsters staying indoors, being occupied with TV programmes from elsewhere and surfing on the Internet, they do not get to learn some of these traditional songs and stories. The youngsters want to connect more with the outside-, and in their eyes, modern world. The elders are afraid that this will mean that their culture and traditions are disappearing. In addition, some elders worry about the money that is spent on mobile phones when there are still expensive problems inside the village that should have more priority. The latter refers to the problems with drinking water, but also to the fact that for serious health problems, villagers have to travel all the way to Pokhara for a good diagnosis and treatment.

5.2.3 Conclusion

The influence of the road on the village is well captured in this quote from one of the elder villagers: *“Overall, because of the road the rich are getting richer and the poor are getting poorer. The rich are able to do good business and profit from faster and cheaper means of transport. The poor are getting increasingly jobless and have more expenses at the same time. Food is becoming more expensive. Food used to be really cheap here in Kagbeni, but the prices are much higher in Pokhara. This is increasing the prices here, as it is easy now to bring your food to Pokhara and get a better price for it. But rice is cheaper than before”*. However, this story of increased social inequity might be a rather one-sided way of looking at the changes brought on by the road. One of the persons in the research sample was a Takori, a descendent of the old kings. However, even though he was proud of his origin, his current living conditions do not resemble much of his families' forlorn wealthy position. At the other end is Mr. Dara who was far from being a wealthy villager before the road. However, with clever entrepreneurial skills and good timing he is now probably one of the wealthiest men in the village. Once the road had been constructed, Dara immediately invested in a jeep company to provide a jeep service between Jomsom and Kagbeni/Muktinath. He also was the first in the village to build a hotel that could meet western standards, and thus is now one of the most successful hotels in the village. Thus, the other way of looking at it is that road creates great opportunities for those with an entrepreneurial mindset. The influence of the new road on adaptive capacity in Kagbeni is mostly positive with improving the life of most in the village. The increased connectivity and modernisation that comes with it improves the adaptive capacity of many by increasing incomes and creating diversification. However, some experience decreased adaptive capacity as they are at the losing end of increased social inequality.

5.3 Tourism

Tourists hiking the Annapurna trekking trail have long been a great source of income for the village. Conveniently, the trekking trail became increasingly popular as the salt trade with Tibet fell in disrepair (due to political circumstances) in the late fifties of the twentieth century, replacing one source of income with another.

5.3.1 Influence of Tourism on village life

The main influence tourism has on the village is being a source of income. Owning a lodge, or working in one generates this income. Furthermore, there are shops in the village that would not have existed otherwise. Other people earn money by renting out their horses or donkeys or by being a porter or guide themselves. Farmers earn money off tourists because they can sell their products for a higher price to lodges. Lodge can pay this higher price for food because tourists can afford to pay relatively much for food. In fact, tourists pay more for their food than for the room they sleep in. Thus attracting tourists is done more by offering an impressive menu, than by having luxurious sleeping facilities, as tourists are expected to eat at the same place where they stay the night. Tourists generate much income and competition is increasing in the village. The new road makes it possible to import many goods, food products, but also construction and decoration materials. In the newer part of the village, many new lodges have recently been constructed. During the research, a new luxurious hotel was constructed overlooking the village. The new lodges have western style bathrooms and furniture, attracting the well paying foreign tourists. It was a recurring comment from lodge owners with older hotels that they could only get domestic tourists these days, and that they needed to modernize in order to have a share of foreign tourists.

Aside generating income and competition, tourists also have an influence on the culture in the village. However, this influence is not as direct and strong as the influence of the newly constructed road. The cultural influence of tourists is most visible with the young people in the village, who can be seen wearing western clothing like jeans, instead of traditional clothing. In addition, behavioural conducts are changing, like discussed in the previous chapter; young people want to have more freedom to make their own choices, for example in a life partner. Items like having a mobile phone and digital camera are more appreciated by the youngsters than by the elderly in the village, with the former engaging in contact with tourists over these items. Diet is also changing in the village, with people eating non-traditional food like biscuits and popcorn.

Origin* Influence Tourism on Community	Not- Original	Original	Total
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5.2.2 Negatives and Positives about Tourism

Indifferent to Tourism	4	0	4
Negative	1	2	3
Negative & Positive	1	1	2
Positive	7	14	21
Total	13	17	30

Table 5.3 is a cross tabulation showing the opinions of villagers on the influence tourism has on the local community, divided by being originally from the village or not. It shows that the vast majority of villagers believe that tourism has a positive influence on the community. When asked whether people would like to see more tourists coming to the village, 21 people in the research sample answered affirmative, compatible with 70 percent of the villagers. Only one person wanted to see fewer tourists and eight people were indifferent to the number of tourists. Statistical tests could not indicate a significant difference in opinions about tourism between people originally from the village or not. A chi squared and Cramér's V tests did indicate a significant medium strong connection between earning income from tourism (both direct and indirect) and having a positive opinion about tourism¹⁸.

Table 5.3: Origin of household divided by perceived influence of tourism

Figure 5.10 shows the result of a focus group session concerning the negative and positive effect of tourism.

Tourism	
Positive	Negative
-More employment	-Poor do not benefit
-Higher food prices	-Higher food prices
-Changes in lifestyle	-Shortage of drinking water
-More income	-More pollution, wrapping paper
-New facilities that improve village	-Changes in lifestyle
-More NGOs and healthcare teams	-Population growth

Figure 5.10: Positive and negative effects of tourism

As with the road, tourism has both desirable and undesirable effects, and what may benefit one may be a threat to others. In general, tourism creates employment and therefore income, which is a positive outcome. However, some people were complaining that the poor do not benefit at all from tourism, and that in fact tourism is making their lives worse. Reasons for this latter comment is that tourists increase the price of food in the village, which is problematic for those who cannot grow (enough) food themselves. Furthermore, tourists are putting a big strain on the water source with their higher usage of water by taking a shower and using a western style WC. Many of the newly imported products are for resale in the new shops; many of these products are wrapped in plastic. Because pollution is a relatively new problem, this problem is not dealt with properly and the village is being increasingly polluted with all the plastic.

Under normal circumstances, population growth is not possible in the area, as there are only so many people that the land can feed. Nowadays, with the extra income generated by tourism and the extra food imported from Pokhara, population growth is happening. This creates more competition for

¹⁸ $X^2=7.778$ & $\alpha=0.005$, and Cramér's $V = 0.509$

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basic needs such as food, and the poor people who do not benefit from tourism find that nearly every aspect of their life is getting more expensive.

Some of the more positive influences tourism has on the village are the increased interest by NGOs, as the village is more known to westerners than other villages. Combined with the increased connectivity due to the road, more NGOs can come to the village to aid the school, water system and improve the local health post. At the time of research, a German NGO was visiting the village to take an inventory of the medicine stock, and an Indian-Nepali NGO was checking local water sources. The presence of many tourists also fastened processes like being connected to the electricity system; furthermore, since a few years there is Internet and a mobile phone network. Kagbeni has got electricity since approximately ten years, other villages in the area that are not located on the trekking/pilgrimage route only got electricity very recently or are still waiting.

These effects of tourism also change the lifestyle in the village. There are more diverse ways in earning an income, and owning a lodge is very hard work. Some say people have to work so hard these days, due to the increased prices, that there is not enough time for the local culture anymore. The notion that tourism is changing the lifestyle of people is very connected to the newly built road, and can work out both in a positive and negative way.

5.3.3 Conclusion

The influence of tourism on adaptive capacity seem to be similar though less disruptive as the influence made by the road. Tourism has long been a source of income, and as such has long been increasing the adaptive capacity of some whilst decreasing that of others. People who gain income from tourism fare better than those who do not. The effect of this seems to have been intensified by the newly built road. However, the positive outcomes of tourism, aside the income it generates, are beneficial to the entire village. The extra attention from NGO to improve the school and health post, and the attention from Nepali government who constructed the electricity grid, would not have been there if there were no tourists visiting the village.

Conclusions, Discussion & Recommendations

This thesis has set out to research the capacity of the village Kagbeni to adapt to different transformations stemming from climate change, a newly constructed road and international tourism, but also its internal adaptive capacity. This Chapter now first provides the sub-questions, and in the case of climate change, road construction, and tourism, also a recap of the theory on these topics.

What is the influence of climate change on Kagbeni, and the village's adaptive capacity?

Scientific articles mention many consequences of climate change such as: more extreme weather; extreme high or low temperatures; droughts or excessive precipitation; the melting of perennial snow and glaciers, with as potential consequence Glacial Lake Outburst Flooding (GLOFs). Furthermore, ecological lines could shift with as consequence that species could enter new territories previously not suitable for habitation, and diseases spreading over wider geographical areas. In addition, many articles state the vulnerable position of High Mountain communities in developing countries. For one part because developing countries are assumed to not have proper coping mechanisms and technologies to adapt to climatic change. For the other part because climate change is predicted to be more volatile on high altitudes, with one degree Celsius rise in temperature at sea level the temperature in the High Himalayas will increase with two degrees Celsius. Some authors, however, indicate that mountain communities are also very flexible and could make many adjustments to their lifestyles to adapt to climate change. In addition, studies suggest that in the near future some mountain communities might even benefit from global warming.

What is the influence of the newly constructed road on Kagbeni, and the village's adaptive capacity?

The theory on road construction for development indicates several possible outcomes. Road construction is a public investment often intending to improve agricultural growth and consequently alleviating rural poverty. The main manner in which roads can improve the lives of the rural poor is through increased connectivity and increased market integration. Roads decrease transportation costs and time, allowing agricultural products to travel around a country both cheaper and faster, and make certain technologies suddenly available. In addition, roads are seen as positively connected to essential economic indicators such as trade, communication, electricity, and health. However, studies also suggest that roads on their own do not create economic development. The potential for development must already be in an area before a road connects it, otherwise the road will just serve as a means to leave the area. Furthermore, the increased connectivity and market integration also works the other way around; not only have remote areas easier access to economic centres, economic centres also have easier access to remote areas. A result of this could be that renewed economic development in these newly connected areas do not stem from, or benefit, the local people but rather outside investors looking for new business opportunities.

What is the influence of tourism on Kagbeni, and the village's adaptive capacity?

The theory on tourism's influence on a developing country are rather opposing, with some authors thinking positively about tourism. They believe tourism has a positive trickle-down effect of foreign exchange, technology, the creation of jobs and a modern lifestyle. Whereas, on the other hand there are

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authors who believed tourism was a new form of colonialism. Furthermore, they claim that most financial benefits from tourism leak back to the country of origin of the international tour operators, while employment in the tourist sector is seasonal, low paying, and exploitative. The pro-poor tourism concept believes that tourism can alleviate rural poverty because it is a market that comes to the producers; creates local inter-sectoral linkages with agriculture and artisanship; claims tourism is labour intensive, and thus creates jobs. Furthermore, according to this concept tourism can take place in poor rural areas because it has low entry barriers when compared to, for example, manufacturing.

The two remaining sub-questions are:

What are other external sources of influence on the culture and adaptive capacity of villagers in Kagbeni? And:

What are local sources of influence on adaptive capacity within the village of Kagbeni?

These sub-questions intend to answer the main question, which is:

What are the positive and negative outcomes of Climate Change, Road construction and Tourism; how do these influence the adaptive capacity of- and within the community; and what are the effects of local mechanisms and geographical interactions on this adaptive capacity?

One of the outcomes is that due to the difficult climate, the people of Kagbeni like the villagers have been doing nothing but adapting. There are extensive local structure to prevent food shortage such as their ancient bigamist marriage tradition and sending children to monasteries to prevent population growth. As far as climate goes, the people of Kagbeni can be described as environmental refugees, because the majority has to flee the village during the winter months. Furthermore, the entire village had to relocate at some point in history due to climatic changes. Currently, the village is reaping some benefits from climate change with some people investing in apple farms for exportation. This is corresponding to some of the articles that claim that in the near future High Mountain communities will see an improvement in climate.

This raises some discussion points about a popular viewing point in the scientific world, which often describe mountain communities as vulnerable and fragile. The story of the relocation in the past for example, shows that perhaps they are indeed vulnerable, but also flexible and capable of adapting to changing circumstances. A further discussion point here is the description of the word adaptability, which in scientific articles means that people should be able to maintain the current lifestyle or even improve it. The case of Kagbeni shows that an adaptation strategy in the face of climate change could also mean that one changes his or her lifestyle all together, such as relocating to a better place. Furthermore, this thesis is prove of what other authors have mentioned before, namely that large global climate change models are useless when considering the daily reality of communities, both contemporary and future. This was evident in the often-heard response that people did not know much about the climate, which leads to believe that people in the village would be even less interested in possible future scenarios of climate change. Nevertheless, research much still be done to predict the local outcomes as large scale relocation of communities due to climate change would be undesirable especially if it can be prevented by, for example, constructing a proper irrigation system. Something that is a major threat to the village are GLOFS, two have already occurred in the past, and with the predicted melting of glaciers, more are likely to come. A recommendation would be to create a proper warning and observation system, to prevent GLOFs making casualties in the village. A good working irrigation

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system was something that resonated throughout many interviews with Kagbeni people. Villagers did not fear future climate change so much as their irrigation system is working properly, they were afraid for some of the villages surrounding them, however. Even though people did not indicate an increase in irrigation water, climate change is likely to increase water run-off from the mountains. This is again an example how climate change can improve daily lives in the village.

The local political situation of non-original and original villager may seem unfair to the non-original villagers, but it is a system that seems to be working. The system keeps the community together and lets the community work hard for the survival of the entire village. In addition, the restriction on selling land is most likely protecting the community against people from outside taking over local businesses. This is especially important concerning tourism and the newly constructed road. Currently, local people own all hotels in the village, creating those desirable inter-sectoral linkages the literature on pro-poor tourism is advertising. Tourism has transformed Kagbeni, and it was mostly done in a developmental way, however, this was most likely not the result of national or international policy, there is a lot of local capacity and an entrepreneurial mentality. However, ACAP did give courses to local lodge owners about hospitality and desires of western tourists; this definitely helped in improving the lodges. Not all outcomes of tourism are positive and the two main issues, depletion of the water source and pollution, are issues that could have been prevented by proper planning. The depletion of the water source is vastly increasing because many new hotels offer western style showers and WCs. A recommendation here would be that the villagers plan systems that would decrease the water usage of the drinking source without having to decrease their comparative advantage on the tourist market. In addition, the current waste disposal system is not working well enough, as evident by all the plastic cluttering the system. It is recommended that this should be improved as well as this plastic could eventually pollute water, or poison animals that eat it. Power of the lodge owner did not come out as straightforward in the research sample as it had been suggested in the theory on some of the results of tourism in Nepal. A future insecurity concerning tourism would be the decline of foreign tourists and increase of domestic tourists and Indian tourists. Lodges in the village are currently mostly adapted to western standards, and this now most likely has to change again to the taste and spending power of domestic tourists. On the other hand, these people have been coming for hundreds of years; it is just the quantity that has changed due to the road.

The new road could have intensified the problem of outsiders taking over, but instead it is creating market integration and increased prices for the crops produced in the village. Theory on results of road development appears to be right. Kagbeni had potential for economic growth, probably due to years of income from tourism, thus development and modernisation has arrived. Other villages in surrounding areas seem to be running empty, as they do not consist of the right mix. A discussion point here would be that constructing a road to a formerly isolated area should be properly planned and prepared. Not just the construction itself, but also the people who road will reach have to be mentally prepared beforehand. The people in Kagbeni were rather surprised with their new connectivity and were not given the time to deal with the consequences. Now, some people benefit much from the road as they have quick and entrepreneurial minds. However, the negative consequences, the pollution and decreased feeling of safety, could have been mitigated if more had happened rather than just bringing in a bulldozer and dynamite to build a road. In addition, the road construction was not done in a sustainable manner. Many villagers complained of increased dust in the air because of the road. Furthermore, some plots of land were destroyed by the road, the landowners claimed they were not consulted before hand, or compensated afterwards.

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All three topics are both positively and negatively influencing the village; at the moment these influences seem to benefit the village as a whole. Because of tourism and the road, the village has become more modern due to increased connectivity and diversity in income. Climate change is providing entrepreneurial opportunities in the form of apple farming. The increased modernity has many positive outcomes, and is in general improving the village. However, there are also negative side effects to this transformation, and these could form a great threat if not dealt with properly. The local adaptive capacity, combined with the beneficial influences of the three topics has increased the prosperity in the village. The other side of the medal are the increased social-inequality, and potential threats concerning increased pollution and water security.

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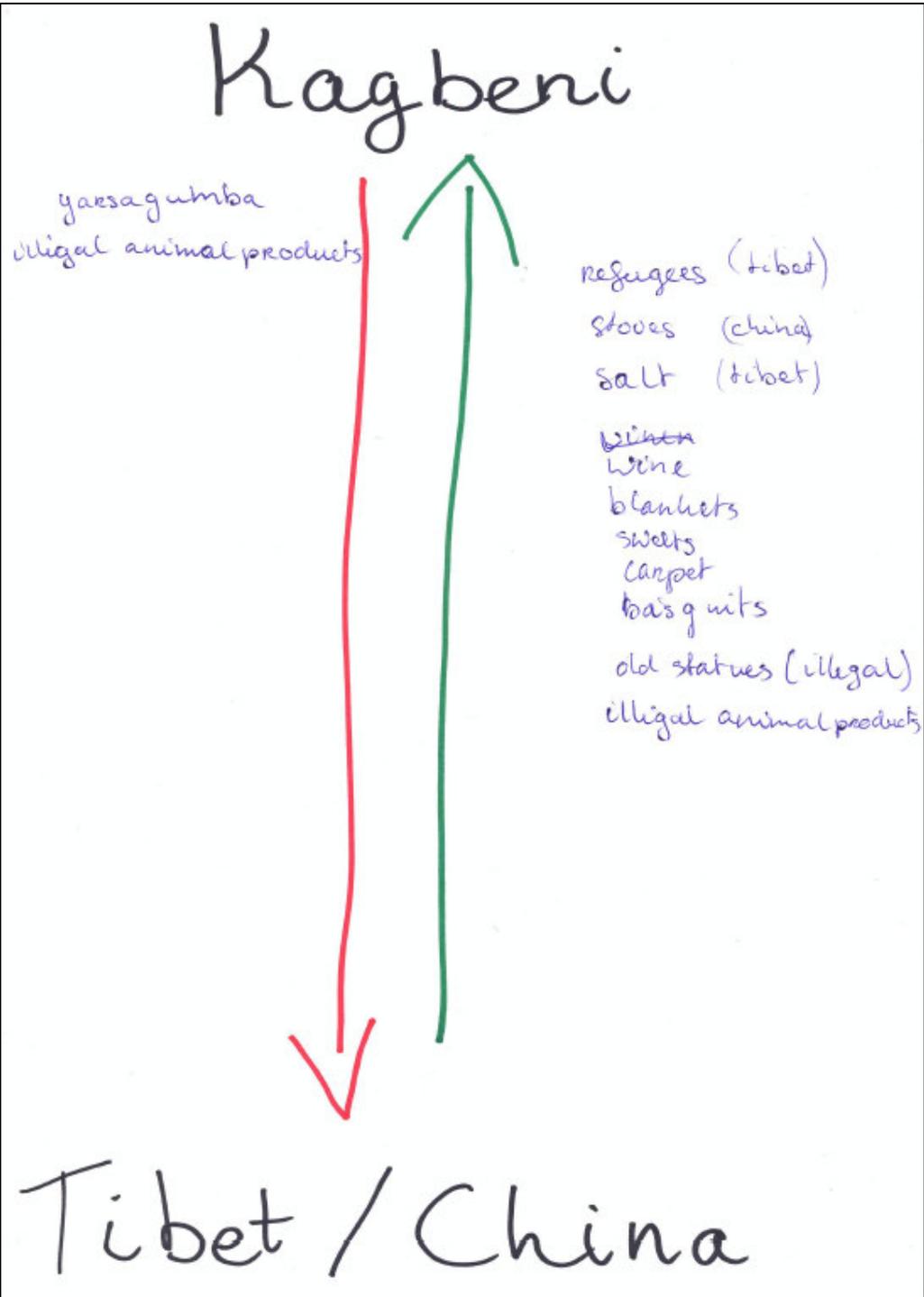
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Appendix

I. Focus Group: Geographic Flows.

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II. Focus Groups: Water, Climate, Road & Tourism.

Sept. Oct. Nov.	Dec. Jan. Feb.	March. April May	Jun. Jul. Aug.
<p>Autumn</p> <p>Irrigation stops Enough water → Agri</p>	<p>Winter</p> <p>Irrigation stops Water will freeze No grass no dog → grass No solution</p>	<p>Spring ^{Tsing much with} ↑ less for Agriculture is too cold in mountain not enough melting more is needed May will be good No solution</p>	<p>Summer Enough for Agri</p>
<p>Solution → requesting gov, collecting rest self, also building → houses getting 3/4 hours walk away then it's a drinking water source</p> <p>20 yrs ago water from river → then taps not possible to drink water from FK → may drinking water</p>	<p>g public taps</p>	<p>JK too dirty → when snow melt FK's melt snow FK in village, becoming less drinking water drink then water</p>	<p>JK too dirty → when snow melt FK's melt snow FK in village, becoming less drinking water drink then water</p>

The Road

Before: carrying self \rightarrow Pokhara 7/10 days
walking
Mules, donkey, horse
30/20 times a year
buying goods, goods
education

feels going very far away

Now: very few walking
1 day jeep, motorbike, plane
2 day bus
distance is feels less
reasons people go more often

not visiting other people

foreign tourists
border, 10 Nepali =
2 foreigners

"no criminals in L."
Hotel is very hard work, not making more money!
→ relative
→ not harder than agriculture
external influences
changes culture

Tourism

→ read, everything is brought to house

positive: more employment → eating house, shops, lodges
more tourists please! benefit & gains
selling food for good prices

↓
outturns
negative

beneficial for whole village (even those who see negative things happen socially to K.)
more hotels better

Lifestyle changes → improvement of food, clothes, facilities
Livelihoods improve more tourists, more NGOs, more healthcare facilities

[only profit for hotel owners and others to do with]
tourist.
more tourists, more jobs better for selling agricultural products
→ selling food to lodge owners

negative: → not complexing community, everyone satisfied
"Rich richer, poor poorer" → poor do not benefit, some food
shortage of drinking water, more pollution
because of wrapping paper → tourist, garbage
food more expensive, high price
Droppers for walking a day, now 300 rupees (also road, and population growth) → life is getting more expensive
→ multiple reasons

culture has changed little bit → some festivals, not much
→ not tourism, but people get lazy → not knowing traditional songs, etc. → not doing
"collect rubbish, sell for it" → person collects all day, → 100 p. Pakhara
2 storage places, but separate glass & tins, post-bent
1 use a week
TU → less community ties → people stay at home and don't back
conditions anymore

III. *The Questionnaire.*

Statistical Survey – Livelihood, Vulnerability & Adaptive Capacity.
Renske Duns & Eline Brinkman, University Utrecht

- TOPICS:
- Agriculture & Climate Variability
 - Exposures
 - Food, Health, Water & Energy
 - Social Networks in Kagbeni village
 - Socio-economic-demographic Household inquiry
 - Future Problems
 - Case-study: Yarsagumba (optional)

Agriculture & Climate Variability

1. Do you grow crops?
 - a. Yes
 - b. No (Please proceed to question 8)

2. What do you produce? (please indicate what products you produce)
 - a. Food grains (Wheat Buckwheat Barley)
 - b. Cash crops (Oilseeds Potato)
 - c. Spice crops (Cardamom Turmeric Ginger Chillies Garlic)
 - d. Other crops (Vegetables Fruits)
 - e. Else, namely:

3. Do you own the land you grow your crops on?
 - a. Yes
 - b. No, because

4. On how many plots of land do you grow crops on?

5. What are the main constraints in crop production of every individual plot of land? (too much wind, too less sun, too less water, no fertile soil etc)

6. How high is your yield in a normal year?

7. How much of your production do you keep for yourself/ sell to the market/exchange?

Which products? To whom? To which market?

8. Do you own livestock?

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- a. Yes
- b. No (proceed to question 11)

9. What livestock, and how many do you own? (more answers possible)

- a. Horses: ...
- b. Buffalo: ...
- c. Yak: ...
- d. Mules/donkeys: ...
- e. Sheep: ...
- f. Goats: ...
- g. Pigs: ...
- h. Poultry: ...

10. What do you use your livestock for? (Milk, meat, wool, fertilizer etc.)

11. Climate Variability

	Change over last 5 years (more, less, etc)	How has this affected you? (crop, livestock, health, income)	How do you cope with this?
Snow			
Rain			
Temperature			
Water flows Jhong Kola			
Water flows Kali Gandaki			

Exposures

12. Over the last 5 years, have you experienced any of the following events, and how often? (more answers possible)

- Yes:
 - a. Wildfires: ...
 - b. Droughts: ...
 - c. Storm: ...
 - d. Extreme temperatures (both hot and cold): ...
 - e. Excessive rain/snowfall: ...
 - f. Flooding: ...
 - g. Insect outbreaks: ...
 - h. Disease outbreaks in crops: ...
- No, proceed to question 14

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13. Do you think that there has been an increase in those kinds of events over the last 5 years?
- a. Yes
 - b. No
 - c. Too difficult to remember
- 13.a Have your crops been affected by extreme weather events (wildfires, droughts, storms, extreme temperatures, excessive rain/snowfall, flooding, insect outbreaks, disease outbreaks) over the last 5 years?
- a. Yes
 - b. No
- 13.b Has your livestock been affected by extreme weather events (wildfires, droughts, storms, extreme temperatures, excessive rain/snowfall, flooding, insect outbreaks, disease outbreaks) over the last 5 years?
- a. Yes
 - b. No
- 13.c Has the health of your household been affected by extreme weather events (wildfires, droughts, storms, extreme temperatures, excessive rain/snowfall, flooding, insect outbreaks, disease outbreaks) over the last 5 years?
- a. Yes
 - b. No
- 13.d Has your income been affected by extreme weather events (wildfires, droughts, storms, extreme temperatures, excessive rain/snowfall, flooding, insect outbreaks, disease outbreaks) over the last 5 years?
- a. Yes
 - b. No

Water and energy

14. Do you have a water tap in your own house?
- Yes
 - No
15. Where do you get your drinking water from?
16. Where do you get your water from for other household consumptions?
17. Which months a year do you have trouble to get enough water for household purposes? (Including drinking water)?
18. Which months a year do you have trouble to get enough water for agricultural purposes?

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19. Do you store water?

- Yes
- No

19a IF YES: Why

19b In which way?

19c How much?

20. Over the past 12 months were there any water conflicts in the community that you are aware of

21. What kind of energy do you use to cook?

- Gas
- Kerosene
- Wood
- Solar panels
- Dung
- Other:

21a Where do you get these from?

- Nearby forest
- ACAP
- Others:

22. What kind of energy do you use for heating?

- Gas
- Kerosene
- Wood
- Solar panels
- Dung
- Other:

22a Where do you get these from?

- Nearby forest
- ACAP
- Others:

23. Does your household have enough energy /electricity for its daily activities?

- Yes
- No

In case of wood usage:

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24. How do you get this wood?
- buying
 - growing my own trees
 - collecting from forest
 - other:.....

If collecting wood:

24a which forest?

24b. how do you transport this wood?

24c. how long does it take to get to the forest?

24d. Are you aware of any protective regulations concerning this forest?

- Yes, namely:
- No

Food

25. Where does your household get most of its food from?
26. Which products do you need to buy from outside the community for your household's food consumption?
27. Which months a year does your family have trouble getting enough food?
28. Does your family save some of the crops you harvest to eat during a different time of year?
- a. Yes
 - b. No
29. Does your family save seeds to grow the next year?
- a. Yes
 - b. No

Social Networks

30. For what kind of problems do you ask the assistance of one of the following persons/ institutions?

Institutions/ Problems	Village Leader	Relatives	Friends	Community members	ACAP	NGO's	Governme nt agencies
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Crops							
Livestock							
Irrigation							
Water (drinking water)							
Climate							
Food							
Health							
Conflicts							
Finance							

31. Over the past 12 months did you go to any of these institutions/ persons to get assistance?

- Yes, namely:
- No

32. Do you attend village meetings?

33. Over the past 12 months did you assist in any sort of way members of your community?

- Yes, namely:
- No

34. Has tourism affected the community ties in Kagbeni?

- Yes, namely:
- No

35. Do you like to see more tourism in the village of Kagbeni?

- Yes, because:
- No, because:

36. Has the recently constructed road in any way affected your live?

- Yes, namely:
- No

37. Has the road affected the community ties in Kagbeni?

- Yes, namely:
- No

Socio-economic-demographic household inquiry

38. What are you main sources of income? (Agriculture/Livestock/ Tourism/others, etc.)

- 1.
- 2.

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3.

39. IF NO tourism: Do you get in any sort of way benefits of tourism?

Yes....

40. Are you the head of the household?

41. Household Matrix

	Family member 1	Family member 2	Family member 3	Family member 4	Family member 5	Family member 6	Family member 7
Age							
Gender							
Occupation in agriculture							
Occupation In household chores							
Occupation in paid labour							
School attendance in past							
School attendance now							
Highest completed level of education							
Lives permanent in house							
Lives temporary in house							
Winter migration							

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Other seasonal migration							
Lives abroad (including India)							
Migration for work purposes							
Migration for educational purposes							
Migration for health purposes							
Chronically ill							

42. Income calendar

	J a n	F e b	M a r	A p r	M a y	J u n	J u l	A u g	S e p	O c t	N o v	D e c	Total Income
Agriculture													
Lodge													
Shop													
Tourism other													
Business other													
Paid labour													
Remittances													
Other*													

43. Future problems next 5 year (on household level)

	No	Yes, namely...
Crop production		
Livestock		
Irrigation water		
Drinking water		
Energy		
Food		

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Climate related		
Health		
Income		
Tourism		
Road		