

Impact of Ecotourism on the Sanitation of Local Communities

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Abstract

Ecotourism is recognized for its economic potential to reduce poverty in least developed countries. There is a general belief that ecotourism will benefit local development, but previous research has found mixed results. This paper explores the idea of ecotourism and its impact on local sanitation in Nepal's Annapurna Conservation Area. The research uses a case studies approach to understand the existing socio-cultural characteristics of the local communities and how ecotourism plays a role in local sanitation. Using household field surveys for socio-demographic information and semi-structured interviews, this paper analyses ecotourism and sanitation of local communities and provides policy recommendations for improving the sanitation standard.

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1.0 INTRODUCTION

The World Trade Organization has recognized ecotourism for its economic potential to reduce poverty in the least developed countries. The untouched destinations and the old traditions that still exist in the rural regions of developing countries are attractions for ecotourists. Ecotourism relies on and respects the local infrastructure; it has been assumed that the host communities providing the facilities will make improvements for the comfort of the visitors, and their own economic benefits. One of the significant impacts of ecotourism is acculturation where the direct interaction of the tourists with the host communities over a long period of time brings changes in behaviour regarding food, language, and pattern of life (Bhatt, 2006, p. 263).

Based on this social exchange theory, this paper aims to investigate the affect of acculturation on improvement of sanitation standards of host communities through exposure to foreign trekkers over extended periods of time. Much of the literature claims that acculturation usually comes at the cost of the local population through the loss of native culture, but I aim to investigate the effect of acculturation on the pressing development issues of sanitation and health. Sanitation and access to drinking water have been one of the Millennium Development Goals (MDGs) to improve the health standards worldwide (The World Bank, 2011) and my research makes an attempt to analyse this aspect of development due to ecotourism.

It is generally assumed that communities that offer services to tourists will improve their sanitation standards (Neth, 2008). Nyaupane and Thapa in their comparative assessment of the Annapurna Conservation Area Project (ACAP) have pointed out that ecotourism has improved the sanitation and the solid waste disposal problem (Nyaupane & Thapa, 2004). I intend to further link these two aspects of acculturation in sanitation improvement, and evaluate how attributes of ecotourism impact the host communities.

This study utilizes case studies from different communities in the Annapurna Conservation Area (ACA) in Nepal, and collects information on sanitation standards, and

socio-cultural and economic characteristics. I base the research on the acculturation categories model by Berry (1997) to understand the effect of different type of trekking tourism on the communities. Since the link between acculturation with regard to community and local development has been largely missing, I expect this exploratory research to contribute to the theory.

In this paper, I attempt to look at the existing socio-economic and cultural conditions of the communities in the Annapurna Conservation Area, and then make a comparison between the different communities with respect to the type of tourism they experience. The field research was conducted in summer 2011, and information was collected using household surveys and semi-structured interviews. The survey data was used to provide a rigid base for the sanitation situation, while semi-structured interviews were used to explore the various factors that affect the sanitation standards. Using a case study approach, I compare the different regions in ACA to evaluate how ecotourism is related to local sanitation. Based on the findings from case studies, policy recommendations are made to improve the local sanitation standards in the communities that have a potential to capitalize ecotourism.

2.0 LITERATURE REVIEW

Acculturation is referred as the process in which one cultural group (or individual) adopts the behaviour and beliefs of another group through continuous first-hand interaction (Berno and Ward, 2005). Ecotourism provides an ideal setup for acculturation because the participation of trekkers with the host communities provides the needed first-hand continuous interaction between the local culture and the foreign trekkers. To understand the effect of acculturation, it is important to understand the moderating factors that exist in a community prior to acculturation (Berry, 1997). So, the existing socio-cultural characteristic of any community is an important factor that needs to be understood to analyse the impact of tourism. This paper aims to evaluate the impact of ecotourism on the aspects of community development. I focus on the existing forms of socio-cultural aspects that cause social discrimination or inequality.

Nepal is a cultural mosaic comprised of different castes and ethnic groups that belong to Tibeto-Burman and the Indo-Aryan families (Pradhan and Shrestha, 2005). These different caste groups have come about through various waves of migration for over 2 thousand years from the North, South and West of the country. The 2001 census of Nepal recorded 106 languages and dialects, spoken by 103 castes and ethnic groups. After the restoration of multiparty democracy in 1990, the Constitution declared Nepal as a multi-ethnic, multilingual democratic monarchical kingdom, but socially and culturally the caste hierarchy and some form of discrimination exists. One of the common ways of classifying the different groups is done by differentiating between the caste groups (*Jats*: Caucasoid Hindus speaking various Indo-European languages) and the ethnic groups (*Janjatis*: Mongoloid groups speaking Tibeto-Burman languages); the ethnic groups are more egalitarian while the caste groups follow strict structural hierarchy. The caste group is usually structured as perceived “high castes or the ritually pure” and the perceived “low caste or the ritually untouchables (*Dalits*)” (Pradhan and Shrestha, 2005). Historically (and in some ways to this day) in Nepal, people of low castes are not considered equals in political, cultural, and social realm (Cameron, 1995).

Throughout history, the political, legal, social and cultural system of the country has been dominated and structured by the “higher castes.” Research has shown that the higher castes (*Brahman* and *Chhetri*) are socially and economically in much better positions than the lower castes and ethnic groups (Niraula, 1994). In the Nepalese Hierarchy system, the non-Hindu (generally the Tibeto-Burman) groups are placed in the middle ranking position despite the fact that they are culturally and socially divergent from the Sanskrit ideals (Levine, 1987). Since the ethnic groups are considered middle-rank and are more egalitarian, it is the lower-caste groups that are most discriminated in the country. There is a significant difference in the human development index of the “high caste” and the “low caste” in Nepal, and a much lower literacy rate among the “low-caste” than the national average (Pradhan and Shrestha, 2005).

There have been efforts made to reach out to the poorest of the poor, but the political and social system that is still dominated by a certain group of people continues to affect the perceived lower caste groups in the country, who are often ignored in the process of development because of their lack of opportunities to participate. It is found that populations living geographically further from the center of (national or local) power have a lower human development (Pradhan and Shrestha, 2005). The fact that *Dalits* usually reside on the peripheries of the settlements that are populated by the caste groups could also account for their lower human development index compared to the national average. When development reaches to communities on local level, they are the last ones to be able to access the opportunities.

2.1 Ecotourism and community development:

Ecotourism in the poor mountain economies is considered to have a positive impact on the economy. On the macro-level, it creates an opportunity for foreign exchange to strengthen the economic capacities and promote development (Sharma, 2000). In 1997, tourism accounted for 18 percent of the total foreign exchange and constituted 3.7 percent of the GDP of the country. Often times, tourism is seen as an intervention in development, more so in the poor mountain economies, and the changes that are brought

through tourism are construed as development. In Nepal, especially in the places where remoteness and inaccessibility often act as a constraint in development, ecotourism helps to convert it to a comparative advantage (Sharma, 2000).

The Himalayan mountain ranges that lie in the north of Nepal offer an attraction for hybrid ecotourism in the form of adventure, culture and ecotourism (ACE). Nepal has witnessed trekking tourism since the early 1960s, which grew gradually in the 70s and picked up the momentum in the 1980s. The history of ecotourism is not very old in Nepal, and though the first conservation program was initiated in 1971, the idea of ecotourism came about only after the inception of Annapurna Conservation Area Project (ACAP) in 1986, which was legally recognized as a Protected Area in 1992 (ACAP, 1997).

As the tourist flow increases, the infrastructure for hospitality tends to grow. Usually this change in infrastructure is more demand driven, so the patterns of consumption of the tourists can have a significant impact on the society. Also, because of the exposure to new ideas, education and economic flow, there is a need for identity that can integrate the traditional norms and values with the demands of modern world (Sharma, 2000). Though there is a general belief that ecotourism will benefit local development, there has been no noticeable impact of tourism on the development of the local communities (Banskota and Sharma, 1998). In developing countries, it is often difficult to measure economic impacts, or the related development impacts: mainly because the data related to multiplier effects are often missing on subnational or community levels. Also, sometimes the direct benefits tend to overestimate the overall impact of ecotourism (Lindberg, 2001).

2.2 Sanitation and Development:

The eight MDGs for 2015 are commitments that are embodied to achieve a set of critical development outcomes (The World Bank, 2011). According to World Bank data, around the world 2.6 billion people lack access to toilets, latrines and other forms of improved sanitation. Among these people, more than 40 percent practice open defecation. Since

access to sanitation and water, prevention of disease reflects success in achieving one of the MDGs (to reduce child mortality rate to 2/3rd by 2015), I consider better standards of sanitation as a part of development.

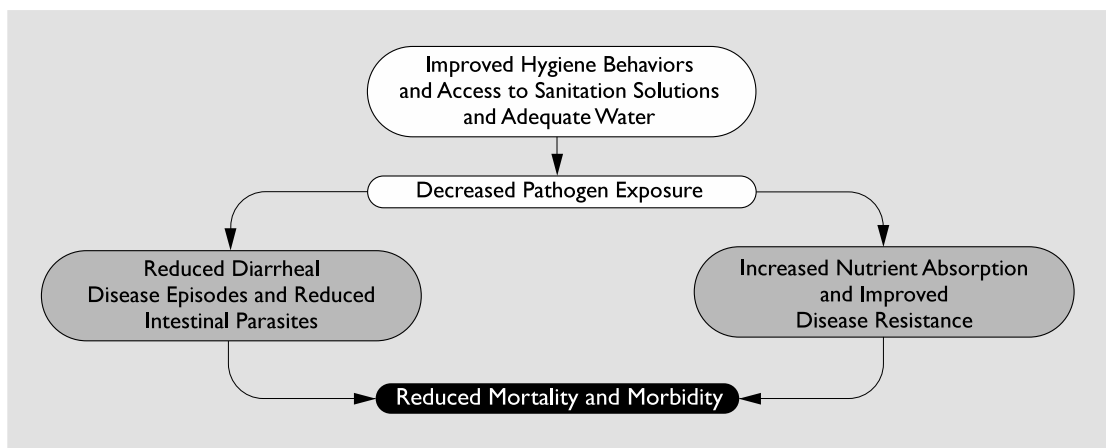


Fig Source (Billig, Bendahmane, & Swindale, 1999)

There is no recorded history of any efforts made in Nepal to improve the sanitation and hygiene before 1980. The idea of latrine, hand washing or any sanitation is still new in many rural places of the country (Adhikari and Shrestha, 2006). According to the World Health Statistics, 89 percent of the population in Nepal has access to safe drinking water, and 27 percent has access to improved sanitation (WHO, 2009). Though there is a decline in the last few years, child mortality rate (<5 years) is still high at 55 per thousand children. The mortality (children < 5 years) due to communicable diseases amount to 60 percent, and diarrhoea alone is the cause of 24.4 percent of the total mortality rate (WHO, 2009). These numbers are relatively higher in the rural communities than the urban; as lack of access to improved sanitation is coupled with the fact that there is also limited access to health services in remote places. So, I can say that lack of access to improved sanitation and safe drinking water is one of the major causes of child mortality in Nepal.

In the low-income countries, the relationship between health and income is more significant, which could be because of the material poverty that does not allow the low-income people to invest on improved health facilities and sanitation (Fuchs, 2004). Research has shown that people with higher education level are prone to act on new

health information, are open to new ideas and exposure and so generally more likely to take advantage of the new opportunities (Fuchs, 2004). Along with income and education, there has been evidence of the impact of road infrastructure on health and education of the people in rural areas, and previous research has proved that roads have significant effect on reducing infant and female mortality rates (Agénor and Moreno-Dodson, 2006). Since low-income societies are more susceptible to being impacted by socio-economic standards and infrastructure (Anker and Knowles, 1980), I base my research on the idea that education, income and infrastructure play an important role in improving sanitation standards.

2.3 Acculturation Theory:

Acculturation is regarded as the process in which one cultural group adopts the behaviours, values and beliefs of another cultural group through continuous first-hand interaction over an extended period of time (Berno and Ward, 2005). Ecotourism, especially trekking tourism in context to Nepal provides a perfect setting to understand the acculturation process because of the intercultural contact between the trekkers and host communities. John Berry, a pioneer in the field came up with innovative graphical representation of theories and models of acculturation process, which have been recognized as “Berry boxes.” This research uses Berry Box, as it provides the foundation to understand how sanitation behaviour has shifted in the host communities due to continuous intercultural exchange with the trekkers over an extended period of time.

2.4 Berry’s Acculturation Box:

Participation	Cultural Maintenance	
	Yes	No
Yes	Integration	Assimilation
No	Separation	Marginalization

I use the Acculturation dimensions proposed by Berry (2009) where different forms of tourism (according to their interaction with the host communities) have different types of impact on the communities. According to the theory of acculturation explained by Berry, these acculturation effects vary depending on how the different cultures participate with the locals. I use similar idea in the impact of tourism on sanitation on local communities. In my research, I aim to explore how tourism influences the sanitation behaviour of the host communities along with other social, economic and cultural factors.

3.0 METHODOLOGY

The aim is to observe the impact of tourism in host communities, so in this research, I evaluate the communities within one conservation region. I assume that the amount of sanitation provided by the conservation area project would hold constant between different communities. This would help minimize the differences in external aid (through the conservation area project) for sanitation in the local communities. For my research, I choose Annapurna Conservation Area (ACA), as it is the largest conservation area in Nepal and sees highest percent of tourists every year as compared to other conservation areas (National Trust for Nature Conservation, 2008). ACA also has communities that are untouched by tourism, communities that have witnessed high rate of tourists since 1970s, and communities that have controlled tourism.

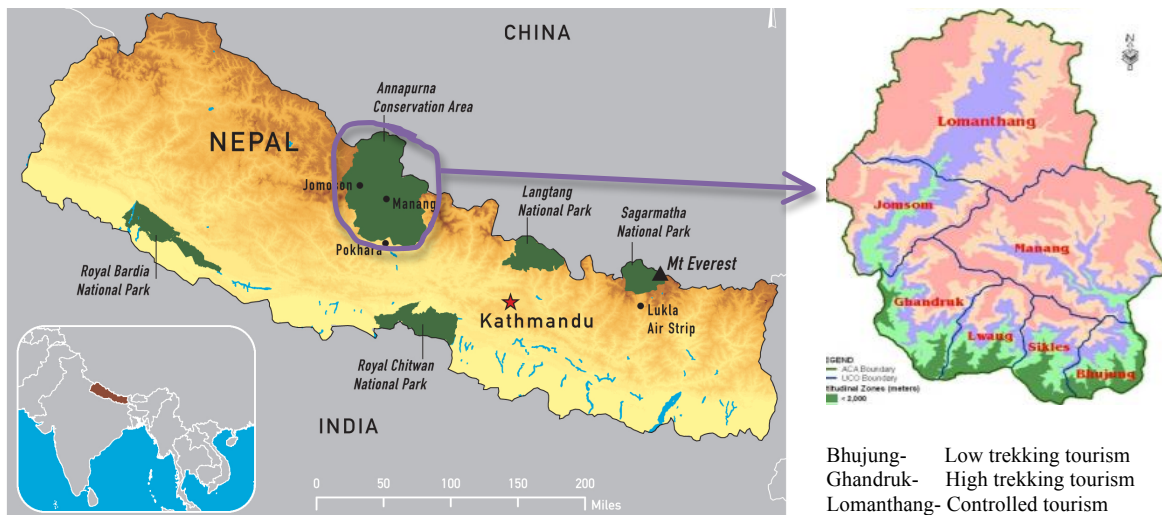


Fig 1: Map of Annapurna Conservation Area and the regions surveyed

The different communities within ACA were categorized according to the type of tourism they have. This is a nonprobability sampling as the different regions in the ACA were chosen for their characteristics related to tourism. I aim to understand the impact of tourism on the local communities, so the sampling was purposive to identify the regions: In this research I differentiated regions as No-Tourism, High-Tourism and Controlled-Tourism and used a household survey along with semi-structured interviews within the communities.

3.1 Survey Regions:

Bhujung is a low-altitude region with limited view of the mountains. Though ACAP has been putting efforts in promoting culture tourism in this region, it has not been able to attract trekkers. Ghandruk on the other hand is a comparatively higher altitude region with view of the Annapurna range, Dhaulagiri and Macchhapuchre mountains and also lies along the trail to Annapurna Base Camp. This region has witnessed trekking tourism for more than three decades.

Upper Mustang, referred as the Lomanthang¹ region according to the ACAP, is the restricted zone in ACA, which was closed to foreign nationals till 1991. Due to high entry permit fees (500 USD for a 10 day permit, and an additional 70 USD per day for extra days) for non-Nepalese citizens, this region offers controlled tourism, mainly trekkers who can afford the high fees and more expensive trip. Besides the control by increased fees, there is also a restriction of 1,000 trekkers in a year through authorized trekking agencies (National Trust for Nature Conservation, 2008). Referring to the existing literature, I assume that this restriction for the trekkers to visit through an authorized trekking agency reduces the probability of trekkers using local facilities. Since the trekkers are not using much of the local resources, the economic benefits are exported. This region is used as a sample to analyse the impact of controlled tourism and a culture that has different attitude towards sanitation and solid waste disposal methods.

Purposive sampling method is used to represent the different regions according to the characteristics of tourism. In my research, Upper Mustang has a relatively much smaller population than Bhujung and Ghandruk, but I use 43 samples from each region. The purpose was to obtain adequate information about each region rather than matching the proportions of the population.

¹ In my research, I have used Lomanthang and Upper Mustang interchangeably. Also, Lomanthang Village is different from Lomanthang region

A household survey was taken from different villages that lie in Bhujung, Ghandruk and Lomanthang region. The villages selected in each region for surveys were based on their location and their representation in the region (only major villages listed by ACAP were selected for the survey). Households in each selected village were randomly selected through a systematic random sampling (first household randomly selected from a list, and then every 10th household). This selection was based on the average village size in the ACA. For a community or village with less than 10 households, no sample was taken.

No prior information was given to the households, and in-person surveys were conducted on the spot. The questionnaire was produced in the local language (Nepali), which is spoken and understood by everyone living in the region (See Appendix for attached survey questionnaire in English and Nepali). Respondents were given the option of filling the survey out on their own, or orally provide the answers. All the respondents surveyed were 18 years of age or older. A total of 129 observations were collected, with 43 from each region.

<i>Region</i>	<i>Area (sq. km.)</i>	<i>Proportion of ACA</i>	<i>No. of Households</i>	<i>Total population</i>
Bhujung	382.4	5.0	3,282	16,889
Ghandruk	807.8	10.6	4,273	18,464
Upper Mustang	2567.6	33.7	1,171	5,395

Table 1: ACAP data for demographics of the regions surveyed (ACAP, 2009)

3.2 Limitations of the survey sample

Some of the villages with smaller population size were excluded because of inaccessibility during monsoon in Nepal (time limitations, flooding, and inaccessible rivers). This selection of villages with limitations can create bias in the data.

3.3 Categorization of “upper-caste” and “lower-caste”

According to the existing literature, the Tibeto-Burman groups are placed in the middle ranking, and are more egalitarian than the Hindu caste system (Levine, 1987). According to the ACAP report (ACAP, 2009), in Bhujung region, Tibeto-Burman groups constitute 60.2 percent of the households and high-caste households constitute 16.1 percent of the population (2009: p. 99). Similarly, in Ghandruk region, 64.5 percent households belong to Tibeto-Burman groups and 16.8 percent belong to the high-caste (2009: p. 105). In Lomanthang region, 97.6 percent households are Tibeto-Burman and there is no available information on high-caste households (2009: p. 111). Majority of the households in these regions belong to the Tibeto-Burman group (comparatively few in the high-caste group) and they are placed above the Hindu low-caste hierarchy (Levine, 1987), I categorize all the households that belong to Tibeto-Burman groups as the “high-caste” households and the households that belong to the Hindu low-caste hierarchy as “low-caste” households.

3.4 Survey Instrument:

The questionnaire mainly consisted of the household attributes regarding sanitation and water. Besides these, semi-structured interviews were made to find out if the people in the community perceived any benefits from tourism. Along with the households, some of the local teachers, leaders were approached to understand the impact of tourism on a community-level. Using the information collected from household surveys and the semi-structured interviews, I explore the sanitation situation of these communities.

Total N=129; each region =43	Bhujung (Low tourism)	Ghandruk (High tourism)	Lomanthang (Controlled tourism)
Age (mean)	46.3258	42.2093	44.093
Gender (female)	46.51%	65.12%	53.49%
Caste (lower)	20.93%	18.60%	0.00%

Table 2: Demographics of the regions surveyed

3.5 Evaluating Sanitation:

Availability of toilet in the household is the main indicator of improved sanitation. In the data, I use four categories to measure the toilet: Houses that have no toilet (toilet=0), pit-

toilet (toilet=1), toilet without running water facility (toilet=2), and toilet with running water facility (toilet=3).² Households and leaders in local communities were inquired about disease outbreaks, and though poor sanitation might not be the only reason behind disease outbreaks, it does play an important role. Besides access to toilets, access to health facilities also impacts the disease outbreak in the local communities, so households were approached to understand their ability to access and seek healthcare when required.

Sanitation is a relatively new concept in Nepal (there is no recorded history on improving sanitation till the early 1980). With time, awareness and knowledge dispersion will eventually improve the standards of sanitation of any community, and it would be immature to consider tourism as the only factor that affects sanitation of local communities. In my research I try to explore the idea of tourism as exposure of the local communities to a different culture and how acculturation can have some positive impacts on the local communities. However, it is important to see all the underlying variables that can affect the standard of sanitation and drinking water situation. Along with the socio-cultural structure of the communities, the economic standards, national and local policies also make a difference. In this research, the Kaski district (*four villages in the survey*) was declared as an open-defecation free zone, which means that the government stepped in to provide aid to people to construct toilets in households. Also, ACA has developed some key tourism related infrastructure in the past, which include building toilets, health posts, and waste management and dumping sites (ACAP, 2009).

² These categories of toilets were made according to their “sanitary” values, but may not be good for the ecological system and environment. Toilets that require water can contribute to sanitation problems in communities where water resources are scarce and the knowledge of environmental implications are missing.

4.0 FINDINGS

I measured sanitation using two variables: toilet in the households and disease outbreaks in the community. The respondents were asked if they experienced frequent disease outbreaks (dysentery/diarrhea) in the communities (yes=1; no=0). Differentiating the three regions according to the type of tourism they have (low-tourism, high-tourism and controlled-tourism), I analyse the sanitation standards of the communities to evaluate the impact of tourism. Also, taking into account the caste hierarchy as an important part of social construction of the communities, I further differentiate the sanitation situation among the high-caste households and the low-caste households in these regions.

	<i>Toilet=0</i>	<i>Toilet=1</i>	<i>Toilet=2</i>	<i>Toilet=3</i>	<i>Disease outbreaks (yes)</i>
High Caste Bhujung	15 (44.12%)	0	11 (32.35%)	8 (23.53%)	5 (14.71%)
Low Caste	3 (33.33%)	0	6 (66.67%)	0	7 (77.78%)
High Caste Ghandruk	2 (5.71%)	1 (2.86%)	15 (42.86%)	17 (48.6%)	6 (17.14%)
Low Caste	0	0	7 (87.5%)	1 (12.5%)	1 (12.25%)
High Caste Lomanthang	14 (32.56%)	28 (65.12%)	1 (2.32%)	0	18 (41.86%)
Low Caste	n/a	n/a	n/a	n/a	n/a

Table 3: Statistics on Toilet availability and Disease probability of the three regions

Comparing the different regions in the research, I find that Ghandruk region has a significantly improved sanitation situation than Bhujung and Lomanthang region. There is no difference in the sanitation standard of the low-caste households and the high-caste households in the high-tourism region. In Bhujung region, the low-caste households' response for disease outbreaks was much higher than the high-caste households'. Lomanthang has a comparatively lower standard of sanitation than Bhujung and Ghandruk. According to the Berry's acculturation theory, the existing conditions in the society (social and economic structures, infrastructure, social cohesion and institutional participation) play an important part. So, for my research, I further explore the existing conditions of social caste structure, culture and tradition, income, education and available infrastructure in these regions.

I find that Bhujung and Ghandruk regions are similar in their social structure, with similar ethnic groups and castes. On average, the households in Bhujung region had comparatively (though insignificantly) higher years of education and higher income than the households in the Ghandruk region. Also, the households in the Bhujung region were closer to the nearest road infrastructure than the households in the Ghandruk region.³ Since Bhujung and Ghandruk are similar in their socio-economic and geographic structure, and have very different form of tourism, I would expect that the impact of trekking tourism would be easier to explore comparing these two regions. On the other hand, Lomanthang has very different cultural and social structure, and the average years of education and income of the households are significantly lower than Bhujung and Ghandruk. Since social structure of the communities is different from Bhujung and Ghandruk, comparing only by evaluating the type of tourism is not feasible. Also, Lomanthang has a very low infrastructure development, so I approach Lomanthang by understanding its socio-economic, geographical and cultural structure, to evaluate the impact of controlled-tourism on the sanitation standards of the local communities.

4.1 Case Studies of the three regions

There is no existing research on these regions to evaluate the impact of tourism on local sanitation. I use an exploratory method to understand the communities and how trekking tourism are impacting them. The three regions that were researched were selected for their specific attributes of tourism, but the households surveyed within these regions were random. I use a case study method in my analysis to provide a description of the dynamicity of the locals and trekkers and how they impact the sanitation of the communities. The survey instrument used for quantitative analysis provided firm data on availability of toilets, education and income of the households, and distance from the nearest road. Semi-structured interviews were used to understand the local perception of sanitation, impact of trekking tourism and the socio-cultural structure of the local

³ See Appendix for average income, education and distance for nearest road for all three regions.

communities. I approach my analysis by using individual case studies method for each region and then comparing them applying Berry's acculturation theory.

4.1.1 Bhujung Region (Ghalegaon, Ghanpokhara, Saitku and Bhujung-Village):

According to my results, 58 percent of the sample in Bhujung region has toilets in their households. Ghalegaon and Ghanpokhara have a relatively better sanitation situation, and also have more awareness regarding health and sanitation than Saitku and Bhujung-Village.⁴ Saitku lies in between Ghanpokhara and Bhujung-Village, is comprised of about 10 houses, and the households don't have toilets or available drinking water. When development projects are implemented in a regional or district level, peripheral communities are the last ones to be benefited. Saitku, situated in the periphery of two villages has no drinking water facilities or sanitation support. A 60 years old man from Saitku, who takes care of his neighbours' cows for income, said that none of the households in his community have toilets in their houses or access to drinking water. "*All of us (households around here) get our water for daily use from the river and it takes me about an hour to get back home with a bucket of water,*" was his response on the accessibility to water.

In Bhujung-Village, about 40 percent of the households have toilets. There are also some public toilets constructed by ACAP in the region, and for the households that do not have toilets can access these public toilets. All the households that live in the central village have access to toilet, so there is no observed open-defecation within the core of the village. All the households in the sample who lived in the core of the village are upper-caste. However, in the peripheries of the village there are no public toilets, and the accessibility to drinking water is also limited. The households in the peripheries are lower-caste, so along with the fact that they have been socially discriminated, they also have less access to sanitation.

⁴ Bhujung-Village lies in Bhujung region, and is the ACAP administration headquarters for the Bhujung region.

It is hard to identify if the perceived “lower-caste” households have less access to sanitation because of their peripheral location or the existing social structure that discriminates them. On the individual level, some lower-caste respondents said that they have toilets in their households, but their inability to access public toilets and observed open defecation increases their probability of experiencing disease outbreaks. Also, while the households in the village had good access to drinking water, the households that were situated in the periphery had limited access. Some of the respondents argued that unless water was easily accessible, constructing toilets would not be feasible and it would also be difficult to prevent children from getting diarrhea/dysentery. A 37 years old man living in the periphery (from a low caste household) said that he and some of his neighbor have constructed a common toilet that they use. He said that they try to keep their surroundings clean, but it is hard because of lack of access to water. In his words, *“For eight months the taps dry, and we have to get the water from the river, there is no logic behind constructing toilets when we have such scarcity of water.”*

In the region, there was a distinct difference between the sources of income between the upper-caste and the lower-caste households. Many of the surveyed upper-caste households had some source of income besides farming (e.g.: pension from the army, service in army, and migrant labour work), while most of the low-caste households worked in the fields, often times in others’ fields because their own land asset was too little to sustain themselves. *“Most of us work in the others’ fields because our own field are not enough for the family,”* said one of the respondents who also added that there is lack of access or information regarding migrant work among the low-caste families. There seems to be an existing social structure that predefines the work for “lower-caste” families. This aligns with the existing literature on the difference between the socio-economics of the low-caste and high-caste households. The human development index of the low caste in Nepal is much lower than the national average, and it is observed that the social structure (existing economic standard, work structures, networking) also impedes in their economic standards. When asked if any of her family members was a migrant worker, a 35 years old woman, who works on others’ farm for a living said, *“We work in*

others' fields because our land asset is too small to sustain ourselves, that's what we do. Going abroad to work requires money and network, we can't afford that."

There are designated wastebaskets in for households in Ghalegaon and some in Ghanpokhara, but Saitku and Bhujung-Village have no waste disposal sites. Throwing the waste in the nearby stream is the idea of "safe waste disposal" for the households. "Yes, we do have safe waste disposal in the nearby gulch," said one of the respondents when asked how did the households manage their waste. Most of these "safe disposal" gulches flow toward the periphery of the village as the peripheral is at lower level than the main village. So, the low-caste households that live in the periphery have the waste accumulated from the core village along with their own and poorer level of sanitation. None of the households seem to be affected by such a system though; they all seemed oblivious about the waste that was accumulating near their communities through the gulches.

Ghalegaon situated in Bhujung region has been recently selected by the government of Nepal, for developing into a SAARC village (ACAP, 2009). Though there have been attempts in making Bhujung as one of the tourism regions for "culture tourism," it has not been successful in attracting international tourists. As the ACAP officer in Pokhara mentioned that trekkers mostly visit the Himalayas for the view of the mountains and promoting "culture tourism" has not been very successful till date.

4.1.2 Ghandruk Region (Syauli Bazaar, Ghandruk Village, Sikha, Ghara)

In Ghandruk region, more than 90 percent of the households surveyed had a toilet in their households. The sanitation situation of Syauli Bazaar and Ghandruk Village⁵ is much better than Sikha and Ghara. Similarly, in the case of accessibility to water, households in Ghandruk Village have good access to water (in most cases, drinking water pipe at home), while scarcity of water during winter times was observed to be a persistent

⁵ Ghandruk Village is a village within the Ghandruk region, and is the ACAP administration headquarters of Ghandruk region.

problem in households that lie between Sikha and Ghara. When asked about the issues regarding sanitation and drinking water in Ghara, a 73 years old man, living on subsistence farming said:

“I have a pit-toilet at home, but the issue around here is water. In Chaitra and Baisakh (March/April/May months), the source dries up and we have little water causing the drinking water pipelines to dry. I don’t have a drinking water line in my house, so I use my neighbours’. The old dumping sites are all filled now, we made four of them previously but we don’t have new sites, so people often throw their waste in the gulches or any place that is convenient for them.”

In Sikha, most of the households constructed toilets about 10 years back by the help of the Red Cross. Sikha and Ghara have relatively better sanitation, but some of the households that lie in between Sikha and Ghara have lower sanitation standards and limited access to drinking water. One of the households situated in the periphery of Sikha made a temporary toilet about 7 months back, but the toilet was demolished for the road construction. The 35 years old man, working in others’ fields for sustenance said that he constructed the toilet just before the road was to be constructed so that if it were demolished, he would get support to construct a proper toilet, but there has been no help so far.

“I made the temporary toilet thinking that if the government tore it apart, I would get support for the construction of a proper toilet, but now I realize that it was a wrong decision. Now we don’t have a toilet and no support to build a new one, but on the other hand, maybe the road will make transportation easy and food commodities cheaper in this place.”

The respondents in Ghara and Sikha responded positively about the road reaching to their communities in a couple of years. Since the local communities do not benefit from trekkers, the locals consider a road infrastructure to be crucial for their community development.

Increase in tourism has increased the demand for bottled drinks, which increased the waste in the region. To control the waste Ghandruk Village has started to send the waste (empty bottles and cans) back to the city to recycle. The ACAP administration officer in Ghandruk said that it was important initiation to keep the villages clean and has helped them control the bottle and plastic trash that has been accumulating because of tourism.

“Trekking usually buy mineral water, coke and beer. Previously we had a difficulty managing such waste, but now we have initiated the idea of sending back to the waste to Nayapul and Pokhara for recycling. In Chomrung, mineral water bottles are prohibited; coke and beer are available only in cans and not bottles because it is easier to transport empty cans than bottles.”

The probability of disease outbreaks is relatively much lower in the high-tourism region. Ghandruk Village has an Italian-aid health post that provides free checkups and lab tests, a government health post providing free available medication, and a community-run pharmacy that provides affordable medications. All of them work in collaboration and complement each other to give affordable and quality health services to the locals. Households in Syauli Bazaar do not have any health post, so they have to either walk three hours to Ghandruk or one hour to Nayapul to access health facilities. Respondents in Sikha said that they have a good health post and do not have any issues regarding disease outbreaks.

Unlike Bhujung region, there is a relatively mix of caste groups in both central and peripheral regions of Ghandruk. In Ghandruk Village, the households of both low-caste and the high-caste groups can be seen as random mix rather than a segregated group of low-caste households in the peripheries. A 29 years old woman from a low-caste household, said that exposure and researchers coming to village has reduced the discrimination against the low-caste households:

“Earlier we were discriminated in everyday lives like while walking we were not supposed to walk along with the ‘higher-caste’ people, or get water above them in the stream. Now, we not only walk along side, but

also live and work with them without facing such extreme discriminatory behaviour. It is mainly because people come to talk to us. In the beginning, people were less discriminatory just to show to the 'outsiders,' but now things have changed for us and we all live in a more equal community."

The same respondent also said that with time they have more opportunities like sewing trainings and craft making that have helped household earn an income besides subsistence farming. *"I was given this sewing machine after I took a three months tailoring-training. Though it does not bring a lot of money, but it is a good source of income for us,"* she said.

There was also a significant cohesion among the households in Ghandruk Village than any other communities researched. The *Aama Samuha* (mother's group) was active group in arranging village clean-up programs (cleaning the paths), planting trees, organizing meeting groups to create awareness regarding sanitation and health education, and also acting as a small micro-credit organization for the villagers. One of the respondents, a 50 years old women and an active member in the *Aama Samuha* said that the group also helps to provide benefits to the locals by capitalizing trekkers' interest in their culture:

"When we have a group of trekkers that want to see a local or cultural dance, we organize it and charge the trekkers to see the performance. This money goes to the common pot of Aama Samuha, which we can loan to the locals in case of emergencies. Like last year, a local villager needed to take his son to the hospital but didn't have the money, so we loaned him some from our common-pot. This money helped him treat his son and he paid us back within a year. In a place like this, where most of us live on a low income, it really helps to have an Aama Samuha. If we didn't have the trekkers, we wouldn't be able to collect any money. We also use the money for other things like helping the community school, reconstructing/paving the village paths, and reconstructing bridges. There is no private benefit for the households that are not involved in tourism business, but we can

capitalize the trekking tourism to being public benefits to the communities through Aama Samuha.”

There are *Aama Samuha* in the other communities of Ghandruk region (in Sikha and Ghara), but none of them have the same level of cohesion, working capacity and collaboration as the *Aama Samuha* in Ghandruk Village. While all respondents in Ghandruk Village agreed that ecotourism helps the locals on public level, respondents in other communities said that they do not benefit from tourism in any way. One of the respondents in Sikha, a 31 years old man, said that the “passing-by” trekkers have no contribution in the development of the communities. He further added, *“Trekking have been visiting these villages for more than three decades but they usually pass-by. Since we don’t have trekkers that stay over night or more, only the “lodges” that provide lunch or snacks benefit from ecotourism, but there is no benefit to the local communities.”*

The sanitation standard of the Ghandruk region is better than the Bhujung, and also the caste discrimination is significantly lower. Many respondents said that trekking tourism has indirectly contributed to the development of the communities (including sanitation standards) and also helped in reducing caste discrimination. However, there is a significant difference in the communities where trekkers stay overnight and where they just pass-by. In Ghandruk Village, where the trekkers stay overnight, trekking tourism has helped create social cohesion and development through *Aama Samuha* and the local households indirectly benefit from trekkers. In Ghara and Sikha, the local households do not benefit from trekking tourism, and the *Aama Samuha* is not as proactive in Sikha and Ghara as it is in Ghandruk Village.

Comparison of Bhujung and Ghandruk

The household surveys show that Bhujung and Ghandruk have similar demographics and socio-economic characteristics. The one attribute that differentiates these two regions is the ecotourism: Ghandruk has high tourism while Bhujung has no tourism in the region. So, I compare these two regions for the impact of ecotourism through acculturation,

exposure and social cohesion. Controlling for education, income, distance from the nearest road, this research shows that there is a significant difference in the sanitation level between the high tourism and the low-tourism region. Bhujung has a lower sanitation standard, the caste discrimination in the communities is very distinct and the lower caste households said that they were more vulnerable to disease outbreaks in their communities. So, in Bhujung, the attributes that ecotourism brings (exposure, acculturation) is significantly missing. However, in Ghandruk, ecotourism is related to improved sanitation, increases social cohesion (provides public benefits) through *Aama Samuha*, and reduces caste discrimination by exposure.

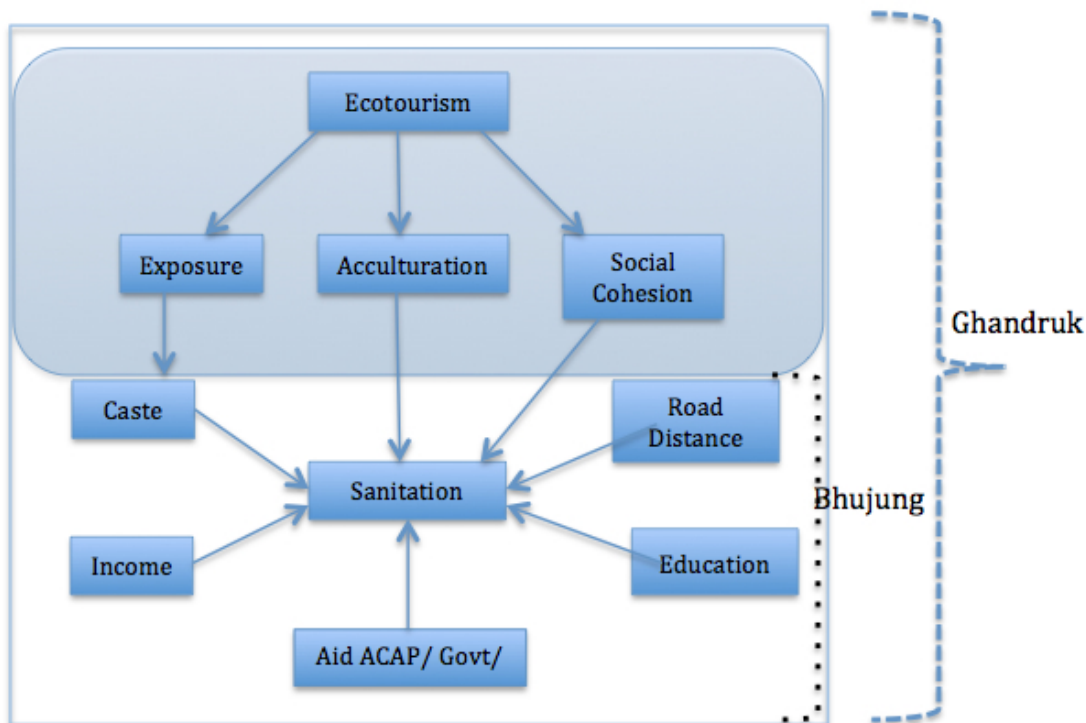


Fig 2: Comparison of Ghandruk (with ecotourism) and Bhujung (without ecotourism).

The respondents said that social cohesion helps them to improve their sanitation standards by regular village clean up programs, micro loans from *Aama Samuha*, awareness programs conducted by *Aama Samuha* and ACAP. Also, respondents said that exposure of the trekkers and researchers have created more equality for the low caste

households and discrimination has declined. While low caste households in Bhujung lived in the peripheries and were disadvantaged in regards to their access to water and sanitation; households in Ghandruk are more “mixed” (high caste and low caste lived as mixed groups, not segregated). I did not find any difference in sanitation standards of low caste households and high caste households in Ghandruk region, but there was a significant difference among the low caste and high caste households in Bhujung.

Some respondents in Bhujung and Ghandruk said that they received aid from ACAP, Government, and Red Cross to build toilets. This form of aid creates bias in my research as these aid projects have been implemented in different times. In Sikha, Red Cross implemented drinking water and aid for toilets about 10 years ago. In Bhujung village, ACAP and government have been providing aid to construct toilets since 12 years. Some households in Syauli Bazaar were provided aid to construct toilet about a year ago by the government of Nepal. In my research, I categorize these external supports (from government, NGOs and ACAP) as part of natural dynamicity of the communities. With time, information, awareness and support sanitation standard of the communities is likely to improve; and this research shows that ecotourism is related to (or is a part of) the improvement of sanitation standards.

However, one of the interesting characteristics of lower sanitation standard was related to the location of the household in regards to the village. In both the regions, peripheral location was correlated to lower sanitation standards (significant in Bhujung region and insignificant in Ghandruk). In Ghandruk, the respondents who said they did not have toilets at home were all situated in the periphery of the village (ex: household between Sikha and Ghara, two households in the periphery of Ghara). In Bhujung region, this difference between the main village and periphery was exacerbated mainly because of overall lower sanitation standards, and also because of the segregation of the communities based on caste hierarchy. This observation also aligns with the statement by respondent from Saitku village, who said, *“Drinking water pipes and improved sanitation happen in central villages, that is where the development projects are implemented, not here.”*

While keeping the existing social structure (culture, economy, education, infrastructure) as constant as possible, Ghandruk and Bhujung give a case where ecotourism has positive relation to improved sanitation and reduced caste discrimination. Lomanthang gives a different perspective in understanding ecotourism as it has a unique existing social and economic structures, and tradition and norms for sanitation. It was opened for foreign nationals only after 1991, and the government has been regulating controlled tourism since then. Lomanthang has a controlled tourism, lower income and education, and access to infrastructure is non-existent. So, in a different socio-economic dynamics, and different type of tourism, impact of ecotourism is very different.

4.1.3 Lomanthang (Upper Mustang) Region

(Tangbe, Chuksang, Tsaile, Samar, Gheling, Ghami, Tsarang, Lomanthang)

Villages in Upper Mustang lie in the altitude range of 2800 m above sea level to approximately 4100 m. In my research, the communities that were surveyed were at 3020 to 3730m range. Most of the settlements lie alongside the Kali Gandaki River that flows bisecting the region. The high mountain settlements offered by Mustang have nurtured pre-Buddhism tradition and culture. It is also considered the cultural trove for some aspects of Tibetan culture and tradition, full of monasteries that date back to 8th century, historical monuments such as Tshortens, palaces, and forts. Lomanthang Village, which is also known as the only surviving Walled City in Nepal is considered the cultural capital, and is also the ACAP administration office for Upper Mustang region in ACA. Lower caste households in Lomanthang region constitute 1.88 percent of total population (ACAP, 2009), and in my research, I do not have any lower caste household sample for this region. This drawback in my survey sample could result to potential bias in my data.

Mustang (Upper and Lower) is located in the trans-Himalayan region and covers approximately 47 percent of the ACA (National Trust for Nature Conservation, 2008). The Upper Mustang region falls under the rain shadow area of the Himalayas, and hence has a dry, arid climate and desert type landscape. ACAP (2009: p. 112) shows that 9.39

percent of the households have food scarcity for more than nine months in a year. Only 13.80 percent of the households in Lomanthang region are food sufficient for all the year round. Approximately 75 percent of the population relies on agriculture in Lomanthang; but unfortunately due to cold climatic conditions, water scarcity and poor irrigation facilities majority of the villages harvest crops only once a year. There are no municipalities in Lomanthang region, and all the settlements surveyed have no basic infrastructures like drainage, sewage, and dumping sites.

Only one household in the sample has a toilet at home, 14 households have no toilet at home and 28 households have pit-toilets. There are toilets in local health posts, schools, monasteries, hotels and lodges, and government offices. Since human manure⁶ is used in the fields and pit-toilets are part of culture, I expect a higher percent of the population to have pit toilets than estimated by this survey. Some of the respondents said that lack of skilled manpower to construct toilets and financial issues were the main reasons for not constructing toilets, but most of the population agreed to the fact that it was a part of culture. One of the respondents, a 26 years old woman from Lomanthang, seemed surprised when asked what was the reason behind not constructing toilets; she simply said that it was the culture:

“We don’t construct toilets because we use pit-toilets which we can use for the manure in the fields. It is not as convenient as having a proper toilet infrastructure, but we can use the manure that is beneficial. Mostly animal dung and wood is used for fuel and cooking, and human manure is important for the fields. That’s how it has always been here and none of us really bother too much about this.”

Though many households did have a pit-toilet, there was ample evidence of open defecation in the region. Most of the respondents said that they had little to no knowledge regarding sanitation standards. The local government made initiation of constructing public toilets in Lomanthang Village few years ago, but these toilets have come to disuse

⁶ Households construct pits, which are used to compost their fecal wastes. In 5-6 months, this waste gets decomposed and is then taken to the fields to be used as manure.

because of lack of maintenance. In Tangbe, lack of water has caused in “locking up” of the public toilets in schools, monasteries, and community building. A 51 years old man in Tangbe said water issues needs to be addressed first to improve sanitation standards. He said, *“None of the households here have toilets, but that is not the main issue. We don’t have sufficient access to water, and because of this even the available public toilets are locked-up. Almost everyone in this village observes open defecation.”*

The government has constructed community taps in various villages in Upper Mustang region. The communities that don’t have water taps access local stream or natural water sprouts to access water for consumption and use. There is a significant limitation to accessing water in this region: for both the communities those have and do not have community water taps. During the dry seasons, the available taps dry up and sometimes in monsoon (if there is a heavy rainfall), reservoirs breakdown. During the research (in early August 2011), there was an unusually heavy rainfall in Upper Mustang region and the water reservoir of Lomanthang Village collapsed, compelling people to bring water from the river below (about 20 minutes walk).

Most of the respondents said that there was frequent disease outbreak in the communities. Limited access to improved drinking water, lack of sanitation, and limited access to health services have increased the probability of experiencing disease outbreaks in the communities. Since Upper Mustang has a cold climate, and winters have become especially harsh, many health service providers move to lower altitude cities and towns. Unfortunately, diseases are most frequent at this time of the year and many children and locals are deprived of health facilities. A 63 years old man in Lomanthang Village said, *“It is not unusual for children to get sick during winters, but there are no doctors when we need them the most. So, children suffer the most because they are sick and on top of that there are no doctors that can provide treatment.”* Health issues in Lomanthang Village get worse in winters, because many diseases occur that time and most of the service providers leave village.

Lomanthang has an unfavourable climate, difficult terrain, and lacks basic infrastructure. The majority of the population has food sufficiency for less than nine months, and lives on subsistence farming in the communities where water is scarce. The respondents interviewed said that the revenue collected from the permit fee is taken by the central government and has not been reinvested in this region at all. Locals from the communities perceive no benefit from tourism and would rather not have tourism in this region. Respondents also said that they have been trying to negotiate with the government of Nepal to invest 50 percent of the revenue collected for the development of the region. One of the respondents in Tsaile said that the government has been taking advantage of the rich culture and tradition by charging high permit from the foreign-nationals but not giving anything back to the region:

“Until a few years we did not know that there was such a high permit fees to enter this region. Now that we know how much government has been capitalizing our culture, we would want some of that revenue to be invested for our development and betterment. Last year we negotiated with the government to invest at least 50 percent of that revenue for the development of this region, and if the government fails to do so, we would rather close down this region altogether for the foreign trekkers. We don’t want outsiders coming and intruding while we don’t get anything out of it.”

There are mixed feelings among the locals regarding the construction of the road across this region (from Kagbeni to Choser) connecting the south end of Lomanthang with Tibet on the north (to be completed by the end of 2012). Most of the respondents felt that this road would play a crucial role in their development: food would be more affordable, transportation easy and better trade access. Since the locals do not perceive any benefit from tourism, there is no concern about how the construction of the road would affect tourism. However, all the respondents said that if they were supported well by the government for their development, road would not be a necessity.

Comparing Lomanthang with Bhujung & Ghandruk

It is difficult to compare the impact of controlled tourism in Lomanthang with other regions because geographically and socio-culturally Lomanthang is different from both Bhujung and Ghandruk. The lack of participation between the trekkers and locals (due to controlled tourism) has created a sense of separation between the local communities and trekkers. In regards to sanitation, there is a separation between the local households and the ones who cater to the tourists. Most of the respondents said that only hotels and lodges have toilets (besides the public places like schools, Monasteries and government offices). The fact that trekking tourism is not bringing any benefits to the locals (according to the respondents) has made the locals skeptical about tourism and its advantages.

5.0 DISCUSSIONS AND RECOMMENDATIONS

This research aims to: 1) Study the impact of ecotourism on the sanitation of local communities; 2) Apply a theoretical framework to understand this influence; 3) Discuss implications of influence and how it affects all aspects of sanitation; and 4) Provide recommendations to improve sanitation of the communities in a sustainable way.

5.1 Results

In this research comparison between Bhujung and Ghandruk has shown that high ecotourism is related to improved sanitation of local communities. Households in the communities where trekkers visit are more likely to have better sanitation access than communities that do not have ecotourism. Secondly, ecotourism with high local participation also has an influence in creating cohesiveness in the communities by acting as a means of income and benefit, and also reducing caste (and social) discrimination. The communities' attitude towards their culture and sanitation is also important factor that can influence acculturation of sanitation behavior. In Lomanthang, less education, low-income and being further away from the nearest road (lack of access to infrastructure) makes it less feasible for households to improve their sanitation standards. Also, "controlled tourism" does not allow assimilation (as trekkers are not participating with the local communities), and also because there is a strong sense of cultural maintenance regarding the use of human (fecal) waste.

5.2 Applying the Berry Box

This research aims to understand how the interaction of the trekkers and locals determines the acculturation of sanitation behaviour, by identifying the different characteristics of the local communities. It is also important to understand that exposure to media, information, and sanitation awareness play an important role in changing behaviour in the communities. Trekkers and their interaction with the locals are

positively related to changing sanitation behaviour, but the case studies show that there are many other factors that come into play.

Communities are dynamic, and are influenced by their own social, cultural structures, economic systems, information, media and aspirations for the future. The existing factors, present dynamicity and acculturation, and expectations for the future, all combine to make it difficult to measure the exact impact of acculturation on sanitation of the host communities. So, as Berry (2009) argues, these sanitation behaviour changes are the result of natural world (exposure to knowledge and information, capacity, community values and patterns) and cultural world (where groups of people from different cultures interact for an extended period of time to influence each other).

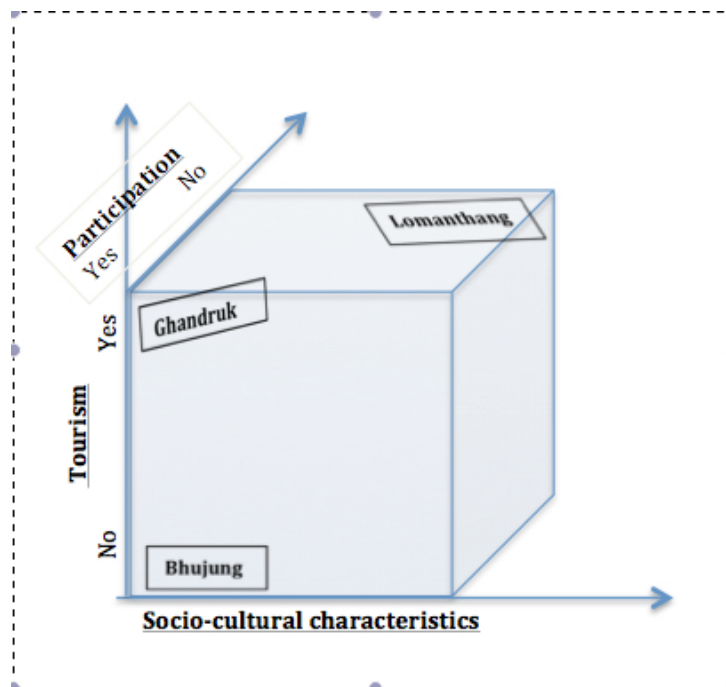


Fig 3: Comparing the three regions (Bhujung, Ghandruk and Lomanthang)

Though all three regions have different characteristics, I shall attempt to use the “Berry Box of Acculturation” to understand the local communities’ shift in sanitation behaviour through acculturation. Ghandruk shares a similar social construction with Bhujung, but at the same time differs due to the fact that Ghandruk witnesses trekkers, while Bhujung

does not. Similarly, Ghandruk and Lomanthang differ in their social cultural structures but both these regions witness trekking tourism.

Tourism		Cultural Maintenance	
		Yes	No
Yes (Participation?)	Yes	(Integration)	Ghandruk (Assimilation)
	No	Lomanthang (Separation)	(Marginalization)
No			Bhujung (<i>natural effect</i>)

Table 4: Berry's acculturation framework for the three regions

In Lomanthang, the sanitation behaviour of the locals and the people who offer services to trekkers are clearly different. As many respondents said, "*only the lodges have toilets, the common households don't.*" As the participation among the trekkers and locals increases with time, the assimilation is more likely to occur. Many respondents said that the pit-toilet was not hygienic and if they had a choice, they would rather construct a proper infrastructure. The construction of the road connecting Jomsom (Lower Mustang) with Tibet through Lomanthang region, along with increasing participation of trekkers with communities, and media and information; might lead to change in sanitation behaviour and culture among the households in Lomanthang.

5.3 Implications of assimilation in sanitation behavior

To reach the MDG, Nepal has to achieve at least 53 percent toilet coverage by 2015, which seems to be attainable at the moment. The National Plan to attain national goal of universal toilet coverage (100%) by 2017 is a more ambitious aim, which requires institutional arrangements, operational strategies, adequate investment and financing and collaborative efforts from all stakeholders. In 1990 only 6% of the population had access to toilets, and since then sanitation coverage has increased to 43 percent (in 2009). However, low-land holdings (especially among the low-caste), poverty and lack of awareness are causing problems to attain the national goal for sanitation. Also, financing for sanitation has been limited to policy commitments without implementation (up to 20 percent budget of *water supply and sanitation sector budget*), but the allocation is about 5 percent (Government of Nepal, 2010).

The Sanitation and Hygiene Master Plan (Government of Nepal, 2010) created by the Steering Committee for National Sanitation Action has laid out some challenges that might prevent from attaining the national goal of universal toilet coverage by 2017. Inadequate investment for sanitation and water, equity problems for the poor and disadvantaged and lack of commitment from the political entities are some of the major barriers in reaching the national goal for sanitation. Case studies in my research have shown that these challenges can be overcome in the regions that have ecotourism. Households in the communities that have trekking tourism have better sanitation, and are more equal where the poor and the disadvantaged are included in the sanitation mainstream. Sanitation in the trekking regions seems to have improved more through a behavior shift (acculturation) rather than conventional awareness campaigns. This aligns with the report (Government of Nepal, 2010) that mentions that with various projects and learning, “there has been a great shift from the conventional awareness raising approach to a behavior change approach as a movement.”

This research shows that ecotourism can help overcome many barriers to attain the national goal for sanitation, but such behavior shifts in communities without planning can have both positive and negative consequences. While communities have better access to sanitation, such unplanned construction of sanitation systems can have adverse effect on environment in the long run. The Ministry of Physical Planning and Works, government of Nepal have mentioned the need to understand positive and negative impacts on the environment while implementing sanitation projects (MOPPW, 2011). While ecotourism can accelerate the coverage of improved sanitation in Nepal, insufficient time to analyse the impact on environment, especially the water resources (rivers and ground water systems) might lead to long-term environment problems.

Environmental protection and sustainable use of resources are not as easily defined to give a “clear cut” meaning as one might hope. They need to be understood in the context of the social and ecological system, and for some communities creating the “Western toilet” infrastructure may not be the appropriate method. For example, in Lomanthang

where households use human manure, such “western infrastructure” for sanitation not only causes loss in the manure resource, but also consumes the already scarce water. ACAP and government of Nepal need to understand that assimilation of the sanitation culture is likely to occur in Lomanthang as the trekkers participate with the local communities. A follow-up study would be required to confirm this change.

5.4 Policy Recommendations

As any development project, sanitation also has a centrality issue (i.e. the peripherals benefit from the project later than the central locality). A central government needs to understand and address this in a more planned way. It is important to acknowledge that sanitation has been a “donor driven” project in Nepal in the past and seeking aid to improve sanitation for an unlimited time is not effective or efficient. Constructing toilets through foreign aid might be feasible, but maintenance and effective use of the toilets in the long run cannot be relied on aid agencies. According to the Sanitation and Hygiene Master Plan (Government of Nepal, 2010), one of the operational strategies is to make hygiene and sanitation a free-standing subject for foreign aid. Though the plan is to propose that sanitation be treated as a self-contained sector, and not lag behind water priorities, it is important to understand that both sanitation and water issues are closely linked. Also, instead of creating the dependency on foreign aid for basic sanitation, the concerned Ministry should approach the various resources that can be channeled to make more sustainable and reliable sanitation projects.

5.4.1 Planning:

Looking at the current situation and trend, the national target of universal sanitation coverage in 2017 seems unrealistic. However, proper planning and allocation of resources can help reach the goal in the near future. Sanitation and Water has been a “foreign aid” project in Nepal, and according to the Steering Committee for National Sanitation Action (Government of Nepal, 2010), it is expected to continue. On the national planning level, it is important to understand that reliance on foreign aid should

be avoided as much as possible and that government and communities need to act for improvement in sanitation standards.

This research has shown that ecotourism can help in improving sanitation, and that could be one of the resources to channelize for improvement of sanitation in rural communities. As new regions are being exploited for tourism in the country, the government can create a development partnership between the Ministry of Planning and Physical Works (MoPPW) and Ministry of Tourism (MoT) to ensure sanitation improvements in rural mountainous regions.

The Government of Nepal can collaborate with local stakeholders and the conservation area projects to see how tourism influences sanitation. Instead of relying completely on acculturation for sanitation, the government (or sanitation planning body) can make strategies to accelerate improvements at lower costs. For the regions that do not have tourism, this approach would be more feasible. Understanding the available resources would help in channelizing them and this would also help MoPPW to allocate funding and invest resources where other options are not available.

5.4.2 Implementation:

Accepting that trekking tourism can have a positive impact on improving sanitation, MoPPW can work in collaboration with MoT and the conservation area projects. This will help to understand how sustainable sanitation measures can be effectively introduced in the rural mountainous regions of Nepal. This would not only cut down some costs on the part of MoPPW, but also help in better collaboration between the two ministries so that they can administer development projects by capitalizing trekking tourism in the country.

Sanitation needs to be implemented at the community level, which means that ecological and social requirements of the communities need to be understood before implementing national sanitation projects. MoPPW has mentioned in its annual report that one of the

objectives is to understand the positive or negative impact on environment during the implementation of sanitation projects. The report also mentions the need to introduce efficient technology that can minimize the negative impacts on the environment (2011: p. 8). It would be expensive for the MoPPW to understand the impact on environment before implementing sanitation projects. Also, introducing sanitation projects in without any knowledge of its impact on ecology can have long term repercussions. Instead of increasing the expenditure on evaluating the environment on its and introducing new technologies, MoPPW could work in partnership with Ministry of Environment, Science and Technology (MoEST) and the conservation area projects. This can help prevent long-term impacts on environment and reduce the time and finances required for investigation and identification of issues.

5.4.3 Limitations:

This research does not explain all the different factors that impact sanitation of the communities. I attempt to understand and include the visible factors, but there could be other issues that can create bias. Also, the acculturation framework I have used explains only a part of the impact. There are also other ways that tourism impacts the sanitation (like increasing exposure, creating social cohesion and public benefits, reducing caste discrimination etc.) and acculturation is only a part of it. While the Berry box does help to explain why assimilation occurs in some communities and not in others; it does not explain the other variables like geography, income, education and infrastructure.

The fact that the Annapurna region sees highest number of tourists every year helps to see the impact of tourism at its “highest level” in Nepal, this research can be biased for the regions that do not have such high number of tourists. I use three extreme cases of tourism (very high tourism in Ghandruk, very low tourism in Bhujung and the “controlled” tourism with capacity limit and the highest permit fees in Lomanthang). This research might not explain the impact of tourism for other controlled tourism (with lower permit fees, higher capacity), or moderate tourism regions. Also, the districts that ACA lies in (Kaski, Lamjung, Myagdi, Mustang) are relatively better in sanitation than most of

the rural communities in Nepal, which may overestimate the impact of ecotourism on sanitation.

My research is limited to the impact of trekking tourism in the communities, so for the communities that cannot implement or promote ecotourism there needs to be a better understanding of alternative resources to promote improved sanitation. Also, this paper does not advocate complete reliance on acculturation for improved sanitation, but rather proposes that trekking tourism can have some significant impact on the sanitation behaviour of the local communities that should be understood and channelized.

The paper has recommended the need for different Ministries to work in partnership along with local stakeholders, which can increase the bureaucratic hassle. However, I would argue that unplanned construction of toilets and infrastructure can lead to long-term impacts, and working in collaboration would help reduce some unforeseen implications. Also, I understand that sanitation projects in Nepal still require some foreign aid and support, but efforts should be made to reduce such dependency as much as possible on a local and national level.

6.0 CONCLUSION

Ecotourism and sanitation are intricately linked with ecology, culture, environment and local communities. This research finds that trekking tourism is related to improved sanitation of the local communities, and through better planning and effective collaboration, this impact can be channelized for development. For the regions/communities where trekking tourism is not applicable, government and aid organizations need to focus and invest more. Thus understanding the resources and how they can be channelized will help to reduce the dependency on foreign aid and bring efficient results with proper investment.

There is a room for MoT and MoPPW to collaborate so that tourism and development can be achieved in partnership. Instead of considering sanitation as a foreign aid project, it needs to be evaluated on community basis. Also, the local culture and environment needs to be accessed to introduce sustainable sanitation methods, so that sanitation standards are met by fusing the available local resources with low-cost investments. The current Community Led Total Sanitation (CLTS) projects in Nepal have shown significant results in creating open defecation free zones in the communities. This idea can be further linked to understand that sanitation development approach needs to be implemented on community level. However, CLTS has also shown that upgrading toilets and their sustainability are challenging. It is advisable that understanding sustainability before upgrading the toilets would be important, and ecological and environment considerations have to be taken in account. This would mean that MoEST should also be included in understanding environment and use of proper technology for sustainable sanitation improvements in communities in Nepal.

The regions that were researched in this paper have comparatively better sanitation standards than most of the country. So, this research could overestimate the sanitation situation in Nepal, and thus undermine the challenges in implementing various sanitation measures. The aim of this paper is not to advocate trekking tourism as one of the key measures of improving sanitation, but to help understand the part it plays in the

community development (with respect to sanitation). Trekking tourism has been recognized for its economic benefits (as a way to increase the foreign capita), but there also can be other benefits of trekking tourism that can help communities develop. Understanding various impacts of ecotourism can help to address issues and manage ecotourism more sustainably.

Understanding the impact of ecotourism on local sanitation requires a more elaborative study, and other regions that have mixed variety of tourism need to be research. The three regions in ACA can give some idea on how ecotourism is related to local sanitation, but communities have different characteristics, so there is a need for an extensive research.

REFERENCES

- ACAP. (2009). *Management Plan of Annapurna Conservation Area 2009-2012*. Lalitpur: National Trust for Nature Conservation.
- Adhikari, S., and Shrestha, N. L. (2006). *School Led Total Sanitation: A successful model to promote school and community sanitation and hygiene in Nepal*. Retrieved from WaterAid:
http://www.wateraid.org/documents/ch9_school_led_total_sanitation_a_successful_model_to_promote_school_and_community_sanitation_and_hygiene_in_nepal.pdf
- Agénor, P.-R., and Moreno-Dodson, B. (2006). Public Infrastructure and Growth: New Channels and Policy Implications. *World Bank Policy Research Working Paper* , 1-59.
- Anker, R., and Knowles, J. C. (1980). An Empirical Analysis of Mortality Differentials in Kenya at the Macro and Micro Levels. *Economic Development and Cultural Change* , 165-185.
- Banskota, K., and Sharma, B. (1998). *Mountain Tourism for Local Community Development in Nepal: A case study of Upper Mustang*. Kathmandu: International Centre for Integrated Mountain Development.
- Berno, T., and Ward, C. (2005). Innocence Abroad: A Pocket Guide to Psychological Research on Tourism. *American Psychologist* , 60 (6), 593-600.
- Billig, P., Bendahmane, D., and Swindale, A. (1999). *Water and Sanitation Indicators Measurement Guide*. Washington D.C: USAID.
- Bhatt, D. P. (2006). *Ecotourism in Nepal*. Kathmandu.
- Cameron, M. M. (1995). Transformations of gender and caste divisions of labour in rural Nepal: Land, Hierarchy, and the case of Untouchable Women. *Journal of Anthropological Research* , 215-246.
- Fuchs, V. R. (2004). Reflections on the socio-economic correlates of health. *Journal of Health Economics* , 23, 653–661.
- Government of Nepal. (2010). *Sanitation and Hygiene Master Plan*. Kathmandu: Steering Committee for National Sanitation Action.

- Levine, N. E. (1987). Caste, State, and Ethnic Boundaries in Nepal. *The Journal of Asian Studies* , 71-88.
- Lindberg, K. (2001). Economic Impacts. In D. B. Weaver (Ed), *The Encyclopedia of Ecotourism* (pp. 363-377). New York: CABI.
- Nyaupane, G. P., and Thapa, B. (2004). Evaluation of Ecotourism: A Comparative Assessment in the Annapurna Conservation Area Project, Nepal. *Journal of Ecotourism* , 20-45.
- National Trust for Nature Conservation. (2008). *Sustainable Development Plan of Mustang*. Lalitpur: National Trust for Nature Conservation.
- Neth, B. (2008). *Ecotourism as a Tool for Sustainable Rural Community Development and Natural Resources Management in the Tonle Sap Biosphere Reserve*. Kassel: Kassel University Press.
- Niraula, B. B. (1994). Use of Health services in Hill villages in Central Nepal. *Health Transition Review* , 151-166.
- MOPPW. (2011). *Annual Progress Report for 2010/2011*. Kathmandu: Government of Nepal.
- Pradhan, R., and Shrestha, A. (2005). *Ethnic and Caste Diversity: Implications for Development*. Nepal Resident Mission. Kathmandu: Asian Development Bank.
- Sharma, P. (2000). Tourism and Livelihood in the Mountains: Regional Overview and the Experience of Nepal. *Growth, poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia* (pp. 349-376). Kathmandu: International Centre for Integrated Mountain Development.
- The World Bank. (2011). *Atlas of Global Development*. Washington DC: HarperCollins.
- WHO. (2009). *World Health Statistics*. WHO.

APPENDIX

1: Survey Instrument

Impact of Ecotourism on the sanitation of Local Communities in Annapurna Conservation Area, Nepal

Survey Questionnaire

Age		
Gender		
Household size		
Ethnicity/Caste		
Helper in household?		
Land asset		
Domestic animals (numbers)		
Toilet availability in households in the community	Yes	No
	Toilet with water available (tap or storing unit)	
	Toilet without water tap or storing unit	
	Bore-hole	
Do people generally use soap before eating/cooking to wash their hands and after defecating	Yes	No
	Yes, always in both cases	
	Sometimes, one case or another	
	Yes, and the storage units are all clean	
	Available, but not hygienic storage	
Safe waste disposal	Yes	No
Cleanliness of cooking area	Yes	No
Are there public toilets in the community (schools, public places etc)	Yes	No
Do people/children defecate openly	No	Yes
		Far from the source of water
		Close to the source of water
Do you have a “safe drinking water” source in the community	Yes	No
Do people use water from “safe source”	Yes	No
		Limited source and too many households accessing it.
		Source is difficult to access (too far from household/s)

The area around the public source of water clean?	Yes	No
History of waterborne diseases in the community	No	Yes
		Has decreased in the past few years
		Frequent outbreaks Serious outbreaks; resulting death
Education (in years)	Yes	No
	Level	
Annual income		
Source of Income		
Distance to the nearest road		
Awareness regarding sanitation	Yes	No
	Some understanding	

Eco-tourism started in this region in	
Built toilets and improved sanitation in the year	
Reason for improved sanitation (if available)	
Perceived benefits of improved sanitation	
Perceived disadvantage of improved sanitation (costs)	
Disadvantage of not having improved sanitation	
What would cause to initiate improved sanitation	

2: Descriptive Statistics

Variable	Mean	Std. Error
Income: <5000Rs pm=1,(5000-12000)NRs pm=2, >12000NRs pm=3	1.829457	0.0747444
Education (years of school)	3.217054	0.3679837
Distance from nearest road (Walking hours)	8.315504	0.8326282
Caste (high=1, else=0)	0.8682171	0.0298978
Toilet (no=0, bad=1, okay=2, good=3)	1.449612	0.0959204
Water (no=0, limited=1, good=2)	1.72093	0.0491901
Disease (yes=1, else=0)	0.2868217	0.0399761
Open Defecation (yes=1, else=0)	0.4031008	0.0433563

N=129

Table 1.a) Descriptive Statistics: High Tourism Region

Variable	Mean	Std. Error
Income: <5000Rs pm=1, (5000-12000)NRs pm=2, >12000NRs pm=3	1.883721	0.1254419
Education (years of school)	3.72093	0.6523877
Distance from nearest road (Walking hours)	4.406977	0.1698933
Caste (high=1, else=0)	0.8139535	0.0600463
Tourists stay overnight (yes=1)	0.4883721	0.0771308
Toilet (no=0, bad=1, okay=2, good=3)	2.302326	0.1130219
Water (no=0, limited=1, good=2)	1.767442	0.0870153
Disease (yes=1, else=0)	0.1627907	0.0569649
Open defecation (yes=1, else=0)	0	0

N=43

Table 1.b) Descriptive Statistics: Low Tourism Region

Variable	Mean	Std. Error
Income <5000Rs pm=1, (5000-12000)NRs pm=2, >12000NRs pm=3	1.953488	0.1197704
Education (years of school)	3.744186	0.6631355
Distance from nearest road (walking hours)	2.102326	0.130443
Caste (high=1, else=0)	0.7906977	0.0627722
Toilet (no=0, bad=1, okay=2, good=3)	1.348837	0.1849358
Water (no=0, limited=1, good=2)	1.767442	0.0731903
Disease (yes=1, else=0)	0.2790698	0.0692115
Open defecation (yes=1, else=0)	0.2325581	0.0651874

N=43

Table 1.c) Descriptive Statistics: Controlled Tourism Region

Variable	Mean	Std. Error
Income <5000Rs pm=1, (5000-12000)NRs pm=2, >12000NRs pm=3	1.651163	0.1407295
Education (years of school)	2.186047	0.5785534
Distance from nearest road (walking hours)	18.43721	1.603267
Caste (high=1, else=0)	1	0
Toilet (no=0, bad=1, okay=2, good=3)	0.6976744	0.0782907
Water (no=0, limited=1, good=2)	0.627907	0.0942609
Disease (yes=1, else=0)	0.4186047	0.0761225
Open defecation (yes=1, else=0)	0.9767442	0.0232558

N=43