Kailash Sacred Landscape Conservation (KSLCI) Strengthening Project - Nepal
Tourism and Climate Change Final Report

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This CCAP document is the final synthesis report on tourism and climate change for the KSL Nepal region. It has been produced to contribute knowledge to the Kailash Sacred Landscape Conservation Initiative (KSLCI) “Strengthening Project”; with technical support from the International Centre for Integrated Mountain Development (ICIMOD), the United Nations Environment Program (UNEP), as well as financial support from the Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (GTZ).

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Abbreviations

ACAP        Annapurna Conservation Area Project
AR4         IPCC’s Fourth Assessment Report, 2007
CBT         Community Based Tourism
DDC         District Development Committee
EIA         Environmental Impact Assessment
ENSO        El Niño-Southern Oscillation
GLOFS       Glacial lake outburst floods
GTZ         Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
HKH         Hindu Kush Himalaya
ICIMOD      International Centre for Integrated Mountain Development
IEE         Initial Environmental Examination
INGO        International Non-Government Organisation
IPCC        Intergovernmental Panel on Climate Change
KSL         Kailash Sacred Landscape (the region)
KSLCI       Kailash Sacred Landscape Conservation Initiative (the initiative)
LSGA        Local Self-Governance Act(s)
MoTCA       Ministry of Tourism and Civil Aviation
NAPA        National Adaptation Programme of Action
NGO         Non-Government Organisation
NTB         Nepal Tourism Board
PES         Payments for environmental services
SARS        Severe acute respiratory syndrome
UNEP        United Nations Environment Program
USP         Unique selling point(s)
VDC         Village Development Committee
1 Executive Summary

This final report sets out the methodology and key findings that have resulted from a study into tourism and climate change in the Kailash Sacred Landscape region of Nepal. This research was carried out to scope out the opportunities for, and barriers to, promoting sustainable tourism as an adaptation strategy; not only reducing community vulnerability to climate change but also as an important poverty alleviation measure.

A mix of conceptual analysis and stakeholder engagement processes were employed to identify the key linkages between tourism, climate change, and sustainable livelihoods. Whilst the primary focus of this piece of work has been on the specific interactions between tourism and climate change, findings from this piece of research reflect a highly complex socio-ecological system, with many social, economic, environmental and institutional drivers involved. Further investigation beyond this scoping study will be needed in order to gain a more comprehensive understanding of how community based tourism can best be planned in order to ensure that sustainable livelihood objectives can be met for this remote and less developed region (currently characterised by land-based subsistence living).

Whilst there is a range of climate-related hazards already impacting these mountain communities, the most critical issues for local stakeholders are linked to either too much or too little water. Of particular note are recent episodes and experiences with relatively dry conditions (droughts, lack of seasonal snow), as well as shifts in monsoon activity (rainfall intensity as well as late start and cessation of wet season). This has direct implications for issues such as adequate food security throughout the year and is seen by many as a critical challenge to be addressed (affecting both locals and tourists), and may be further compromised by a changing climate in the future. That said, and as is stressed throughout the report, climate change needs to be understood in a context of multiple stressors, as recognised by the policy drive towards poverty alleviation and sustainable regional development.

Based on the preliminary findings from this research, the report concludes with a series of recommendations which are intended to contribute to the development of an upgraded and more comprehensive strategy in support of community-based tourism as a sustainable livelihood option for local communities. These are discussed in respect of: geographic up-scaling; improvements to existing scientific evidence base; institutional arrangements; bringing together bottom-up and top-down approaches; demand management; and the importance of learning from experience.
2 Introduction

2.1 The KSLCI Strengthening Project - Tourism and Climate Change

The Kailash Sacred Landscape Conservation Initiative (KSLCI) is in the process of developing a transboundary conservation strategy as part of its current ongoing preparatory phase (phase one, 2009-2011). The KSLCI is part of a process which is building towards a Regional Cooperation Framework involving China, India and Nepal, with technical support from the International Centre for Integrated Mountain Development (ICIMOD), the United Nations Environment Program (UNEP), as well as financial support from the Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (GTZ).

The KSLCI focuses on a transboundary region encompassing parts of northern India, northwest Nepal, and southwest China (see Figure 1). The initiative is characterized as a long-term commitment, one that reflects a strategy based on participatory approaches and an improved regional knowledge base. The project: “…aims to promote community-based, ecosystem, and sustainable development approaches that empower local communities, promote gender equity, and improve people’s livelihoods…” (ICIMOD / GTZ, 2010, p.4).

Figure 1. The KSL region and its boundaries (ICIMOD, 2010c)
ICIMOD, with the support of GTZ, is coordinating the implementation of a “Strengthening Project”, an initiative designed to support the overall objectives of the KSLCI during its phase one stage. The overall objective of the Strengthening Project is “…to improve the understanding of environmental change within the KSL, and to identify and develop alternative livelihoods strategies, with enhanced socio-ecological resilience by mountain communities for climate change adaptation…” (ICIMOD / GTZ, 2010, p.2). The Strengthening Project aims towards three major outcomes:

1. Local knowledge on the uses of ecosystem services is documented and assessed in terms of its applicability for adaptation to climate change. The knowledge gained is processed and ready for integration into the KSL Regional Cooperation Framework.
2. The potential of inclusive eco-tourism as a strategy for adapting to climate change in the Nepalese section of the KSL is analysed. The gained knowledge is ready to be integrated into the Regional Cooperation Framework. A framework for developing eco-tourism in the Kailash landscape is prepared.
3. The necessary infrastructure and capacity for gathering essential environmental and climatic data is in place. Continuous environmental and climatic monitoring is ensured.

The tourism component of the Strengthening Project (outcome 2, highlighted in bold type) focuses on a study of the potential for tourism as a strategy for livelihood improvement and adaptation to climate change in the KSL. The tourism component consists of three interrelated sub-components, these being:

1. Strategic Tourism Planning;
2. Himalaya Heritage Routes; and
3. Tourism and Climate Change.

This report relates to the third sub-component of the Strengthening Project on tourism, namely ‘Tourism and Climate Change’. Professor Darryn McEvoy (Principal Investigator), supported by Dr Carolina Roman and Dr Prem Chhetri from RMIT University, were engaged as the sub-component’s International Consultant, working closely with the appointed National Consultant, Mr Ram Chandra Sedai from the Centre for Environment and Sustainable Tourism Development (CEST), Nepal.

2.2 Aims and objectives
The primary objective of this final report is to address the outcomes of the third of three responsibilities assigned to RMIT under the Terms of Reference of this research activity, which seeks:

3. To assess and document climate opportunities and risks in tourism development as an adaptation strategy for KSL Nepal, including conceptual analysis, case study and identification of initial steps for an upgrading strategy

(ICIMOD / GTZ, 2010, p. 4)
The assessment has relied upon traditional analytical methods such as a desk-based literature review but also draws from various forms of existing local knowledge – both quantitative and qualitative, as well as first-hand experiences through consultative engagement with relevant stakeholders in the field. This report presents the outcomes of this assessment under the following sections:

**Section 3 - Research methodology.** This section presents an overview of the general approach adopted for engaging with local stakeholders, as well as methods for data and information gathering and synthesis

**Section 4 - Conceptual analysis.** Presents a generic overview of the role of tourism in supporting sustainable alternative livelihoods as evidenced in the literature, and on the potential impacts of climate change in mountain regions that will have to be accounted for in any future development plans.

**Section 5 - The KSL Nepal case study.** Presents an overview of current climate and non-climate drivers of change specific to the KSL Nepal case study, and some of the implications for development and adaption strategies in the local context, as observed from field interactions.

**Section 6 - Institutional opportunities and barriers.** Provides a summary background of some of the key institutional opportunities and barriers to adapting to climate change and promoting more sustainable community-based tourism initiatives.

**Section 7 - Upgrading strategy.** This penultimate section elaborates on the possibilities for sustainable tourism development in KSL Nepal, reflecting on some of the key lessons and making recommendations for areas requiring further study and analysis. Particular emphasis is placed on how this knowledge can best inform ‘up-scaling’ efforts for the broader KSLCI study; including transboundary considerations with neighbouring regions in China and India.

Finally, in **Section 8**, some final conclusions and summary of recommendations are provided.
3 Study Methodology

3.1 Overall approach
The activity undertaken to produce this report was underpinned by a range of different research methodologies. These included a review of relevant academic literature (International Consultant, covered in section 4), as well as analysis of national and regional ‘grey’ literature in support of institutional analysis and policy mapping (National and International Consultants, covered in section 6). However, arguably the most critical (and valuable) component of the research was a process of engagement with local experts and stakeholders to elicit their knowledge, experience, and guidance in identifying issues pertaining to tourism practices in the KSL region of Nepal, as well as their perspectives on the impacts of current day weather-related hazards (and future climate change). More specifically, the stakeholder engagement activities were designed to collect primary data that directly supports the second of three responsibilities assigned to the International Consultant under the Terms of Reference for the project (see box below).

2. To conduct intense stakeholder consultations, both in Kathmandu and in the field:
   a) To support and provide technical assistance to the national consultant in the design, planning and organization of stakeholder workshop on identifying risks and opportunities facing different tourism products.
   b) To lead and facilitate the stakeholder consultation workshop in Kathmandu, in close collaboration with the national consultant.
   c) To collect stakeholder feedback and integrate in the final report, with details in annex (e.g. minutes of key comments/remarks).
   d) To conduct ‘on the ground’ interviews with local communities and other key stakeholders in the field, and collect other relevant data in the field.

(ICIMOD / GTZ, 2010, p. 4)

This document pays particular attention to the fieldwork that was carried out, with points a) and b) above addressed in greater detail in separate documents. These detail the discussions and outcomes of the stakeholder engagement workshops held in Kathmandu (see Roman et al., 2010a) and Simikot, Humla (see Sedai, 2010). Where relevant, a summary of some of the key findings are also incorporated into this final ‘synthesis’ report.

The overall study approach adopted by the International Consultant, in close collaboration with the National Consultant, was that of a “bottom-up” and consultative sustainable livelihoods approach centring on problem-oriented enquiry. A sustainable livelihoods approach entails an understanding of the activities carried out for the subsistence of the community at the centre of the enquiry (Eriksen and O’Brien, 2007, Smit and Wandel, 2006), which is also applicable in the tourism development context where tourism can be considered as one of several means for enhancing local livelihoods (Asker et al., 2010, UNWTO, 2010).
Participatory approaches that were adopted during engagement activities (i.e. workshops and interviews) were central to the investigative process and relied on bottom-up consultative means for eliciting views, concerns and experiences from local knowledge through active deliberation and exchange of views and values on issues of interest (Salter et al., 2010). This approach focuses on identifying the main factors (positive and negative) that influence local livelihoods and their interrelationships, as expressed by the participating community (Smit and Wandel, 2006). In doing so, the views and insights provided by the participants were used to validate and guide on-going project efforts by directing attention to those issues of concern that have traction and interest amongst local communities, as well as helping to highlight those issues that require further investigation and consideration.

### 3.2 Data collection and analysis

The analysis of secondary sources of data relied on existing and published documents such as scientific papers and journal articles, reports, publicly available databases, government briefings and reports, NGO/INGO reports, as well as through references and information made available in the KSLCI Feasibility Report provided by ICIMOD (see Chaudhary et al., 2010).

A brief stakeholder analysis report was prepared by the national consultant during the second week of September 2010, identifying and listing key participants for the stakeholder engagement workshops held in Kathmandu and Simikot. The fieldwork component for KSL was then carried out by the International and National Consultants in Kathmandu and in Simikot (Humla), during a three week period from 21 September to 12 October 2010. Although the KSL Nepal region spans across four districts, namely: Humla, Baitadi, Darchula and Bajhang (see Figure 2 and Figure 3), it is important to note that the consultants carried out their field research in KSL Nepal in the Humla district only, using Simikot as their main base.

![Figure 2. Location map of KSL Nepal (Chaudhary et al., 2010)](image)
The recruitment and participation of the stakeholder participants was arranged primarily by the National Consultant, with the support of ICIMOD, relying on existing networks to invite a broad and mixed representation of stakeholders from government, industry, NGOs, as well as local community representatives and interested parties in the tourism sector. A total of 32 participants attended the Kathmandu workshop, including the facilitators and other KSLCI consultants that are involved in the wider Strengthening Project (see Roman et al., 2010a and Appendix A). A total of 42 participants were present at the workshop held in Simikot, Humla (see Sedai, 2010).

Additional primary (or ‘first hand’) qualitative data were then collected by the International and National Consultants in Kathmandu and in Simikot (Humla) over a three week period, employing various means of stakeholder engagement methods (see Table 1).

Table 1. Engagement activity and data collection methods employed

<table>
<thead>
<tr>
<th>Engagement activities</th>
<th>Methods employed</th>
<th>Data references</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workshops (held in Kathmandu and Simikot)</td>
<td>Focus-groups and break-out group discussions; surveys; value-chain analyses;</td>
<td>(Sedai, 2010, Roman et al., 2010a)</td>
</tr>
<tr>
<td></td>
<td>open forum Q&amp;A; feedback forms.</td>
<td></td>
</tr>
<tr>
<td>Eliciting stakeholder views and experiences through field visits</td>
<td>Semi-structured and unstructured face-to-face interviews; field observations.</td>
<td>Section 5 and Appendix C (this report)</td>
</tr>
</tbody>
</table>
For these semi-structured and unstructured interviews, ethics approval was sought and granted from RMIT University, Australia\(^1\). A total of 33 individuals were interviewed as part of semi- and unstructured interviews conducted during the fieldwork period (see Table 11, Appendix C).

While in the Humla District, the team carried out field activities both in Simikot, as well as along the principal trade and pilgrimage route from Simikot to Hilsa, along the Karnali River (see Figure 4, and Appendix B).

\[\text{Figure 4. Major trekking routes in Humla (Chaudhary et al., 2010)}\]

\[\text{Plate 1. Interviewing in Yalbang (Photo: Ram Chandra Sedai)}\]

\[\text{Plate 2. Overnight stop and interviews at Dhand Kermi (Photo: Carolina Roman)}\]

\(^1\) Approval number 2000377-07/10.
Plate 3. Interviewing in Pani Naula Humla (Photo: Carolina Roman)

Plate 4. Campsite owner and operator, Kermi (Photo: Carolina Roman)

Plate 5. Interviewing in Simikot (Photo: Ram Chandra Sedai)

Plate 6. Break-out group discussions at Simikot workshop (Photo: Carolina Roman)
3.3 Study limitations

Due to the nature of this study there are some obvious limitations, and caveats, that need to be brought to the attention of the reader. Summarising, these include:

- The research project being only a short-term contract (September – December 2010), and hence restricted in the breadth and depth of analysis possible. Essentially, this report provides a ‘rapid’ assessment in support of the KSLCI initiative and seeks to distil some of the key issues of local concern; to identify some of the significant gaps in data, empirical evidence, and knowledge; and to highlight some of the research areas that in the opinion of the authors warrant further investigation.

- Although the project brief identifies the study area as being KSL Nepal, this encompasses four districts along the far and mid-west regions of Nepal, namely: Baitadi, Darchula, Bajhang, and Humla. Due to the time and resource constraints mentioned above the fieldwork and the bulk of the interviews were carried out in the Humla District. Whilst some generalisations are made across the entire KSL region, these would need to be further investigated in greater detail as part of the broader KSL project roll-out (climate risks and adaptation being strongly context specific). For instance, climate change will impact differently for regions in the high Himalayas versus those lower-hill areas further south in other districts.
4 Conceptual analysis

4.1 Introduction

This analytical section draws from a desk top review of international academic literature, with particular attention paid to issues affecting climate change and tourism in mountain regions (Section 4.2), community based tourism (Section 4.3), and the inter-linkages between climate change, tourism, and sustainability goals (Section 4.4). Acknowledging the importance of sustainable livelihoods, as well as addressing issues of equity, the final sub-section introduces some key ‘inclusivity’ issues requiring consideration (Section 4.5). Whilst this section on desk top analysis is generic, the discussion is intentionally filtered for relevance to the KSL context.

4.2 Climate change and tourism in mountain regions

The impacts of climate change are already being felt in many parts of the world, with tangible impacts on biophysical systems and consequently for the human systems that rely on these for subsistence and livelihoods (IPCC, 2007b). Mountain regions, in particular, are recognised as early indicators of climate change, given their sensitivity and susceptibility to significant climate variability and global environmental change (Kohler et al., 2010, Kohler and Maselli, 2009, Macchi, 2010). Furthermore, mountains themselves can play a significant role on regional and global climatic patterns, with direct consequences for local and downstream ecosystem services.

Given the observed and projected trends in climate change and variability (in particular an increase in the frequency and magnitude of extreme events), mitigation and adaptation agendas are being increasingly advocated as the necessary means to address future climate risks and associated vulnerabilities (IPCC, 2007a). Adaptation to unavoidable change is considered most critical for regions that rely on climate sensitive activities such as agriculture (Dubois, 2005, Food Security Monitoring Task Force, 2010) and tourism (Nyaupane and Chhetri, 2009, UNWTO, 2008). However, despite the heightened profile given to climate change in a tourism context, until recently the emphasis has been on mitigation rather than adaptation (Scott et al., 2006, UNWTO, 2008). Furthermore, much of the focus in mountain regions studies has been largely on biophysical vulnerability to the potential impacts of future climate change (Roman et al., 2010b). However, best practice in climate change adaptation now acknowledges a need for a more integrated assessment of the interconnections between processes, outcomes, and responses, within a broader context of change, including human factors (Adger et al., 2009). For instance, prevention of climate-related impacts needs to address the social and environmental precursors that serve as conditions for turning extreme weather events into disasters (Stehr and Storch, 2005), with the potential to also impact negatively on important economic activities such as tourism.

The attractiveness, or draw, of a particular region as a tourist destination is strongly shaped by 1) its natural and cultural environment, and 2) climatic factors, such as temperature (UNWTO, 2008, Gómez Martín, 2005). Therefore, a changing climate poses significant challenges for tourism, as it not only influences tourists’ choice of destination but also the local conditions in which tourism and other climate-related livelihoods co-exist. Changes to average temperatures will therefore affect the ‘competitive balance’ between different regions of the world. Further issues are likely to arise when considering weather variability and changes to the frequency and intensity of extreme events. These will affect the
characteristics (and appeal) of a season-specific tourism offer, either through extreme or unseasonal events such as storms and flooding, or indirectly through impacts such as drought. In contrast to changes to longer-term averages, extreme events are considered to have the most visible and immediate impacts at the destination level, with greatest direct impact on local communities (UNWTO, 2008, UNISDR, 2005). Extreme events can adversely affect transport, personal safety and comfort, communication, water and other vital resources availability, and natural attractions such as wetlands, snow, glaciers, forests, as well as cultural heritage sites (see Table 2).

### Table 2. Key risks facing mountain regions as a result of global environmental change - potential impacts on tourism

<table>
<thead>
<tr>
<th>Key climate-related risks for mountain regions (adapted from Kohler and Maselli, 2009)</th>
<th>Potential impacts on mountain-based tourism*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water and Glaciers</strong>&lt;br&gt;Issues with availability of water may be exacerbated under climatic change, in many cases due to glacial melts, scarcity (less precipitation) and/or inadequate infrastructure. This can have implications for irrigation, domestic use, and hydropower generation locally, with impacts further downstream at a regional level.</td>
<td>• Disruptions to provision of local goods and services;&lt;br&gt;• Flooding may have health and safety implications for visitors;&lt;br&gt;• Limited carrying capacity may mean hosting fewer tourist numbers.&lt;br&gt;• Changed landscape may affect aesthetic appeal (e.g. due to lack of snow)</td>
</tr>
<tr>
<td><strong>Hazards and Disasters</strong>&lt;br&gt;Mountain areas are typically exposed to multiple hazards. Climate change is likely to increase this exposure, as extreme events such as storms, landslides, avalanches, glacial lake outburst floods (GLOFS) and rockfalls are expected to become more common and more intense in mountain areas, threatening both livelihoods and infrastructure.</td>
<td>• Disruptions to transport and mobility, as well as provision of local goods and services;&lt;br&gt;• The impact of extreme events may have health / safety implications for visitors, as well as impacting on the appeal of a region;&lt;br&gt;• Loss or damage to critical infrastructure and/or places of significant cultural heritage;&lt;br&gt;• Post disaster recovery and rebuilding efforts delaying local capacity to host tourists.</td>
</tr>
<tr>
<td><strong>Biodiversity</strong>&lt;br&gt;Half of the global biodiversity hot spots are in mountain regions. They are an important global heritage that is being threatened by climate change and human action. While mountain biodiversity is increasingly seen as a global common good, issues can arise when local communities directly depend on its services for their livelihoods.</td>
<td>• Disruptions to provision of local goods and services that are directly and intricately linked to the local wildlife and biodiversity;&lt;br&gt;• Biodiversity loss may impact on the appeal of the region;&lt;br&gt;• Limited carrying capacity - hosting fewer tourist numbers.</td>
</tr>
</tbody>
</table>
Food Security
The large majority of mountain people live in developing countries. One third of them are food-insecure, a high proportion when compared globally. Mountains are often ‘limited-choice’ environments due to harsh living conditions and a marginal position in terms of economic integration and political decision-making. Climate change is already having an impact on agricultural cycles, affecting productivity.

- Disruptions to provision of local goods and services that are directly and intricately linked to local food availability;
- Implications for food availability for locals and tourists alike;
- Limited carrying capacity - hosting fewer tourist numbers.

Migration and other socio-economic issues
Seasonal or permanent labour migration has important effects on labour markets in mountain regions, with the potential to influence community development. Climate change can be a catalyst for migration, primarily in rural areas, where impacts on the productivity of the land and viability of pastures render out-migration a means to make a living elsewhere. This also has the potential to decrease the social capital and community ‘connectedness’.

- Disruptions and/or lack of provision of local goods and services;
- Limited availability of local labour force may mean hosting fewer tourist numbers.
- Loss of local social capital and cohesion, affecting the cultural appeal of the region

* Also based on feedback and discussions with stakeholders at workshops and during field interviews

Despite these many drivers of change, and potential implications for tourism, there is also growing awareness of the significance of mountain ecosystem goods and services and their potential role in offering opportunities for diversified livelihood options for mountain people, for which tourism can play a supporting role. Some of these emerging opportunities, listed in Macchi (2010), include:

- An increased demand for mountains as places for recreation;
- An increased demand for high-value mountain products and freshwater;
- A recognition of the potential of mountains for carbon sequestration;
- A recognised conservation ‘sanctuary’ for species which can no longer survive or be grown in the lowlands; and
- Means for the generation of hydropower.

Other potential opportunities that may arise in the KSL context are linked to positive local action that exploits a lengthening of the tourism season, reinforced by a subsequent lessening of outmigration from mountain areas. However, as noted by Macchi (2010) more generally, evidence that these opportunities have been translated into tangible rewards for the provision of such services by mountain communities, is still lacking in many places. Furthermore, careful consideration of local needs and wants as well as their perceptions on these opportunities (whether positive or negative) is paramount when characterising their value and acceptability at the local scale. As yet, at least to the authors’ knowledge, there has been no comprehensive assessment of local perceptions to these or other ecosystem goods and services opportunities in KSL Nepal, or indeed whether they are practicably feasible across the region in a sustainable manner. Given that ecosystem goods and
services opportunities are advocated as a fruitful means to mitigate some of the impacts of global change in mountains (as listed in Table 2), and by default on any tourism development efforts, an emphasis on this type of evaluation as part of future KSLCI project activities would be highly beneficial.

4.3 Community based tourism

In the context of KSL Nepal, it is important to recognise and consider the type of tourism development that is envisaged, as well as its compatibility with what is desirable and feasible on the ground. According to records and documents from ongoing KSLCI stakeholder engagement processes (Chaudhary et al., 2010, ICIMOD / GTZ, 2010, ICIMOD, 2010a), the type of tourism development that is envisaged for the target region reflects a sustainable livelihoods approach through Community Based Tourism (CBT).

The CBT concept, alternatively referred to as ‘Sustainable Tourism’, ‘Rural tourism’ and ‘Eco-tourism’, is generally small scale involving interactions between visitor and host communities, and is particularly suited to rural and regional areas (Asker et al., 2010). Regardless of terminology used, the practice is commonly understood to be one that is managed and owned by the community for the community, and is an approach already widely implemented in Nepal (Upadhayaya and Sharma, 2010, Nyaupane and Chhetri, 2009). It is a form of tourism practice and business model that sources its goods and services locally, as well as focusing on interpreting and communicating the local culture, its environment, as well as its biodiversity conservation initiatives (Asker et al., 2010, UNWTO, 2010).

The following attributes are common to CBT operations (after Asker et al., 2010):

- Aims to benefit local communities, contributing to their wellbeing and the wellbeing of their cultural and environmental assets;
- Hosts tourists within the local community;
- Manages a communal tourism management scheme;
- Shares and distributes profits and benefits from tourism ventures;
- Uses a portion of the profits/resources for community development and/or to maintain and protect a community cultural or natural heritage asset (e.g. conservation);
- Actively involves communities in tourism planning, on-going decision making, development and operations.

As a major driver of change, tourism practices (including CBT) can have both positive and negative (or less desirable) outcomes for communities. However, it may well be difficult to differentiate between these impacts from tourism and the many other factors that can introduce change, particularly when processes of modernisation and globalisation are widespread (Nyaupane et al., 2006, Picard and Wood, 1997). Nevertheless, not only is planning, awareness and education essential to enhance opportunities positively whilst minimising risks, it is also important to take into account the intrinsic values that render certain practices acceptable for the host community. Without this explicit engagement with those whose common interests are being affected, it can lead to what is often termed ‘maladaptation’ (Adger et al., 2009). Maladaptation in a CBT context means divergent or conflicting goals for development that do not necessarily advance (in fact may well hinder) desirable outcomes as defined by a community, resulting in policy failures. One way in which this can be assessed, is through an evaluation of local or host communities values and attributes that enable favourable conditions for CBT development, against potential barriers (see Table 3). This also allows for an appreciation of the degree to which a host community
is able to embrace tourism development, which is often considered in conjunction with a number of critical socio-political, cultural, economic and environmental factors that are important to them (Nyaupane et al., 2006).

Table 3. Enabling conditions, and barriers to the development of community based tourism (CBT) initiatives (sourced from Asker et al., 2010)

<table>
<thead>
<tr>
<th>Enabling conditions for good practice CBT</th>
<th>Barriers to the development of CBT (and potential ‘maladaptation’ pitfalls)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The community is already well organised and cohesive</td>
<td>The foundations of the community are fragmented and unorganised</td>
</tr>
<tr>
<td>When community members are widely involved in decision making processes, and financial management around the CBT</td>
<td>Decision-making is purely the domain of powerful individuals (usually males), and the benefits are not equitably distributed</td>
</tr>
<tr>
<td>Land ownership and other ‘resource’ issues are clear and well defined</td>
<td>Land and resource disputes are rife and recurrent</td>
</tr>
<tr>
<td>‘Bottom up desire’, in the community reflected in the facility design, decision making and management structures.</td>
<td>‘Top down’ centralised decision making and management structures where CBT is ‘placed’ on a community. Local perception that the motivations is purely financial</td>
</tr>
<tr>
<td>Decision for CBT is made by the community based on informed choice of impact, options, risk, and outcomes</td>
<td>There is no real local decision making or it is based on limited information and no consideration of options</td>
</tr>
<tr>
<td>High participation levels</td>
<td>Participation wanes during implementation of the CBT facility</td>
</tr>
<tr>
<td>Driver is not purely income generation but also cultural and natural heritage conservation and intercultural learning</td>
<td>Drivers are solely financial</td>
</tr>
<tr>
<td>The activity is supported by good marketing mechanisms</td>
<td>Little marketing or misplaced marketing</td>
</tr>
<tr>
<td>A strong plan for expansion, and/or to limit visitor numbers in balance with the carrying capacity of the community and environment to avoid adverse effects on both</td>
<td>When the provision of tourism services are passive and there is a lack of future planning (to the detriment of the community and the natural landscape)</td>
</tr>
<tr>
<td>Strong partnership with local NGOs, relevant government bodies and other supporters</td>
<td>Established through external funding mechanisms</td>
</tr>
<tr>
<td>Approaches are contextually and locally appropriate and not just ‘imported’ from other contexts</td>
<td>The CBT venture is seen as a ‘one size fits all’</td>
</tr>
<tr>
<td>CBT is part of a broader/wider community development strategy</td>
<td>CBT is seen as a quick fix ‘way up and out’ of a poverty cycle</td>
</tr>
<tr>
<td>Linked to visitor education on the value of culture and resources present. Clear zoning of visitor and non-visitors areas</td>
<td>No attempt to inform visitors of the specific nature of local natural and cultural heritage so there is no sense of the uniqueness of ‘place’</td>
</tr>
<tr>
<td>There is good existing infrastructure to access the product</td>
<td>Infrastructure is inadequate and there is no potential for investment</td>
</tr>
</tbody>
</table>
Nyaupane et al (2006) discuss some of the limitations of a CBT approach that are worth noting, their findings based on empirical evidence from other case studies found in the literature. These centre on the lack of investment capital, know-how or infrastructure necessary to take the initiative in developing tourism. Another limitation centres on the potential cultural limitations that impede broader involvement in the planning and management of tourism. For many in remote communities, tourism and its associated commercial realities may be a difficult concept to ‘grasp’ by people living in these isolated rural communities. Furthermore, where centralised forms of governance are in place, there may be a perception that it is the central government’s duty to plan economic development opportunities for their region and therefore not appropriate for them to take the initiative. In some instances, governments have been known to make decisions that favour dominant segments of the community and discriminate against underrepresented groups (Garrod, 2003). This can be further compounded in areas where local tourism planners lack the expertise or resources for meaningful participatory processes, which is a problem that certainly resonates in the Humla context (Roman et al., 2010a, Sedai, 2010).

It is also worth noting the many lessons learnt in other regions of Nepal, where the socio-economic circumstances prior to formalised forms of tourism development took place. One such case illustrates the conditions found in the Annapurna mountain region where in the 1980s tourism developed without significant central supervision (see Table 4). In many of these agrarian communities with no prior exposure to substantial tourism development and/or activity, there was little understanding of the potential impacts of tourism if allowed to flourish from demand side pressures that can dictate the course of tourism development (Nyaupane and Thapa, 2004).

Table 4. Social and environmental issues in the Annapurna region prior to the Annapurna Conservation Area Project (ACAP) (Nyaupane et al., 2006, Nyaupane and Thapa, 2004)

<table>
<thead>
<tr>
<th>Issues of concern</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Explosion” in trekking tourism, upsetting the delicate environmental and cultural balance of the area</td>
<td>(Gurung and De Coursey, 1994)</td>
</tr>
<tr>
<td>Depletion of forest resources due to extraction of firewood for cooking and timber for building lodges</td>
<td>(Ives and Messerli, 1989)</td>
</tr>
<tr>
<td>Littering and waste pollution</td>
<td>(Gurung and De Coursey, 1994)</td>
</tr>
<tr>
<td>Loss of Sherpa youngsters’ interest in monastic life and school to join trekking groups</td>
<td>(Pandey, 1994)</td>
</tr>
<tr>
<td>Loss of children’s interest in school to beg from tourists</td>
<td>(Mehta, 1995)</td>
</tr>
</tbody>
</table>

Banskota and Sharma (1997), cited in Nepal (2000), report that while there were many successes in the ACAP that addressed these and other issues of concern, as well as improving the social and environmental carrying capacity for that region, less attention was paid to economic carrying capacity and distribution of benefits. This was said to be particularly problematic since economic carrying capacity is a vital attribute for not only improving the economic conditions of the local people but to maintain momentum and credibility of sustainable mountain tourism initiatives in the eyes of the community. Therefore, Nepal (2000) cautions and recommends that future similar initiatives take particular care and
prioritise those mechanisms that would allow for resources to trickle-down broadly, as well as emphasising other complementary activities that expand the economic base of destinations i.e. promoting the diversification of livelihood options.

4.4 Linking climate change, tourism, and sustainability goals

In tourism studies, there are only a few examples that examine the notion of a holistic 'systems-based' approach that considers the impacts of climate change on both the supply side of the tourism sector (the destination) and its demand side (tourist markets) (see for example: Dawson and Scott, 2010). Coupled with this phenomenon, are the already existing and on-going issues (often non-climatic factors) that can compound impacts and create complexity in its assessment and evaluation. As a result, climate change is one of many concerns that compete for the limited resources, including attention of local tourism stakeholders, and in practical terms it often takes a low priority (Roman et al., 2010b, Roman et al., 2010a)\(^2\). However, this is not to say that climate change issues are not important. Instead, addressing climate change concerns is often best conceptualised and integrated with stakeholder’s personal experience of climate-related hazards such as unseasonal or extreme weather events in the recent past, rather than scenarios of potential impacts sometime in the distant future. Personal experiences are often inescapably raised within a much broader array of issues, many of which are in fact consistently and often more prominently raised as concerns for the tourism development agenda. In other words, climate change cannot be assumed to be the most important issue of concern in a given context. Instead, it must be ‘placed’ and mapped within those issues that take precedence for the local community, hence illustrating the importance of the ‘bottom-up’ and consultative approach adopted in this study.

Using a problem-oriented approach (Brunner, 2000), it was possible to focus selectively (yet comprehensively) on those issues and concerns that resonate on the ground. In doing so, a shared common goal could be defined that addresses both climate change adaptation and sustainability outcomes - otherwise referred to as mainstreaming adaptation with valued outcomes (Swart and Raes, 2007, Ziervogel et al., 2006) (see Figure 5).

\[\text{Figure 5. Shared common goal between sustainable livelihoods approaches and climate change adaptation (adapted from Roman et al., 2010b)}\]

\(^2\) Interview No.2 (21 Sept. 2010), Bhrikutimandap, Kathmandu
One of the first and most fundamental processes that benefits the delivery of any sustainable outcomes in any given context, centers on stakeholder and citizen participation (Kasemir et al., 2003). Involving these participants in climate policy debates (such as the development of tourism as an adaptation strategy to climate change) is necessary given that their consent would be required for minimizing risks both during implementation and beyond. Climate policies that are consistent with the visions, beliefs, and aspirations of participants is said to deliver greater success in the long run than policies imposed without the input of those concerned (Kasemir et al., 2003, Eriksen and O’Brien, 2007, O’Brien and Wolf, 2010). On a more practical level, community development projects that are designed and incorporated as part of the KSLCI could include measures that prioritise participatory engagement (e.g. focus groups in place), giving participants the opportunity to self-assess and self-determine how they will be involved in CBT and associated local development activities.

Another fundamental requirement that benefits the delivery of sustainable outcomes, is an effective and manageable monitoring framework that allows for continual and critical appraisal of adaptation strategies (Folke et al., 2005, Knight et al., 2008, Reed et al., 2006, Thompson et al., 2006, Brunner and Lynch, 2010), for instance as CBT initiatives are both developed and implemented. One way to achieve this, is by raising local capacity for data gathering (such as at local transport hubs), and/or other forms of evidence-based means of measuring monitoring progress. The long-term sustainability of this initiative would also benefit from the active support of institutions and governments through political will and capacity (ICIMOD, 2009).

4.5 Women, marginalized and socially excluded groups

Developing a tourism concept based on ‘sustainable livelihoods development’ calls for ensuring that social sustainability criteria, and not merely environmental and economic sustainability, are established and met as part of any activities under the KSLCI. Questions of gender, social equity and inclusion are critical to a holistic, sustainable approach to tourism development in the region. The Millennium Declaration and the Millennium Development Goal 3 (i.e. ‘to promote gender equality and empower women’) reflect a particular emphasis on gender equality.

A focus on gender equality recognizes that women tend to benefit less from development activities, which can perpetuate their social marginalization. Research conducted on labour migration trends in the Western Hindu Kush-Himalayas (HKH), found that it tends to be a predominantly male phenomenon, where women are generally left behind to attend the fields in the villages (Hoermann et al., 2010). Emigration of the male population to seek employment and livelihood options away from the base village is said to lead to the feminisation not only of mountain agriculture, but also of the overall mountain economy in the western HKH. Through this process of feminisation, women are said to take on more responsibilities at the place of origin and make decisions that are relevant to the development of their communities (ibid). Yet, despite this situation, women are still found to be less involved in decision-making over land and other natural resources compared to men (Enarson, 2000), often heavily involved in manual agricultural labour at the time of critical community-based deliberation and decision-making (Majerus, 2009).

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3 In the limited time spent in the field, the consultants were able to observe instances of gender equity issues, for instance the poor female representation and gender imbalance at the stakeholder workshop held in Simikot (see Sedai, 2010).
On the other hand, there has been reported cases where empowerment of women has been enhanced by tourism, and therefore there is potential to extend on the lessons learnt for the benefit of others (Nyaupane et al., 2006, Nyaupane and Thapa, 2004). A thorough power and inequality analysis of the region can form the basis for developing a set of community development and CBT activities that focus on building more equitable access to resources across existing social divisions.

In multi-ethnic, multi-religious, societies such as Nepal, and indeed in multi-cultural districts such as Humla, a focus on gender inequality needs to be expanded to include other marginalized groups of society, such as the economically poor, the elderly, children and youths, landless households, members of lower castes, and regional ethnic minority groups. Effort needs to be put into the design and planning stages of CBT projects to identify suitable processes and mechanisms for how real economic and social benefits derived from tourism activities can be delivered to marginalized groups in different geographic locations in KSL. This could be achieved through social vulnerability and capacity assessments carried out by researchers with expert ethnographic and sociological knowledge of the KSL region. These assessments could investigate the regional political economy of KSL and its underlying fabric using a series of carefully selected case studies, where key marginalized groups and the institutions that drive or trigger marginalization are identified and analysed in the context of tourism development.

Social vulnerability and capacity assessments should also be followed and complemented by capacity building and participatory planning processes that are mindful of local imbalances of power and social segregation. True participation based on equity principles also means that local marginalized groups are not only consulted but directly involved in decision-making and goal-setting processes. This could mean establishing a stream of community development projects as part of the KSLCI specifically targeting gender inequality and marginalization, where different marginalized groups identified by way of social vulnerability assessments are given the opportunity to self-assess and self-determine how they will be involved in CBT and associated local development activities (see also Section 4.4).

A plethora of methods for participatory inquiry and planning exists could be used for this process, including focus group discussions, mapping, seasonal calendaring and preference ranking techniques (e.g. (ICIMOD, 2010b). In a recent project on climate change adaptation planning, for example, participatory video was used successfully as an innovative means for engagement and empowerment of women (Khamis et al., 2009). All of these methods, if properly implemented, have the objective of generating trust in, and ownership of, project activities and the KSLCI as a whole through ongoing participation and purposeful interaction with various actors involved in the KSLCI.

It is also crucial that equity considerations are built into project design, as it has proven difficult to ‘add on’ a gender or equality approach to activities or programs designed without specific analyses of gender and power being carried out prior to project implementation (Ahmed and Fajber, 2009, Nelson and Stathers, 2009). It may be required, for example, that discussions, planning sessions etc. are undertaken with individual social groups, such as local farming women, female-headed households, groups of landless rural labourers, specific ethnic minority groups etc. Engaging with individual groups separately helps ensure that participants are enabled to express their views and opinions in a closed, protected environment – opinions that may otherwise not be voiced. However, these recommendations
are of strategic, exploratory nature only and substantial planning would be required for each of the activities mentioned above.

Also worthy of note, is that in countries such as Nepal child labour is widespread and children are absorbed readily into the tourism industry (Lim, 2008, Nyaupane et al., 2006). From direct service provision and employment in tourism facilities to indirectly supporting families to provide goods and services, children play diverse roles in enabling the industry to function. While such labour is necessary for the economic sustenance of families with low-incomes, it is also desirable to develop educational opportunities for children and widen the livelihood base such that there is less reliance on child labour. This is consistent with the UN's Millennium Development Goal 2 ('achieve universal primary education'). Unless CBT addresses this important equity concern, unequal relations between the key tourism stakeholders will continue to persist and the development of local communities will remain undermined.

Equitable distribution of the benefits of CBT, economic and otherwise, should be a key concern and priority for the KSLCI given the number of lessons from various other examples of such approaches elsewhere in Nepal (Dhakal et al., 2007, Lim, 2007, Lim, 2008, Nyaupane et al., 2006). In these examples, tour operators are said to be the primary economic beneficiaries, however, it is often unclear to what extent local communities actually benefit from the tourism activities. Beyond economic gains for services and goods provision, there is little documentation on how tourism has benefited a certain local community and enhanced their human development, local resource base and well-being (Nepal, 2000). Ideally, CBT good practice should aim to contribute to such aspects of community development beyond simply viewing local communities as participants of the functioning and progress of tourism activities. Greater attention needs to be paid to how much economic investments made in the tourism activities actually remain within the community and are harnessed productively for its long-term and sustainable development, in relation to the profits made by the tour operators and fulfillment enjoyed by the tourists. This is particularly relevant in the context of communities that have low human development conditions - marginalized or impoverished. In such cases, tourism can be a crucial means to address some of the structural factors underlying such conditions.
5 Case Study KSL Nepal

5.1 Context
This section presents an overview of current trends in climatic and seasonal change in Nepal, and the potential implications for development and adaptation strategies in the KSL region, as documented in previous studies and observed from the workshops and field interactions. In the first instance, some of the main issues of concern raised by workshop and interview participants are highlighted and discussed. In doing so, the focus is intentionally the local context as the foundation of this enquiry. This is then followed by an overview of some of the main trends and conditions affecting these identified issues, based on publicly available secondary data. This allows for a more concrete and tangible depiction of the magnitude of these problems, as well as exploring the linkages between issues.

5.2 Key issues of concern raised by stakeholders

5.2.1 Overview
A number of issues were raised by stakeholders as part of the fieldwork phase of the research (see also Section 3.2), though it is important to note the context in which these issues were raised, as more often than not these were influenced to some extent by the types of questions asked. Of concern and relevance to the research team, were issues pertaining to the interaction between weather, climate and tourism. Using a questionnaire guide (see Appendix D), interviews were carried out in a semi-structured manner in order to distil issues of local concern. However, it was just as important to allow the space and the opportunity for stakeholders to raise other issues of concern, which may or may not be characterized as climatic factors. The importance of allowing for this space centers on the problem-oriented and context-specific approach adopted for this study, and an understanding that climate change is only one of a number of stressors that will impact the region in the future (see section 3.1). It is also important to reiterate that whilst most of these discussions were raised in the KSL Nepal context, the vast majority are directly related to the Humla District, and more specifically, the Simikot to Hilsa route. Table 5 provides a summary of the main issues of concern raised with respect to weather and climate-related hazards, as well as other socio-economic factors (listed in no particular order).

<table>
<thead>
<tr>
<th>Weather and climate-related concerns</th>
<th>Other socio-economic issues of concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Floods</td>
<td>• Lack of basic infrastructure</td>
</tr>
<tr>
<td>• Dry conditions (drought)</td>
<td>• Weak socio-economic base</td>
</tr>
<tr>
<td>• Strength and duration of the monsoon</td>
<td>• Lack of energy resources / reliance on wood fired stoves</td>
</tr>
<tr>
<td>• Unseasonal, uncertain and extreme weather conditions</td>
<td>• Food insecurity</td>
</tr>
<tr>
<td>• Landslides (precipitation)</td>
<td>• Loss of cultural identity</td>
</tr>
<tr>
<td>• Non-availability of long range weather forecasts</td>
<td>• Governance issues (multi-level policy and politics)</td>
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<tr>
<td></td>
<td>• Carrying capacity</td>
</tr>
<tr>
<td></td>
<td>• Waste management</td>
</tr>
<tr>
<td></td>
<td>• Illegal hunting and poaching</td>
</tr>
<tr>
<td></td>
<td>• High costs of travel, goods and services</td>
</tr>
<tr>
<td></td>
<td>• Perceptions of tourism and tourists</td>
</tr>
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<td></td>
<td>• Unequal distribution of opportunities</td>
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</tbody>
</table>
These issues of concern were derived from records gathered at the Stakeholder Workshops in Kathmandu and Simikot, as well as interviews conducted in Kathmandu and along the Simikot-Hilsa route (Roman et al., 2010a, Sedai, 2010). The wider context for each is as follows:

5.2.2 Weather and climate-related issues

Flooding
Flooding were first discussed during the Stakeholder Workshop in Kathmandu, with reference to a significant flood event that occurred in Limi Valley (Humla) in the mid-2000s. Of particular local concern, was the level of exposure and damage to infrastructure such as trails and adjacent land, as well as the potential loss of buildings of significant cultural value in the village of Halji. The topography of Limi Valley was described as deep, long and narrow, thus directly influencing the nature of these flash flood events. Also of note is the location of a glacier at the head of the valley, which according to some interviewed, has seen melt water increasing in volume in recent times.

Another flash flood event in 1989 was described by a tea house operator in Salli Khola, located at the Junction of the Bajura-Bajhang trail, Limi Valley trail (via Nyalu La), and Simikot and Hilsa trail (via Nara La). The flash flood event was attributed to a glacier melt and avalanche from the Nyalu La headwaters, resulting in the loss of a wooden bridge and vegetation along the banks. No casualties or livestock losses were reported. Other instances of flood were only mentioned in a general sense by interviewees along the Simikot-Hilsa route.

Dry conditions
Dry conditions / drought were also highlighted (a lack of both rainfall and snowfall were regularly brought up as an issue of concern, primarily by those living and operating in Humla). The recent experiences with the 2006 drought, and again in 2009, were events that had palpable consequences for agricultural activities across Nepal (Jolly, 2009b, Jolly, 2009a), with many in Humla reporting low yields in production and in some instances even crop failures. Interviewees in Yari, Humla, had also reported severe shortages of drinking water in the village especially during the winter when there was both less snowfall and late rainfall.

However, a distinction needs to be made between significant reductions in precipitation, surface stream flows, and spring/aquifer recharge levels (amounts and availability of water) versus inadequate or non-existent infrastructure to extract and transport water into villages for domestic or irrigation use (access to water). From responses gathered in the field, issues with water availability and dry conditions were attributed to either one or both of these situations; however no clear assertion could be made on patterns of water shortages given the lack of context-specific information and data on conditions affecting every village and settlement in different ways.

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4 Interview No.17 (1 Oct. 2010), Salli Khola, Humla
5 Interview No. 28 (2 Oct.2010), Yari, Humla
Strength and duration of the Monsoon
As with dry conditions, the strength, duration, as well as the onset and cessation of the 2010 monsoon was a commonly cited problem, primarily by those living and operating in Humla. The duration of this year’s monsoon was particularly problematic, given that the associated rains persisted well into September when normally this would have ceased much earlier in the season. One impact was reported to center on air transport constraints into Simikot (the only means of transport), given that airplanes could not fly or land into Simikot, therefore directly impacting on what would normally be expected to be their busiest time for tourist arrivals. Another direct impact was felt by the agricultural sector, where significant delays post-monsoon had significant impact on harvesting and field preparations for the winter.

Unseasonal, uncertain and extreme weather conditions
Unseasonal events were primarily noted with respect to the monsoon (see previous point), but also with respect to snowfall events. Many mentioned the low snowfall levels experienced over the 2009-10 winter, also noting that snowfall events have been happening much later in the season (in February and March) which affected some crops. Snow later in the season was also described as being ‘slushy’, creating very wet and muddy conditions. Some of the interviewees highlighted that these conditions created problems for many of the flat roofs that are typical in Humla, causing seepage problems as well as ‘slumping’, leaving some houses structurally weak.

Landslides and debris fall
While landslides can be triggered by a number of non-climatic triggers (such as earthquakes or natural geomorphological processes), the nature of landslides that were described in Humla were said to have been triggered by heavy rainfall events, particularly during the monsoon season as also experienced in other parts of Nepal (Dahal et al., 2009). Erosion and landslides were a particular problem in Halji (Lim Valley) and along the Sari Salla-Tiplyang section and Devkotabhadha-Jogimara section of the Simikot-Rara trail. Debris fall was also observed to cause obstruction problems in the Thade Dhunga along the Nara La to Hilsa trail, primarily due to prolonged dry conditions in winter as well as rapid melting of spring snow, often compounded by road construction.

Non-availability of long range weather forecasts
This issue was brought up by tourism industry representatives, who noted a lack of, or inaccessible, reliable information and/or data relating to weather conditions in Humla. This was considered a hindrance to tourism planning activities, particularly for operators located in Kathmandu. The condition is further compounded by the poor communication channels that inflict the region.

5.2.3 Socio-economic issues

Lack of infrastructure
One of the most resounding issues of concern raised in the Humla context, was the chronic lack of basic infrastructure to service the needs of the local population (e.g. toilets, housing, irrigation works, transport options, etc.), let alone meeting the needs of tourists. In other cases further east of Humla, Nyaupane and Thapa (2004) have previously reported on the successes in improving basic conditions through infrastructure provision (such as toilets) that

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were funded from tourism and awareness programs. This gives tangible evidence of the potential for improving livelihoods through tourism.

**Weak socio-economic base**

Not only was Humla widely considered, and described by respondents, as one of the most economically impoverished regions of Nepal; concerns were also raised in the context of education and levels of literacy in the community as well as a lack of capacity, knowledge and opportunities to seek capital and other forms of investments / aid into the region. For many that operate in the tourism sector this was perceived to be a crucial hindrance to tourism promotion and development, compounded by a lack of awareness about the commercial realities of tourism and what it means to be an entrepreneur in the sector.

**Lack of energy resources**

Lack of access to energy sources was raised in the context of a high level of reliance on wood fired stoves throughout Humla. It was noted that access to timber was becoming costly, and that increasing demands were resulting in additional stressors such as deforestation. This is a problem that is also compounded by reported instances of illegal timber harvesting to service construction and energy needs in the region, as well as across the border into India and China (Chaudhary et al., 2010). In many homes, access to reliable electricity was also very limited or altogether non-existent. This situation prompted many in the workshops to signal these energy needs as significant opportunities for the introduction of renewable energy options, such as solar or biogas, which would also have the added benefit of greener and more ecologically responsible tourism practices (Roman et al., 2010a).

**Food insecurity**

In places like Humla, the average agricultural production output for consumption is said to be only sufficient for 3 to 5 months - in a good year (Hobbs, 2009). This level of output is also highly dependent on climatic variables - these areas are said to be among those most impacted by the increasing prevalence of drought and natural disasters caused by a changing climate (Hobbs, 2009), thus reducing the availability of food following an extended dry period. Indeed, food insecurity in Humla was found to be one of the most resounding concerns amongst many stakeholders interviewed, reflective of the reported experiences with severe droughts in the region (MAC/WFP/FAO, 2009, Hobbs, 2009).

There are already many existing geophysical constraints for local food production in this region i.e. the availability and space for arable land, soil condition and fertility, altitude, and means for irrigation. However, these conditions were also found to be further constrained by climatic change and unseasonal variability (as well as population demands) particularly in the winter and pre-monsoon months when shortages can be severe and the need for food importation is greatest. Another aspect of food insecurity was attributed to an increasing reliance and dependence on subsidized food items supplied under programs run by the Nepal Food Corporation, and supported by the World Food Program. Whilst alleviation of the short-term food shortage is welcomed, concerns were raised over the long-term effects of this dependence. Some argued that this dependence is affecting the local agrarian “know-

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7 Interview No.6 (28 Sept. 2010) Simikot.
how", as subsistence farming knowledge and techniques are lost to the purchase of food supplies.9

Respondents from villages located furthest away from the transport hub of Simikot, such as in Yari, Muchu and Yalbang, reported that food supplies under these programs were difficult and inconvenient for them to obtain given the little amounts of food allocated and/or available to them given the long distances needed to travel to obtain it.10 Some mentioned the relatively easier or more convenient coping strategy of purchasing food items, such as rice, in bulk from suppliers across the border in China – even though, in some instances, this results in higher costs for lower quality rice.11

However, some positive aspects of a changing climate were also noted, for instance the increasing variety of food items such as types of vegetables that can now be grown in relatively warmer conditions compared to earlier years.12 To capitalise on these opportunities to expand the food base, a few respondents also mentioned the use of (as well as advocacy for) small-scale greenhouses to support food production.13

Loss of cultural identity
A few respondents raised concerns about the cultural integrity and preservation of culture and identity in Humla. Shifts in social values particularly as a result of exposure to and influence of modernisation and globalisation were noted as factors contributing to this trend, as well as education levels amongst those that can afford to obtain schooling (Roman et al., 2010a). Most respondents felt that preserving cultural identity should be a priority going forward and that tourism development can assist in this objective. This is despite the fact that few also raised concerns that increased tourism and exposure to international tourists may erode the genuineness in cultural preservation initiatives.14 (Roman et al., 2010a).

Governance
Issues relating to governance (particularly across spatial scales) were raised by many respondents as a significant challenge for current development planning and future tourism development efforts. Some of the main issues of concern raised centered on the ongoing political instability and volatility within the central government in Kathmandu15 (Roman et al., 2010a). This was noted to be particularly problematic, given that Nepal has had no prime minister since the previous prime minister resigned in June 2010, leaving a political vacuum which has effectively stalled institutional decision-making and funding for many government initiatives and programs (Jolly, 2010). Political instability and conflict in Nepal has had significant impacts on livelihood options in the past – including tourism (Upreti and Müller-Böker, 2010), and many of those interviewed expressed a lack of confidence or trust in the current institutional arrangements to prevent such shocks and impacts from occurring again.

A significant point of discussion during workshops, centred on the issue of local access to tourism related revenue such as trekking permit fees. Comments were made that there are rules, regulations, and clauses in Nepali legislation that allow for this transfer and access to

10 Interview No.18 (1 Oct. 2010) Yalbang.
11 Interviews No.20 (2 October 2010) Muchu; and No.18 (1 Oct. 2010) Yalbang.
12 Interview No. 6 (28 Sept. 2010) Simikot.
15 Interviews No. 2 (21 Sept. 2010) and No.3 (23 Sept. 2010) Kathmandu.
revenue streams, however there are institutional and/or political barriers with its distribution as well as a systemic lack of awareness and/or capacity at local government levels (DDCs and VDCs) to enact on these provisions and lobby for their access (Roman et al., 2010a).

For some respondents in Humla, their relative isolation from central governments meant that they felt marginalized and absent from deliberations on policy decisions of relevance to them. Concerns were raised regarding the noticeable absence of involvement by district government officials and their representatives in local village affairs\(^\text{16}\). Others emphasised transboundary governance practices, where irregular and unpredictable decisions on border crossings between Nepal and China have caused major inconveniences for trade and tourists traffic, sometimes blocking transboundary access to goods and services for weeks\(^\text{17}\).

**Carrying capacity**

Discussions and concerns regarding carrying capacity were raised by respondents primarily in workshops (Roman et al., 2010a, Sedai, 2010). The main issue was defining a common understanding on what would constitute limits of acceptable change and ecological carrying capacity across KSL Nepal\(^\text{18}\), considering a variety of specific characteristics and contexts at local scales. This is particularly relevant in the context of food insecurity issues as raised by respondents in Humla.

**Waste management**

Issues pertaining to waste management related mostly to mounting litter and general waste disposal in villages and along the Simikot-Hilsa trail (Chaudhary et al., 2010, Roman et al., 2010a, Sedai, 2010). A chronic lack of basic infrastructure to deal with human waste and its associated consequences for health was also cited – both for the local communities and tourists. Many respondents voiced concerns regarding the latter grouping, describing the situation as a significant deterrent for tourists to stay in lodges and hotels (many of which lack these facilities)\(^\text{19}\), choosing instead for organized self-sufficient camping alternatives that can cater for these needs. However, a lack of facilities also means that contamination and pollution are being exacerbated by increasing traffic from both travellers and tourists, directly affecting the aesthetic appeal of the region.

**Illegal logging and timber harvesting**

Issues of illegal hunting and poaching were discussed in the context of logging and timber harvesting in Humla; a practice opted for by locals who seek to supplement their livelihoods by servicing the construction and energy needs in the region, particularly across its borders with India and China (Chaudhary et al., 2010). Evidence of logging and timber transportation were observed along the Simikot-Hilsa route, as well as stockpiles of timber products in the forested areas between Salli Khola and Yalbang. Timber transportation was observed over the Nara La towards the Chinese border, where a lack of local government officials and policing in these remote areas means the practice continues unregulated\(^\text{20}\). One respondent also mentioned that timber and non-timber forest products are used by some locals to obtain other goods at the border through bartering\(^\text{21}\). Given that forms of bartering are still practiced

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\(^\text{18}\) Interview No.1 (21 Sept. 2010) Kathmandu.


\(^\text{20}\) Interviews No.21 and No.23 (2 Oct. 2010) at Tumkot and Nara La respectively.

\(^\text{21}\) Interview No.32 (9 Oct. 2010) Kathmandu.
in this region, it therefore means that forest products have a certain value and used as a commodity for locals to obtain goods.

As noted in the KSL Nepal feasibility report, as well as from numerous respondents in the field, there is significant trade and revenue generated from timber and non-timber forest products in Humla i.e. trade in timber and medicinal plants (Chaudhary et al., 2010). Most of these forest-based ecological services are managed by the government, however a significant portion of this activity also falls under community forest management, and other arrangements such as leasehold (Chaudhary et al., 2010). However, there was no evidence or data available at the time of this field survey to be able to clearly differentiate between the extent of legal and permissible harvesting versus illegal logging and poaching of forest-based products. Furthermore, studies conducted elsewhere in Nepal suggest that harvesting of forest products in community forests is also highly dependent on numerous socio-economic variables, where land and livestock holdings, caste, education, and economic status play significant roles on how and who gets to appropriate benefits from these ecological services (Adhikari et al., 2004, Varughese and Ostrom, 2001). In many of these cases it was found that the poorest households face the most restricted access to community forests than ‘less poor’ or relatively better off households (Adhikari et al., 2004). However there was no available information to be able to characterise the extent of these livelihood equity issues in Humla at the time of this study.

If sustainable forest practices are to be incorporated as part of a suit of measures and livelihood options in KSL Nepal and KSL more generally, then there is a critical need to establish these baselines for future management, considering also the close relationship that these ecological services have for tourism development potential in the region. In addition, a comprehensive appraisal of legislation, policy processes and practices needs to be undertaken – both in KSL Nepal and the wider transboundary region - in order to critically appraise and evaluate the effectiveness of current forest management arrangements against broader sustainability goals for the region.

High costs of travel and goods
Given the limited access options for Humla travel into the region is primarily via air transport. This results in extremely costly travel which is also reflected in the high costs of food items and other goods brought into the region (Chaudhary et al., 2010, Majerus, 2009). Many respondents, both at the workshops and in the field, commented on the very high prices they pay for items brought into Simikot via air transport, pointing out the high levels of volatility and unregulated price fluctuations when transport is affected by adverse weather conditions, other access limitations, or when stocks decline versus demand (Roman et al., 2010a, Sedai, 2010). This is also an issue closely related to the food insecurity experienced in this region. For many tourism operators in Kathmandu and elsewhere this was considered a constraint on their trip planning and product offer (Roman et al., 2010a).

Local perceptions of tourism and tourists
For many in the industry sector, there was discontent expressed towards the government’s attitude on tourism, some describing their frustrations at the government’s lack of appreciation for the business and commercial realities of tourism – in particular, that tourism should not be regarded as a charity22.

Another issue discussed was that, whilst many hospitality and tea house owners along the Simikot-Hilsa route expressed a general acceptance of tourism, there was a resounding perception that the benefits from tourism are unequally distributed and therefore have a perceived low benefit for the broader local community. Of particular concern were tourists that do ‘self-sufficient’ treks with operators from outside of the region, often sourcing supplies such as food or camping items from Kathmandu and therefore not purchasing locally. This is a problem that is also prominent in other contexts elsewhere in Nepal (e.g. see Nyaupane and Thapa, 2004).

Camping was also considered problematic in some instances, especially given the lack of space and land availability in such a hilly and constrained topography. Furthermore, some respondents described how animals used by some camping groups, such as horses and mules, compete with local herds and livestock for the already limited supplies and availability of grasslands and fodder\footnote{Interviews No.18 (1 Oct. 2010) Yalbang; and No.15 and 16 (1 Oct. 2010) Kermi.}

Local entrepreneurs suggested that western visitors are more important in terms of a target market for Humla than Indian visitors, despite the fact that Indian visitor arrivals into the region are proportionally much higher than western tourists (MoTCA, 2009). Some expressed concerns that Indian tourists, despite their significant numbers, very seldom spend more than one or two nights at Simikot or Hilsa – let alone anywhere along the pilgrimage trail - instead choosing direct air transport (such as chartered helicopters) to fly from Simikot to Hilsa and onwards to Mt Kailash\footnote{Interviews No.5 (28 Sept. 2010) Simikot; No.25 (2 Oct. 2010) Hilsa.}, thereby entirely bypassing the pilgrimage route through KSL Nepal.

Unequal distribution of opportunities
Linked to local perceptions of tourism and tourists in general (see previous point), is the issue of unequal distribution of opportunities brought in by tourism to the local community. It is argued that actual spending by tourists in remote destinations is very little as there are limited facilities to spend their money on. Instead, visitors tend to bring their supplies in from outside, resulting in minimal net economic impact (Nyaupane and Thapa, 2004). This was also observed in the field, as many interviewees were able to relate to this experience. This is supported by earlier studies, which found that tourists spend on average less than USD 100 on local products for the duration of their trip in Humla (Majerus, 2009).

Other issues of inequitable access to the benefits of tourism were raised with respect to the transport sector - particularly amongst those that do not directly benefit from revenue generated by the local air transport entrepreneurs (e.g. airlines and helicopter operators) (Roman et al., 2010a, Sedai, 2010).

5.3 Climate trends: Nepal

5.3.1 Analytical approach
Data on climate trends were derived from a number of publicly available secondary sources, including a report by the Society of Hydrologists and Meteorologists and commission by Practical Action Nepal titled "Temporal and Spatial Variability of Climate Change over Nepal (1976 - 2005)" (see Marahatta et al., 2009). Given the limited time resources available for this study, a complementary analysis that extends to 2009 was not conducted, also given
that climate records from the weather station located in Simikot, Humla were described by the Department of Hydrology and Meteorology as “of not good quality” and would therefore require quality checks and validation before these can be meaningfully utilised. Although Marahatta et al. (2009)’s analysis spans records based on the 1976-2005 climatic period, as well as presenting coarse spatial and temporal data, it nonetheless gives an indicative appreciation for climatic trends and conditions that have been experienced to date.

For the purposes of this report, the analysis is presented with respect to seasonal trends, given that seasonality and conditions in seasons (inter-annual variability) are the most relevant in the tourism context (Roman et al., 2010b, Gómez Martín, 2005). The conventional Nepali descriptions for the four seasons were used for this report, namely: Pre-monsoon (months of March to May); Monsoon (months of June to September); Post-monsoon (October to November); and winter (December to February). The following sub-sections present seasonal climate trends based on precipitation and temperature variables.

### 5.3.2 Trends in seasonal precipitation

Across Nepal, annual average rainfall varies greatly from less than 150 mm to above 5,000 mm (Marahatta et al., 2009). Despite significant spatial variability across Nepal, there are some generalizations that can be made on seasonal conditions based on records from 1976-2005 (see Table 6).

<table>
<thead>
<tr>
<th>SEASON</th>
<th>GENERAL DESCRIPTION BASED ON EXPERIENCED CONDITIONS</th>
<th>Average precipitation (mm)</th>
<th>% of total annual precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Monsoon (MAR-MAY)</td>
<td>Characterised by occasional thunder showers and hailstorms. Rainfall varied from less than 100 mm to over 900 mm. In the mid-western and far-western development regions were comparatively drier than the rest of the country during this season</td>
<td>235.5</td>
<td>12.68</td>
</tr>
<tr>
<td>Monsoon (JUN-SEPT)</td>
<td>Normally starts from the second week of June and retreats in the fourth week of September. Monsoon is the wettest season and is the main source of rainfall in Nepal, onset reaching the country from the east. The effect of monsoon is prominent in the eastern half of the country; with the western half especially the northern parts of mid-western development region (e.g. Humla) remaining drier.</td>
<td>1,318.5</td>
<td>79.58</td>
</tr>
<tr>
<td>Post-Monsoon (OCT-NOV)</td>
<td>Similar to the pre-monsoon rain. November receives the lowest rainfall of the year. The spatial distribution of rainfall is similar to the pre monsoon and monsoon seasons, with low rainfall (&lt; 25 mm) in the western half of the country</td>
<td>79.0</td>
<td>4.25</td>
</tr>
<tr>
<td>Winter (DEC-FEB)</td>
<td>Driest season, but winter rain is relatively higher in the far western development region where influence from westerly atmospheric disturbances occur.</td>
<td>64.9</td>
<td>3.49</td>
</tr>
</tbody>
</table>

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Seasonal trends for precipitation across Nepal are depicted in Figure 6. Between 1976-2005, pre-monsoon conditions in KSL Nepal (i.e. the northern mid-western and far western regions) experienced a decreasing trend in rainfall levels of up to 4 mm/year (see Figure 6 a). However, the extent of monsoon rainfall was observed to be generally increasing, reaching up to over 30 mm/year (see Figure 6 b). The trend reverses during post-monsoon towards drier conditions, with rainfall levels decreasing by up to 7 mm/year (Figure 6 c). The winter season has seen a mixed pattern across KSL Nepal, however Humla was found to have had experienced a decrease in precipitation of up to 0.8 mm/year on average from expected levels, partly explaining the lack of snow reported by residents (Figure 6 d).

These precipitation patterns are described as highly variable between seasons and decades, with no clear overall trend (Shrestha et al., 2000). However, the observed variability has been noted to correlate with the El Niño-Southern Oscillation (ENSO), where warm ENSO events (El Niño) tend to be associated with a reduction in summer monsoon strength and cold ENSO events (La Niña) are associated with increases in the monsoon (Shrestha et al., 2000, Shrestha and Kostaschuk, 2005, McSweeney et al., 2008, Kripalani and Kulkarni, 1997, Goswami et al., 2006). Furthermore, there have also been studies that report on the effects of soot and particulate matter on snow surfaces, suggesting that these have an accelerating effect on snowmelt and glacial retreat rates (Venzac et al., 2008, Sellegri et al., 2010, Yasunari et al., 2010). The significance of these phenomena is that these illustrate the intricate and complex interrelationships that impact upon climate systems, even at regional scales.

Figure 6. Trend in precipitation across Nepal (mm/year), during: a) post-monsoon; b) monsoon; c) post-monsoon; and d) winter; between 1976-2005 (Marahatta et al., 2009)
5.3.3 Trend in seasonal temperatures

Seasonal trends for mean temperature across Nepal is depicted in Figure 7, with inter-annual (seasonal) variability a defining feature. Between 1976-2005, pre-monsoon conditions varied across KSL Nepal, however a small increase in pre-monsoon mean temperatures were observed for Humla (see Figure 7 a), with a general warmer pattern during the monsoon (see Figure 7 b). However, during post-monsoon, the region has seen a decreasing trend towards slightly colder conditions (Figure 7 c), with the winter season returning to a generally warmer pattern across KSL Nepal (Figure 7 d).

Figure 7. Trend in seasonal mean temperatures across Nepal (°C/year) during: a) pre-monsoon, b) monsoon, c) post-monsoon, and d) winter, between 1976-2005 (Marahatta et al., 2009)

However, when it comes to describing maximum and minimum temperatures, as anomalies from the mean, the pattern appears to trend towards extremes, thus partially explaining the extent of high variability in mean temperatures across seasons. Across all four seasons, KSL Nepal has experienced an increasing trend in mean maximum temperatures (see Figure 8 a, b, c, d), including experiencing some extreme warm events, or ‘warmer than usual’ conditions.
Across all four seasons, KSL Nepal has experienced a decreasing trend in mean minimum temperatures (see Figure 9 a, b, c, d), including experiencing some extreme cold events, or ‘colder than usual’ conditions.

Figure 8. Trend in seasonal maximum temperatures across Nepal (°C/year), during: a) pre-monsoon, b) monsoon, c) post-monsoon, and d) winter, between 1976-2005 (Marahatta et al., 2009)

Figure 9. Trend in seasonal minimum temperatures across Nepal (°C/year), during: a) pre-monsoon, b) monsoon, c) post-monsoon, and d) winter, between 1976-2005 (Marahatta et al., 2009)
5.3.4 Summary of trends

General climatic trends in KSL Nepal show patterns of high inter-annual (seasonal) variability, with reported instances of extreme events such as droughts, floods, and unseasonal snow (or lack of snow). Table 7 presents a summary of the general trends for precipitation and temperature in KSL Nepal, based on the 1976-2005 record presented by Marahatta et al (2009).

Table 7. Summary of seasonal trends in KSL Nepal between 1976 to 2005 (Marahatta et al., 2009)

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SEASON</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-Monsoon</td>
</tr>
<tr>
<td>Precipitation</td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Mean ($T_{\text{mean}}$)</td>
<td>$\uparrow$</td>
</tr>
<tr>
<td>Minimum ($T_{\text{max}}$)</td>
<td>$\downarrow$</td>
</tr>
<tr>
<td>Maximum ($T_{\text{min}}$)</td>
<td>$\uparrow$</td>
</tr>
</tbody>
</table>

Overall, climate in the Nepal Himalaya is reported to be changing faster than the global average (Marahatta et al., 2009). This applies especially to temperature rise, which at higher altitudes is more pronounced than at lower altitudes (Baidya et al. 2008). Temperature observations, with respect to Nepal’s climate between 1977-1994, show a general warming trend with temperature differences most pronounced during the dry winter season, and least during the height of the monsoon (Sharma and Shakya, 2006, Shrestha and Kostaschuk, 2005, Shrestha et al., 2000). There is also significantly greater warming at higher elevations in the northern part of the country than at lower elevations in the south (Li et al., 2010). Significant glacier retreat as well as significant areal expansion of several glacial lakes has also been documented in recent decades, with an extremely high likelihood that such impacts are linked to rising temperatures. It is also argued that additional stressors such as soot and atmospheric particulate matter appear to be exacerbating this trend (Yasunari et al., 2010).

Although annual rainfall is abundant, its distribution is of greatest concern: flooding is frequent in the monsoon season during the summer, while droughts are not uncommon in certain regions in other parts of the year. Lang and Barros (2002) and Shrestha et al. (2000) report that the occurrence of monsoon in Nepal is generally dependent on depressions in the Bay of Bengal. However, when there is a reduction in the frequency of these depressions, for instance during an ENSO event (Shrestha et al., 2000), this can have an impact on seasonal rainfall totals.
5.3.5 Future climate projections

The trends described in Section 5.3 suggest that conditions in KSL Nepal can be expected to become drier during pre-monsoon, post-monsoon and in winter; hence directly impacting upon rainfall fed water catchments and availability of water. Although precipitation levels have seen modest increases during the monsoon, the greatest impacts can be expected in the form of intense or extreme rain event resulting in flooding and/or landslides and debris fall. Likewise, a shift towards a late onset and cessation of the monsoon is already observed to have clear impacts upon season-dependent activities such as tourism and agriculture.

More generally, McSweeney et al. (2008), consistent with IPCC projections (IPCC, 2007c), list the following summary of projections for climatic conditions over Nepal:

Temperature:
- The mean annual temperature is projected to increase by 1.3 to 3.8°C by the 2060s, and 1.8 to 5.8°C by the 2090s. The range of projections by the 2090s under any one emissions scenario is 1.5 - 2°C.
- All projections indicate some increase in the frequency of days and nights that are considered ‘hot’ in the current climate.
- All projections indicate decreases in the frequency of days and nights that are considered ‘cold’ in the current climate, and in much of the country, do not occur at all by the 2090s in some projections.

Precipitation:
- Projections of mean annual rainfall averaged over the country indicate an increase in rainfall over Nepal, largely in the monsoon season and in the South-East of Nepal.
- The proportion of total rainfall that falls in heavy extreme events is projected to increase, most noticeable in the monsoon season. The maximum increases projected by current model outputs suggest twice the magnitude of current average 5-day maximum rainfalls.

5.3.6 Recommendations for further investigation

Given the importance of water issues reported by respondents, such as availability and scarcity, the use of hydrographs (precipitation levels versus surface and river water flow levels and flood peaks) may be a more useful means to better characterise how precipitations levels and variability affects the availability and recharge rates for water sources in KSL across seasons. This information could also support a gap analysis that describes existing versus required infrastructure (e.g. piping, canals, wells, irrigation channels, etc.) to secure and meet the water needs of the community, particularly in Humla given their recent experiences with episodes of water scarcity that which may or may not be necessarily linked to water availability (see Section 5.2.2, under ‘Dry Conditions’).

Also, an evaluation of the biophysical and atmospheric conditions of historical extreme events (such as floods, extreme snow storm events, droughts, etc.) would support better future planning, by relating and documenting on those physical variables that play a significant role in conditioning or perpetuating their impacts. This information can also complement efforts for the development and planning of adaptation to climate change and adaptability more generally, given the detailed context in which concrete experiences with extreme events exist.
Finally, a more comprehensive and regionally-relevant investigation of climatic trends in KSL, through globally downscaled gridded climate data (temperature and precipitation) is recommended. Of particular relevance would be to examine trends in deviations or anomalies from the climate 'normal' for this region, i.e. at a much finer scale that addresses regional conditions. This would allow for better characterisation of magnitude and frequency of climate variability in the region, particularly in the face of uncertainties with projected future changes.

5.4 Tourism trends: Nepal

The number of incoming tourists to Nepal is benchmarked at approximately 500,000 visitors per annum26, with statistics for visitor numbers during the early 1990s and late 2000s supporting this trend (see Figure 10). However, tourism numbers were noted to be significantly affected during political conflicts in Nepal in the early 2000s, with reports of hotels closures, labour strikes, and demands by the Maoists contributing to a drop in visitor numbers in that period (Upreti, 2010, Upreti and Müller-Böker, 2010).

![Figure 10. Number of total tourist arrivals in Nepal per calendar year, 1998-2009 (MoTCA, 2009)](image)

With respect to seasonality, total numbers of visitors into Nepal peak in the months around the pre-monsoon and post-monsoon, when climatic conditions are expected to be generally drier and milder (see Figure 11). This pattern of seasonality was also observed during the period of political conflict in the early 2000s, however with a lower number of visitors noted. The same pattern of seasonality is also apparent for inbound tourists originating from destinations other than India (see Figure 12).

Figure 11. Total number of inbound tourists to Nepal (2000, 2003, 2006, 2009) (MoTCA, 2009)

![Graph showing total number of inbound tourists to Nepal by month (2000, 2003, 2006, 2009)](image)

Figure 12. Number of inbound tourists to Nepal, by month - excluding Indian tourists (2000, 2003, 2006, 2009) (MoTCA, 2009)

![Graph showing number of inbound tourists to Nepal, excluding Indians, by month (2000, 2003, 2006, 2009)](image)
During feasibility studies for the KSLCI project (see Chaudhary et al., 2010), as well as during the stakeholder workshop held in Kathmandu, it was noted that the tourist market originating from India is of important relevance for KSL Nepal given the significance of pilgrimages to Mt Kailash from Hindus in India. Trends for inbound tourists originating from India, indicate a peak in numbers during the monsoon months (see Figure 13), with the expectation that Indian tourists come to Nepal for its relatively cooler summer conditions.

Figure 13. Number of inbound Indian tourists to Nepal (2000, 2003, 2006, 2009) (MoTCA, 2009)

This pattern of inbound tourists from India, compared to other places of origin, display an 'out of phase' trend, with Indian tourists arriving in larger numbers in June and July, whereas other tourists tend to arrive during seasons at either side of the monsoon. Given that Indian tourist arrivals into KSL Nepal (especially in Humla) are significant compared to other tourists (Chaudhary et al., 2010), then the effects of climate variability and change during the monsoon season are also just as critical. Another interesting observation, is that inbound tourism into Nepal appears to take place in all but one season across the year (i.e. winter), meaning that the opportunity to spread risks of non-arrivals due to an event or shock (whether climate related or not) exists to some extent. Reviews of the data available suggest that despite peaks in inbound tourism during the pre- and post-monsoon, inbound numbers are not just 'locked-in' to one particular season.

Trends by tourism activity type, suggest a recent increase in tourist numbers for activities relating to trekking and mountaineering, with a significant drop in numbers arriving for pleasure or more 'passive' holidays (see Figure 14), as was also suggested by a Nepal Tourism Board representative during interviews.27 This supports the assertion that nature-

Based tourism, through the appeal of Nepal’s natural assets, is a significant draw card for tourists into Nepal (MoTCA, 2009).

![Distribution of tourist numbers, per tourism activity (2007, 2008, 2009)](image)

Figure 14. Distribution of tourist numbers, per tourism activity, 2007-2009 (MoTCA, 2009)

### 5.4.1 Tourism in the KSL region

Tourism data and statistics specific to KSL Nepal were much more difficult to obtain and verify, however indicative numbers of tourists into areas such as Humla can be inferred from the number of trekking permits issued by the Department of Immigration into regions categorised as ‘Restricted Areas’ (MoTCA, 2009). Trekking permits issued for Restricted Areas over the last decade indicate a steady increase of likely tourists into these regions; except for a sharp decline during political instability and insurgency in Nepal during the early 2000s (see Figure 15).

A slight dip in numbers were also noted during the late 2000s in Humla, with indications that this was attributed to Chinese border closures and stricter restrictions during the time of the Beijing Olympics in 2008 (Chaudhary et al., 2010). Verifiable data for seasonal trends were only available for 2009, with that year’s trend suggesting a marked peak in inbound tourists issued with trekking permits for the month of September, as well as the months of May and June (see Figure 16). These patterns of seasonal inbound tourist numbers correlates with the expected busy periods reported by respondents. However, expectations for similar (if not greater) numbers for inbound tourists for this year’s busy periods (particularly in September 2010), were said to be adversely affected by the shift in monsoon conditions that were experienced in Humla well into September 2010. Despite the fact that verifiable data to support this assertion is not yet available, nevertheless it is reasonable to assume that such conditions will have had a direct impact upon tourist arrivals during this critical time.
Figure 15. Total annual number of trekking permits issued for various Restricted (Controlled) Areas of Nepal, 1993-2009 (MoTCA, 2009)

Figure 16. Trekking permits issued by the Department of Immigration for Humla “Special (Controlled) Area” per month, 2009 (Department of Immigration figures, cited in MoTCA, 2009)
Tourism development at a destination level depends a great deal on the types of activities that are feasible as well as the landscape characteristics of the place. During stakeholder engagement workshops conducted in Kathmandu and Simikot, a number of tourism activities were identified as either actual (meaning they currently take place in KSL Nepal) or potential (currently no known cases of these activities taking place, but are considered to have the potential for development) (Roman et al., 2010b, Sedai, 2010).

Among those activities that are known to take place in Humla, two were noted as already being affected by the weather based on experiences of impacts in the recent past. These activities included: pilgrimages and trekking. For the purposes of clarification, pilgrimage and trekking activities were separated to reflect the distinct motivation factors that separate the two, where pilgrimage is characterised by spiritual and religious motivations versus trekking which was deemed to be motivated by nature-based and recreational objectives. Recreational activities range from less active tourism activities (e.g. bird watching, meditation) to more physically challenging and demanding recreation (e.g. horse riding, trekking, mountaineering, and rafting). According to respondents, the most important climatic factor to note is the issue of seasonality (and implications for seasonally-reliant activities) as well as the tangible effects of extreme or adverse weather events which are known to have a direct influence on the remote access to this region.

Conversely, consideration of the likely impacts that certain tourism activities exert is also warranted. Known impacts from trekking activities include impacts on the trail from the trekking activity itself, as well as associated impacts such as infrastructure and waste disposal (see Table 8). Given the current and potential expansion for trekking activities in Humla, a detailed assessment of specific impact studies associated with this activity would benefit future tourism development initiatives.

Table 8. Reported impacts associated with trekking as a tourism activity in mountain regions

<table>
<thead>
<tr>
<th>Impact</th>
<th>Description</th>
<th>Examples of published case studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trekking activity</td>
<td>Issues relating to numbers of trekkers and their physical impact upon the landscape and its aesthetic appeal</td>
<td>(e.g. Byers, 2009, Geneletti and Dawa, 2009, Pickering et al., 2010, Törn et al., 2009, Stubelj and Bohanec, 2010, McKay, 2006)</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Issues relating to the building and/or expansion of trekking trails and routes, as well as other tourism-related infrastructure such as transport hubs or accommodation</td>
<td>(e.g. Worboys and Pickering, 2002, Morgan and Carnegie, 2009, Stubelj and Bohanec, 2010, Hill et al., 2008)</td>
</tr>
<tr>
<td>Waste</td>
<td>Issues relating to waste, particularly on disposal of human waste in sensitive ecosystems, as well as litter.</td>
<td>(e.g. Bridle and Kirkpatrick, 2005, Bridle et al., 2007, Bishop and Naumann, 1996, Basnet, 1993, Manfredi et al., 2010, Ives and Messerli, 1989)</td>
</tr>
</tbody>
</table>

Two activities regarded as being more vulnerable to factors other than climate-related hazards were cultural/heritage and volunteer/educational tourism. These factors were characterised as being of socio-political and/or economic in nature (as described in Upreti, 2010), as well as concerns for the cultural integrity and preservation of culture and identity.
(as described in Lim, 2007, Lim, 2008). Shifts in social values, partly as a result of exposure and influence of modernisation and globalisation, were noted as needing further attention (Roman et al., 2010b).

5.5 Linking tourism, climate change, and sustainable livelihoods

5.5.1 Dealing with complexity – reconciling climate and non-climate concerns

As discussed throughout this report, a number of complex and inter-related issues were identified and elaborated on by local stakeholders. Therefore, despite the explicit focus on climate change and the implications for tourism, it is evident that many of the contextual issues and driving forces of change are not directly (or even necessarily) climate related, and as such tourism development / adaptation solutions need to be fully aware of the complexity of ‘socio-ecological’ interactions and potential feedback loops (McEvoy et al., 2010). Taking drought as an illustrative example: it is often perceived to be hydro-climatic in nature; although the problem is often one resulting from a complex interaction of climatic, hydrological, environmental, social, economic and cultural stressors, which all combine to create this phenomenon (Kallis, 2008).

This raises important issues for the assessment, given that it is often difficult to disentangle such a complex mix of interconnected issues. As such, it is imperative that follow-up activity to this ‘rapid’ assessment adopts a more comprehensive and integrated assessment of the issues to ensure that regional and sectorial responses are informed by the best available evidence. It will also be important to explicitly address ‘real world’ issues i.e. accounting for the context in which they exist (Roman et al., 2010b). Given the limited scope of this study, it is only possible to address the most obvious interactions between tourism, climate change and sustainable livelihoods, as well as highlighting gaps in knowledge where identified. This section should therefore be read as a ‘primer’ for a more detailed and comprehensive study of the KSL region.

5.5.2 Some key tourism and climate change interactions

International literature points out that climate change has the potential to impact tourism by affecting both demand and supply. However, due to the type of tourism currently supported in the KSL, and Nepal more widely, the demand side influence is likely to be comparatively minor, as much of the tourism activity - nature-based, trekking, pilgrimage etc. – can be considered relatively climate independent. In the cases when climatic factors do affect demand, it is likely that they will either be location-specific ‘push’ factors e.g. those escaping from excess heat in the summer months to seek the cooler climate of the mountain areas, or ‘pull’ factors such as changing seasonality potentially leading to new tourism opportunities.

The impact of climate change on tourism is much more likely to be felt through supply side effects, either directly on the landscape or alternatively on visitor behaviour (particularly the impact of extreme events and the implications for health and safety), or indirectly through complex interactions between the weather, natural and human systems.

Arguably the biggest climate-related issue facing communities (and tourism development) in the KSL region is the changing intensity and seasonality of the monsoon. This phenomenon has already shown itself to be problematic to the tourism sector by reducing visitors’ ready access to the region through flight cancellations and delays (problems are associated with both a ‘muddy’ runway and lack of visibility which raises safety issues). This is especially important given that KSL is highly dependent on aircraft for access. An increasing intensity of extreme rainfall events will also impact directly on the landscape, resulting in greater erosion.
damage to roads and trails (which may be further compounded by the desired increase in the number of visitors). High impact rainfall is also likely to increase the incidence of major landslides. One adaptation response would be to ensure that an effective demand management system was in place that directed visitors to less vulnerable locations.

Linked to this, evidence from the Humla District stakeholder engagement process also highlights the fact that at different times of the year local communities have been affected by either ‘too much’ or ‘too little’ water. Under both scenarios, there is the potential for tourism to be affected both directly and indirectly. Recent flooding (and flood damage to infrastructure) highlights an existing hazard that is already being experienced by KSL residents. Whilst particular concerns were raised by stakeholders regarding damage to the cultural heritage it is can also be said that the same risks would also apply to any new tourism facilities that may be developed. Due to the steep terrain in many places this has the potential to create enhanced risks of flash flooding with associated health and safety implications. The intensity and frequency of landslides and debris falls due to extreme or intense precipitation during the monsoon, are also characterized as medium to high (see Figure 17), especially for areas of high relief and exposed terrain (such as in the Limi Valley). Forward planning, including expert input from local stakeholders, will be needed in order to avoid unnecessary exposure to a range of different climate-related hazards.

Figure 17. Intensity and frequency of landslides (from precipitation) (UNEP/GRID-Europe, 2010)

The complex seasonality experienced in this part of the world also gives rise to a shortage of water, with unreliable and decreasing amounts of rainfall experienced by the region during winter and post-monsoon seasons, directly impacting on water availability as well as indirectly through a reduced capacity for this region to rely on their subsistence farming for food (Hobbs, 2009, MAC/WFP/FAO, 2009). Indeed, Humla is a much drier region that its neighbours to the east, a factor repeatedly cited by the stakeholders interviewed. Drought was seen as being one of the major drivers of hardship in the region and introduces an important caveat when considering any future development of CBT – that of environmental (ecological) carrying capacity. The food shortage was particularly chronic following the drought of 2009, cited not just in the climate change literature but also in studies by the World Food Program. This vulnerability situation is often described as one of ‘double exposure’. 
Given past climatic trends, KSL Nepal has experienced an increase in the frequency and severity of drought-like conditions; with an increase on the average number of drought-like events per year for the period between 1974 and 2004 (see Figure 18). Problems of a lack of water security are further enhanced by a deficiency in adequate irrigation infrastructure. Overall, issues surrounding both the quantity and quality of water supply may well affect tourists’ perceptions of the area in a negative way.

Figure 18. Frequency and severity of droughts (SPI): average number of events per year per pixel (for the period 1974-2004) (UNEP/GRID-Europe, 2010)

The inter-connectedness of socio-ecological issues is best highlighted by the climate / agriculture / tourism nexus. Whilst a changing climate, particularly changing patterns of rainfall, will bring fresh ‘coping’ challenges to already vulnerable local land use practices, there may well be opportunities to grow a variety of new vegetables and crops at these high altitudes as the seasons shift and change. This could be further enhanced with the adoption of small-scale greenhouses to maximize this potential. However, these are options that warrant further investigation as to their feasibility in the local context. As Hobbs (2009) notes, issues of food insecurity in Nepal are complex, and so are the solutions which require a cohesive strategy that targets four key areas, which include: agricultural production, trade and marketing; economic development; safety nets; and nutrition. The opportunities for economic development through tourism exist, however these must be considered with respect to the other three areas that are also key for securing a sustainable outcome.

Reduced snowfall and snow cover in the future will also impact on agriculture (as snow melt is used as a valuable water source). Research which increases local understanding of the adaptation and behavioral change action needed to respond to shifts in seasonality, and hence supports local livelihoods, would be extremely valuable in this regard. The fragile food insecurity issue can have very significant implications for tourism development, particularly given the expressed desire for an increase in sales of locally sourced food items for tourists and travellers. Carrying capacity, as evidenced by the availability of food, will need to be an essential consideration when planning for CBT in the KSL region. Reduced snow cover, particularly on scenic landscapes, will also affect the visual amenity of the region and potentially lessen the attraction for visitors. As a region that is experiencing fairly rapid
warming the retreat of glaciers are a prominent concern for locals (in the words of one interviewee – *snow makes the landscape*).

As noted in the academic literature, though beyond the scope of this study, a changing climate will also have implications for the spatial distribution of both flora and fauna. This is especially so for vulnerable mountain regions such as the KSL. Furthermore, it is possible that an increasing incidence of pests may become more of a problem in the future – however, this would need to be subject to further investigation by specialist research. This need for better scientific knowledge about potential impacts, and adaptation options, was highlighted by one interviewee who argued that a better understanding of climate change and local ecological functioning will ultimately be needed.

6 Institutional opportunities and barriers for tourism as a sustainable livelihood option

6.1 Context

This section provides an overview of the policy and governance architecture, in order to assess tourism development initiatives based on what is desirable and (importantly) feasible in the Nepali context. Given the limited availability of information on climate and tourism in Humla, for the purposes of this report it is only possible to highlight a number of preliminary (and tentative) observations with respect to the potential barriers and opportunities for tourism as a viable and sustainable livelihood diversification option for this region. For cohesion, these are separated out as governance and policy, before a final commentary which focuses specifically on tourism and sustainable livelihoods, with due consideration paid to climate change adaptation.

6.2 Governance and policy

6.2.1 Vertical integration of policy

In KSL Nepal, there are also numerous tiers of government that need to be taken into account when discussing governance and the mapping of policies that operate in this region (see Figure 19).

![Figure 19. Tiers of government and jurisdictions: Districts, Zones, Regions in KSL Nepal](image)
Nepal is divided into five development regions – Far Western, Mid-Western, Western, Central, and Eastern. These five regions in turn are divided into 75 districts. These districts are further disaggregated into 58 municipalities and 3913 village development committees (VDCs). Each municipality consists of between 9 and 35 wards; each VDC is composed of 9 wards.

From the engagement process with local stakeholders it is evident that there is a common perception amongst many stakeholders of planning being overly centralized, with a ‘Kathmandu bias’ towards policy development and decision-making, which is said to result in decisions that do not take local considerations adequately into account. To some extent, differences in how different actors frame issues were also evident in the two stakeholder workshops held in Kathmandu and Simikot, placing an additional emphasis on the importance of local ‘bottom-up’ analysis if policies are going to be given wholehearted local support. How best to more effectively engage with local communities in the planning stages of tourism development, and how to bridge the national, regional, and local, will be critical questions; not only in terms of policy and programme development but also to ensure that knowledge and resources are transferred effectively. Structures of governance will be even more critical bearing in mind the transboundary nature of the KSL region. Ultimately a transboundary and inclusive approach to dealing with regional development will be needed.

### 6.2.2 Horizontal integration of policy

It is clear that the promotion of sustainable forms of tourism in the KSL region will need greater cohesion of policy not just across spatial scales but also across different, sometimes conflicting, policy areas. For instance, the national 5 year development plan (currently the 3 year interim plan: 2007-2010) sets out the overall vision and policies for the country, as well as individual sectors such as tourism. This interim plan has highlighted tourism as a potentially powerful economic tool for poverty alleviation. It also stresses the importance of maximising tourism retention at the local level. Specific to tourism, the Tourism Policy 2008 (MoTCA, 2008) sets out a goal to diversify tourism – namely eco-tourism - into different geographical locations and to improve access whilst also seeking to maintain conservation efforts at protecting the natural and cultural heritage. The Ministry of Tourism and Civil Aviation is the main ministry for overseeing tourism development in Nepal, though a wide range of other public, private and NGO organisations also have an interest and an important role to play.

Other policies that impact on tourism (and will need to be considered) include: Immigration Act 1993 (responsible legislation for designating restricted areas and setting out permit regulations), Environment Protection and National Parks Acts etc. A list of examples is included in Appendix E.

Whilst adaptation to climate change will become an increasingly important societal issue, international analysis has argued that the creation of new institutional arrangements to manage and respond to the changes is not always necessary, rather existing organisations – with adequate resources and knowledge - can also have an important role to play (McEvoy et al., 2006). This is the case for the Humla tourism and climate change case study. At a strategic level the District Development Commission of Humla is well placed to actively support tourism development in the region, in line with the underpinning Humla Development Initiative (2004-2005). More specific to tourism issues, the Tourism District Committee will be pivotal in acting as a ‘learning’ and ‘consensus building’ space for both promoting CBT and
ensuring that any new facilities and/or activities are adequately climate proofed. Both these organisations are identified in the Tourism Policy 2009 as having lead roles to play in the ‘development, management and promotion’ of tourism resources. Furthermore, making sure that there are mechanisms in place that enable local voices to be heard, and promoting a sense of ‘ownership’ to CBT initiatives, will be vital to the success of using tourism as a sustainable livelihood strategy.

Tourism planning will also need to actively promote benefits for those normally marginalised parts of the community – this will require a better understanding of existing power structures as real concerns exist about the unequal distribution of opportunities. This highlights the need for a much more comprehensive analytical study to better understand the existing institutional arrangements as part of any upgrading strategy (see section 7). The benefits from CBT need to percolate to all corners of a community. In the KSL context, youth clubs, mothers groups, VDC and the Chambers of Commerce were all identified as important stakeholders. Nationally important actors are the Nepal Tourism Board, the National Planning Committee, and Ministry of Home Affairs.

6.2.3 Tourism and sustainable livelihoods in KSL

Tourism has been identified as a prime opportunity to alleviate poverty in the KSL region, with CBT both highlighted in tourism policy documentation (MoTCA, 2008) and set for widespread strategic promotion in the Nepal tourism year, 2011 (one example of branding being the Great Himalaya Trail, which includes the Humla district). However, whilst a sustainable form of tourism is being heralded as a possible key driver of development in the future there are two notes of caution that need to be raised. Firstly, although there are obvious economic benefits to an expanded tourism sector, CBT should not be seen as a panacea rather as one promising option amongst a diverse portfolio of sustainable livelihood opportunities. Indeed, international research has shown that an emphasis on diversity of land-based activity (ensuring flexibility to react to, and cope with, climate-related shocks) makes a valuable contribution to adaptation goals in the face of future climate change (Werners et al., 2009).

Secondly, although policy development has recognised the value of a CBT approach, there is little evidence of this being translated into action on the ground. A key question therefore needs to address how high level policy goals can be more effectively implemented at the regional and local scales (consideration will also be needed of KSL’s relationship, and ultimately competition, with other more visited parts of Nepal and the wider region). As emphasised by local stakeholders, strategic marketing is needed to actively promote greater levels of visitors to the KSL region, suggesting that such a promotional drive would be most successful when targeting KSL ‘uniqueness of place’. Another course of action could be concentrate initial efforts on those activities which are already taking place in the region (through increased resources, better support and management). The most obvious examples are pilgrimage and trekking. However, whilst there is obviously an overwhelming desire for the economic benefits that were perceived to come with increased tourism activity, interviewees also introduced some important caveats. These were:

- A need to ensure cultural and environmental interests are balanced;
- Action to negate possible disbenefits that accompany increased levels of tourism – litter, waste etc.;
- Consideration of the impact on children (such as school attendance).
Any strategy to increase tourist numbers in support of sustainable livelihoods will need to address a variety of issues, from enticing the visitors to the region in the first place, providing facilities and resources for the duration of their stay, to ensuring that the economic benefits spill over and are shared by all sections of the local community (potential limiting resources are also shown in Table 9).

Table 9. Potential limiting resources

<table>
<thead>
<tr>
<th>Potential limiting resources</th>
<th>Sensitive areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Water scarcity</td>
<td>Pani Naula, Yari village, Thade Dhunga, Palbang</td>
</tr>
<tr>
<td>2 Decreasing snow cover</td>
<td>All expedition peaks and mountains</td>
</tr>
<tr>
<td>3 Energy challenges</td>
<td>Local people are dependent on forest firewood, which is diminishing due to illegal timber activity, house construction and population growth</td>
</tr>
<tr>
<td>4 Resource conflicts: Grass and grass lands</td>
<td>Grazing ban affecting public grassland - private horses, mules etc. - affecting private camping sites and hotel/lodges. Presently, there is an acute problem in some places. This problem will worsen with any increase in tourist numbers</td>
</tr>
<tr>
<td>5 Trained human manpower</td>
<td>Shortage of trained manpower for tourism enterprises. Increasing trend of in-country and outmigration</td>
</tr>
<tr>
<td>6 Disease</td>
<td>Possibility of vector borne disease in some densely populated settlements affected by poor sanitation and water shortage</td>
</tr>
<tr>
<td>7 Food security</td>
<td>Changing agricultural practice, increasing number of fallow lands, reduced productivity</td>
</tr>
</tbody>
</table>

Some of the key messages elicited from stakeholders were:

- Improving access is critical. As noted during field work activity, Indian and Chinese visitors now have new routes available to them that may act to further restrict the already limited economic opportunities for local communities;
- There was conflicting evidence surrounding the value of buffer zones, and whether they disproportionately impact on tourism potential. Further analysis is needed of their positive and negative consequences of these protective zones for tourism, and the opportunities for changes to demand management practices;
- New institutional arrangements are needed that allow greater revenue sharing from visiting tourists (for instance, it was noted that the renewing of the tenure of the ACAP in 2012 may provide an opportunity for VDCs and DDCs to have greater access to these funds in the future);
- Once visitors are in the region they need access to better facilities and infrastructure. There is recognition that there is a cycle of opportunity being lost — no facilities and general lack of food for tourists, therefore they bring their own and there is extremely limited opportunity for economic retention in local communities. How can this cycle be broken?
- In relation to the above point, there was a desire to see a much greater sourcing of goods and services. As part of this agenda to maximise local benefits, the promotion
of ‘home stays’ was identified as the preferred form of accommodation by locals interviewed, and therefore capacity-building to support this desire is required;

• There should be more explicit consideration of how the role of private tourism operators can more usefully be utilised to realise emerging opportunities. Though there were also concerns that this activity needs to be balanced with the understanding that the benefits need to spill over beyond the major tourism operators to others in the local community;

• Trekkers are seen as providing more potential for economic retention in the KSL region – how best to maximise this, as well as improving opportunities relating to the other tourism activity (the role of tea houses and the potential for them to be better supported, etc.), needs to be explored. Supporting new activity around periods and opportunities associated with acclimatisation was put forward as one possible avenue;

• Whilst sharing the benefits of CBT is important, some respondents highlighted a lack of tourism planning skills and capacity at the local level as being a major impediment. In this regard, organisations such as ICIMOD and other NGOs can provide proactive support through education, training and capacity building. Building local capacity to better understand the linkages between tourism and climate change will be vital.

As a rough guide to avoid potential ‘maladaptation’ pitfalls (see also Table 10), these key messages are imperative if the goal is to promote tourism as a viable adaption strategy going forward.

Table 10. Reflecting on barriers to CBT development and potential maladaptation pitfalls to be aware of (sourced and adapted from Asker et al., 2010)

<table>
<thead>
<tr>
<th>Enabling conditions for good practice CBT</th>
<th>Barriers to the development of CBT (and potential ‘maladaptation’ pitfalls)</th>
<th>Preliminary observations from fieldwork in Humla - enabling conditions v’s barriers to development of sustainable CBT in Humla</th>
</tr>
</thead>
<tbody>
<tr>
<td>The community is already well organised and cohesive</td>
<td>The foundations of the community are fragmented and unorganised</td>
<td>There is little evidence from fieldwork observations, on strong cohesive links between tourism communities (operators) and communities at large, as well as between villages. A much more comprehensive survey of formal and informal networks is recommended.</td>
</tr>
<tr>
<td>When community members are widely involved in decision making processes, and financial management around the CBT</td>
<td>Decision-making is purely the domain of powerful individuals (usually males), and the benefits are not equitably distributed</td>
<td>Tourism development is still in its very early stages of formal planning at the district level, with little evidence of comprehensive community involvement and participation in decision-making processes. Capacity to engage more broadly is also lacking. Widespread concerns over inequitable distribution of tourism benefits exist.</td>
</tr>
<tr>
<td>Land ownership and other ‘resource’ issues are clear and well defined</td>
<td>Land and resource disputes are rife and recurrent</td>
<td>There was very little evidence provided or observed on the explicit state of land ownership and resource allocations, particularly with respect to issues surrounding ecological services from community and government managed forest assets. A comprehensive survey is recommended to better characterise on the state of land ownership and land use, and any history of disputes (if these occur).</td>
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<tr>
<td>‘Bottom up desire’, in the community reflected in the facility design, decision making and management structures.</td>
<td>‘Top down’ centralised decision making and management structures where CBT is ‘placed’ on a community. Local perception that the motivations is purely financial</td>
<td>There was very little evidence to suggest a clear distinction between ‘bottom-up desires’ and ‘top-down’ decisions on benefits of CBT. However, numerous respondents, including stakeholders present during workshops, articulated a very strong desire to see CBT efforts as a means to preserve the cultural heritage and uniqueness of place. Values pertaining to wellbeing, respect, and cultural wealth demonstrate a desire beyond just material/monetary wealth.</td>
</tr>
<tr>
<td>Decision for CBT is made by the community based on informed choice of impact, options, risk, and outcomes</td>
<td>There is no real local decision making or it is based on limited information and no consideration of options</td>
<td>Information gathering and knowledge brokering is currently being undertaken in the region, as part of efforts to support the early stages of the KSLCI. There is an expectation that information on impacts, options, risks, and outcomes of community based tourism development can be articulated as part of ongoing KSLCI efforts.</td>
</tr>
<tr>
<td>High participation levels</td>
<td>Participation wanes during implementation of the CBT facility</td>
<td>Given the very early stages of formal and/or structured CBT planning and development in Humla, there is little evidence yet to be able to ascertain levels of participation. However, this is expected to be high given the relatively high aspirations to see tourism as a means to supplement livelihood options.</td>
</tr>
<tr>
<td>Driver is not purely income generation but also cultural and natural heritage conservation and intercultural learning</td>
<td>Drivers are solely financial</td>
<td>As discussed in a previous point, there was evidence of strong desires to see CBT efforts as a means to preserve the cultural heritage and uniqueness of place. Values pertaining to wellbeing, respect, and cultural wealth demonstrate a desire beyond just material/monetary wealth.</td>
</tr>
<tr>
<td>The activity is supported by good marketing mechanisms</td>
<td>Little marketing or misplaced marketing</td>
<td>Given the very early stages of formal and/or structured CBT planning and development in Humla, there is little evidence yet to be able to evaluate effectiveness of marketing efforts. However, it is expected that lessons learnt from other CBT efforts elsewhere in Nepal can inform on effective marketing efforts for KSL Nepal going forward.</td>
</tr>
<tr>
<td>Strong partnership with local NGOs, relevant government bodies and other supporters</td>
<td>Established through external funding mechanisms</td>
<td>There is evidence of strong NGO involvement in Humla, particularly by NGOs such as Nepal Trust and Humla Development Initiative. Their respected status in the community can be an opportunity to leverage on CBT efforts.</td>
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<tr>
<td>Approaches are contextually and locally appropriate and not just ‘imported’ from other contexts</td>
<td>The CBT venture is seen as a ‘one size fits all’</td>
<td>Given the very early stages of formal and/or structured CBT planning and development in Humla, there is still an opportunity to characterise and ‘transpose’ lessons learnt from elsewhere in Nepal into the local context.</td>
</tr>
<tr>
<td>CBT is part of a broader/wider community development strategy</td>
<td>CBT is seen as a quick fix ‘way up and out’ of a poverty cycle</td>
<td>Given KSLCI’s broader aims for sustainable development in the region, it is expected that CBT efforts as part of this Initiative go beyond quick fixes out of poverty.</td>
</tr>
<tr>
<td>Linked to visitor education on the value of culture and resources present. Clear zoning of visitor and non-visitors areas</td>
<td>No attempt to inform visitors of the specific nature of local natural and cultural heritage so there is no sense of the uniqueness of ‘place’</td>
<td>Given the very early stages of formal and/or structured CBT planning and development in Humla, there is still limited evidence of education on cultural heritage for tourists visiting the region. However, given the strong desires to see CBT as a means to conserve cultural assets (see also Shrestha et al., 2010), there is an expectation that education would play a central role in ongoing CBT efforts going forward.</td>
</tr>
<tr>
<td>There is good existing infrastructure to access the product</td>
<td>Infrastructure is inadequate and there is no potential for investment</td>
<td>From fieldwork observations, there is a significant gap on adequate infrastructure that services the needs of the local population, let alone the needs of tourists. However, there is still scope and opportunity to investigate feasible investment options such as micro-financing or community-based loans that support local development. A comprehensive evaluation of potential avenues for investment and partnerships is therefore recommended.</td>
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</table>
7 Up-scaling strategy

This penultimate section provides an initial exploration of what may be needed in order to progress towards an up-scaled strategy in support of tourism development as a sustainable livelihood option in the KSL region. Whilst the primary focus of this piece of work has been on the interactions between tourism and climate change (both positive and negative), evidence elicited from the engagement process with local stakeholders, reinforced by experiences on the field trip, provided clear illustration that there are many social, economic, environmental and institutional drivers involved and in the short term at least, issues related to poverty alleviation and socio-economic development will need to be central to any forward planning.

Promoting community-based tourism as a potential adaptation strategy, not only to future climate change impacts but also as a vehicle for poverty alleviation, has been identified as a promising option amongst a range of different land use strategies. This builds on its potential to diversify livelihood options and to make valuable contributions to the local economy (though care must be taken to ensure that new vulnerabilities are not introduced through an over-dependence on any one single economic activity – see item 4 below). However, there is much complexity underlying the relationships between tourism, climate change, and sustainable livelihoods that will need to be better understood if CBT is to expand from its relatively low starting point in the KSL region, and to bring wider benefits to local communities that are sustainable in the longer term.

The authors argue that a future up-scaling strategy will need to carefully consider the elements discussed below if changes are to be both effective and equitable. An understanding that multiple stressors could potentially affect CBT, and its ability to enhance local sustainable livelihood options, shapes the discussion:

1. Geographic up-scaling

Due to the resources available, the scope of this work was confined to the Humla district. Whilst some of the messages may be transferable to other parts of KSL, this is not necessarily the case with all observations / statements. Therefore there is a need to make sure that strategy development is explicitly ‘ground-truthed’ with field surveys for all the districts in the first instance, supported by similar ‘bottom-up’ analyses of neighbouring areas / countries, which should be brought together into one KSL knowledge base. This is especially important in light of the fact that tourism offers, climate risks and associated adaptation options, and governance arrangements are all location / context specific. As noted, the focus for this particular piece of research was Humla (high mountains), however other districts also have different physical characteristics that are likely to present different issues and the responses required (predominantly mid–mountain terrains and lower) and measures will have to be adapted accordingly.

In order to understand the potential impacts of climate change on tourism activity, it is also important to know more about the choices that tourists make about their preferred recreational activities, the settings most conducive to a positive experience, and the kinds of experiences that are being sought. Given the limited scope of this study, a more comprehensive analysis of market-oriented trends and visitor preferences (as pertain to Nepal’s tourism context) is recommended for informing the design of future tourism development strategies.
Geographic up-scaling also refers to the need to consider how aspects of this study can be applied in the India and China contexts, focusing on all areas that constitute the KSL region. Given the relative high levels of economic exchanges between communities across borders (e.g. tourists as well as Humli or other Nepalese locals who travel, barter, and/or purchase goods from China or India, and vice versa), there is an important imperative here to consider and further characterise these cross-border and transboundary interdependencies – not just from an economic perspective, but also from a socio-cultural and political perspective. One way to begin doing this, is to conduct preliminary stakeholder engagement activities (such as the workshops and interviews conducted as part of KSL Nepal) that asks about matters of most concern for those communities. By cross-referencing these issues with those identified in Humla, a much more integrative picture can begin to emerge of the sorts of issues faced at this regional scale, which would support and add value to the KSLCI by explicitly reflecting local concerns. Another advantage of transboundary collaboration at this level is the opportunity to pool resources for a common cause and objective, especially when these remote communities experience isolation and difficulties in accessing resources on their own.

With respect to climate change, another geographic up-scaling strategy is for a more comprehensive and regionally-relevant investigation of climatic trends in KSL, through globally downscaled gridded climate data (temperature and precipitation) (see Section 5.3.6). This information could be supported by other analogue and qualitative means of information and data, such as documenting official as well as local communities experiences with actual past climate extremes or unseasonal weather events. The value in doing this is that it allows for a locally-relevant ‘translation’ of what these weather extremes and or climatic change mean in the local context, as well as identifying where resources could be better directed for more effective planning and mitigation of current and likely future impacts.

2. Improvements to existing scientific evidence base

A further strengthening of the quantity and quality of the scientific evidence base in order to support ‘evidence-based’ planning and development would clearly be beneficial. As one example, an integrated and participatory assessment of the risks and vulnerability facing different communities would be a valuable exercise to inform the upgrading strategy (place-based assessments). This goal could be achieved by the roll-out of ‘user-friendly’ assessment methodologies which are capable of being carried out in the field by key local stakeholders, supported where needed by local capacity building activity involving NGOs such as ICIMOD. Indeed, providing communities (and more specifically local tourism planners) with the skills and resources necessary through education and training will be critical, and the building of local adaptive capacity should be a core concern of any future strategy. How best to facilitate this in the KSL context needs to be addressed i.e. how can NGOs support local capacity building and training and what resource mechanisms are needed for this to happen?

From the scoping activity it appears that informational databases about climate change and the KSL region are extremely limited. As noted by the national consultant, there is little existing information on the impacts of climate change, let alone on its impact on tourism, and the acquisition and interpretation of current day meteorological and hydrological data can also be considered poor. These ‘gaps’ in scientific knowledge will need to be addressed, for instance higher resolution climate data, seasonal variations in precipitation, hydrological data etc.
Although the concept of CBT was widely supported by local stakeholders, concerns were raised by many about ensuring the preservation of the uniqueness of place, incorporating both landscape and culture. In this regard, research can have a role to play in working closely with stakeholders to analyse and make informed recommendations about the potential limits to acceptable change; as framed by notions of ecological, physical and perceptual carrying capacity. A participatory approach will be an essential component of such exercises.

3. Institutional arrangements

Whilst science has an important role to play in generating knowledge and informing changes that are sustainable, understanding institutional barriers and opportunities is equally important for both promoting implementation on the ground and ensuring that issues of equity are given adequate consideration. Beneficial activity in support of the upgrading strategy would include:

- To better understand the science – policy interface in the Nepal context: analysis needs to be carried out that actively supports linkages that bridge science and the decision-making process (towards new ways of working between scientific, policy and wider stakeholder communities);
- A more comprehensive mapping of multi-level policies to improve the vertical integration of policies operating at different spatial scales;
- An analysis of how policies that interact with tourism and climate change, either ‘fit’ or ‘conflict’ with the end goal of sustainable livelihoods (greater numbers of tourists versus conservation ideals being an obvious example – see item 5), as well as identifying any policy gaps;
- Undertake research that identifies ‘no regret’ strategies and mechanisms which could be implemented to minimise the negative influences and maximise the positive influences on local adaptive capacities;
- Conduct actor mapping across scales to better understand issues of power, with a particular emphasis on how the poor, socially excluded, and other marginalised groups can be included and benefit from new tourism activity. The mapping of both formal and informal networks will be of particular importance here (acknowledging the critical role of NGOs for instance);
- Ultimately, what institutional reforms could be implemented and acceptable to improve issues of governance;
- A transboundary forum (see point number 1, ‘geographic up-scaling’) which brings together divergent views and perspectives will have an important role to play in creating an environment which allows learning about each other’s issues and acting as a vehicle for consensus building.

4. Bottom-up meets top-down

Much of what has been described above can be considered a ‘top-down’ approach, however bringing this together and integrating this knowledge with bottom-up issues and concerns will be just as important. Recommendations for inclusion in the upgrading strategy

- Identification and mapping of infrastructure and facility upgrades would be a useful undertaking to support CBT in the first instance;
- Scoping exercise that identifies the range of financing options available to local communities – international funding, micro-financing, community-based loans etc. – and the avenues for pursuing these;
• Conducting a survey of land use and ownership to better understand local distribution of power and potential areas of conflict;
• A more detailed social assessment of power and participation in decision-making (and ultimately equity of benefit distribution);
• Addressing how a poor level and awareness and information about tourism, climate change, and sustainable livelihoods, amongst local communities in KSL can be improved.

5. Demand management

• A critical issue raised was how best to balance competing concerns – on the one hand, conserving the natural and cultural landscapes of such a unique place, whilst on the other, promoting sustainable forms of tourism that bring new economic prosperity. Some respondents perceived the current system of permits as actively discouraging visitors, with funds raised not being widely distributed as intended. A fresh look at how best to manage visitor demand and ensure that benefits arising from increased activity can percolate throughout the local community may be a useful exercise.

• For instance, the manner in which quotas were suggested in this report, was in response to concerns regarding preservation of cultural heritage and resources (food security, water), as well as the poor infrastructure currently in place to deal with waste - particularly human waste. Limiting numbers at first may provide an opportunity for development to "catch up" before larger numbers can be accommodated without compromising the very environment that the locals depend on. However, further study and consideration of lessons learnt from other contexts is needed;

• From a policy perspective, the institutional aspects of tourism revenue and distribution, cross-checked with legislative provisions at all levels of government (from village, district, zone, to central government) still remains a very crucial unanswered question and this is very important if KSL Nepal is to avoid the mistakes, mishaps, or unintended consequences experienced elsewhere in Nepal.

6. Learning from experience

A useful step would be to undertake a mapping exercise of CBT activity elsewhere in Nepal (and other comparable mountain regions). Distillation of knowledge about what worked well, what didn’t, and what pitfalls should be avoided would add considerable value to the upgrading process both by avoiding a process of ‘reinventing the wheel’ as well as possible developments that may ultimately lead to problems of maladaptation. One possible mechanism for this would be to conduct hands-on workshops in the KSL region that draws on the experience of tourism planners in other more visited parts of Nepal. Other forms of knowledge transfer should also be explored for their relevance and usefulness to these often remote communities.
8 Conclusions

8.1 Outcomes of this study

The main objective of the Climate Change and Tourism team was to identify issues pertaining to the potential impacts of climate change on tourism practices in the KSL region of Nepal, particularly on risks and opportunities facing the sector, and to begin to explore some of the implications for tourism to contribute to a sustainable livelihood strategy. Through the field activities described in this report, key findings can be summarised as follows:

**Climate-related**
- In KSL Nepal, climate trends in recent times can be generally characterised as displaying high inter-annual (seasonal) variability, particularly with respect to precipitation and minimum and maximum temperatures from expected ‘normal’ conditions.
- Local communities already have to cope with climate-related issues and this current day ‘hook’ makes it easier to engage with stakeholders rather than placing discussions in some far away future context.
- Of particular note, are recent episodes and experiences with relatively dry conditions (droughts, lack of seasonal snow), as well as shifts in monsoon activity (increased rainfall intensity as well as late start and cessation of wet season).
- Climate change is likely to impact greatest on the supply side of tourism, particularly through direct impacts on the landscape as well as the functioning of the tourism support infrastructure (access by aeroplane etc.).
- Complex socio-ecological interactions further complicate the picture – food security, likely to be affected by a changing climate, being a particular concern both for local needs and to provide for the tourism trade.
- However, whilst climate change was perceived as a serious problem, it needs to be considered in the context of multiple stressors affecting the region.

**Tourism-related**
- On the question of opportunities for tourism development in the KSL Nepal region, a common theme centred on the prospect of tourism development as a means for poverty alleviation through the diversification of livelihood options for the local community.
- However, a weak socio-economic base currently affects these remote communities and it is clear that sustainable forms of development are much needed. In terms of tourism, addressing the lack of infrastructure to provide services for visitors as well as meet the basic needs of the local population is a pressing requirement (improving the situation of inadequate infrastructure was a clear message to come out from the interviews, particularly sanitation. Improved facilities for visitors were also raised as a core issue).
- Given that participants voiced a general approval and consensus for tourism as a potential means for uplifting the weak socio-economic base that affects this region, indicates that tourism development has a level of local traction and support as a policy option. However, concerns were raised on the types and scale of tourism...
development in the region, and the need to consider levels of carrying capacity (with input from local stakeholders).

- In support of regional development the critical issue of improved access needs to be addressed (particularly within Nepal borders).
- Whilst the current number of tourists visiting the region is small, even moderate improvements to visitor numbers and activity could make a significant difference to local livelihoods if reinforced by institutional changes that maximise local economic retention. More detailed analysis is required to better understand how this can be most effectively achieved.
- There is considerable value in adopting participatory approaches which will help to ensure a sense of ‘ownership’ for new tourism activity and that benefits are shared in an equitable way.

Tourism, climate change and sustainable livelihoods

- From a policy perspective, the carrying capacities of the region and conservation threats were identified as key risks. These risk factors require the government agencies to restrict and control tourism visits to less vulnerable areas through a permit system. This was seen by the industry representatives as a factor that restricts the scope and expansion of tourism in the region as it more likely to inflate costs of goods and services and travel operation. It also limits the ‘economy of scale’ as well as deters infrastructure investment noted by NGO groups.
- An improved system of visitor management should therefore be investigated. This includes an analysis of how the permit system etc. currently works and how changes could be made that relax restrictions whilst maintaining control of numbers and routes taken by the visitors i.e. consideration of new approaches to demand management.
- A sustainable livelihood is a key concern for this part of the world. Climate change is just one additional stressor acting on Humla and surrounding communities. Poverty alleviation and sustainable regional development need to be the primary considerations in this remote context. Livelihoods are predominantly land-based subsistence and are already highly vulnerable to current climate variability.
- Further research is needed to gain a better understanding of the multitude of stressors in order to better inform future strategies. It is also important to note that climate risks are context specific so a bottom up approach to vulnerability assessment is essential.
- The research activity highlighted that meaningful engagement and issues of equity need to be explicitly addressed when planning sustainable livelihood strategies.

8.2 Recommendations for further research

A summary of recommendations for further study and/or as part of up-scaling efforts in KSL Nepal and across the KSL region, include:

**Climate-related hazards:**
- An investigation of the historical as well future flood potential in Limi Valley (including a survey for the potential for GLOFs), an area that was said to be particularly vulnerable to the effects of flash flooding given its topography as well as remoteness. This is of particular importance given Limi Valley’s potential as an important tourism
drawcard for this region, and most importantly for its significant cultural heritage value;

- The use of hydrographs (precipitation levels versus surface and river water flow levels and flood peaks, where data is available) in order to better document and characterise trends in water scarcity and availability issues. This can also support a gap analysis based on existing versus required infrastructure to secure and meet the water needs of the community (particularly in Humla given their recent experiences with episodes of water scarcity);

- An evaluation of the biophysical and atmospheric conditions of historical extreme events (such as floods, extreme snow storm events, etc.) in order to better relate and document on those physical variables that play a significant role in conditioning their impacts. This information can also complement efforts for the development and planning of adaptation to climate change and adaptability more generally;

- A more comprehensive and regionally-relevant investigation of climatic trends in KSL, through globally downscaled gridded climate data (temperature and precipitation), accessible through sites such as the UK’s Met Office Hadley Centre\(^\text{28}\). Of particular relevance would be to examine trends in deviations or anomalies from the climate ‘normal’ for this region, therefore describing magnitude and frequency of climate variability;

Socio-economic:

- A comprehensive assessment of local perceptions to ecosystem goods and services as well as an appraisal of legislation, policy processes and practices of forest management initiatives in KSL. Given that ecosystem goods and services opportunities are advocated as a fruitful means to mitigate some of the impacts of global change in mountains (see Section 4.2), and by default on any tourism development efforts, an emphasis on this type of evaluation as part of future KSLCI project activities would be highly beneficial;

- As assessment of the intrinsic values that render certain tourism practices acceptable for the host community, across all levels of society including those that tend to be marginalised in decision-making processes. Identifying common values would ensure a consideration for socially feasible options for tourism development, as well as reducing risks for the implementation efforts. Through participatory engagement (e.g. focus groups in place), participants can self-assess and self-determine how they will be involved in tourism development and associated local development activities;

- An evaluation of the economic carrying capacity potential for tourism in KSL Nepal, especially in relation to the multi-scalar governance structure within KSL Nepal. This evaluation should include an appraisal of mechanisms and policy instruments that could allow for tourism revenue and resources to trickle-down broadly;

- A gap analysis of existing versus required local capacities for data gathering and/or other forms of evidence-based means of measuring and monitoring progress on tourism development as an effective adaptation strategy. This would support longer-term objectives to increase and diversify sustainable livelihood options by identifying measures that have worked versus those that need to be either improved or replaced with alternative options. A monitoring framework would also ensure better risk management for tourism development initiatives, particularly if donors and/or NGOs are to be included in their implementation;

A thorough investigation of gender, ethnicity and castes, as well as processes of power and inequality operating in the KSL region. Studies such as social vulnerability and capacity assessments carried out by researchers with expert ethnographic and sociological knowledge of the KSL region could support this outcome. These assessments could investigate the regional political economy of KSL and its underlying fabric using a series of carefully selected case studies, where key marginalised groups and the institutions that drive or trigger marginalisation are identified and analysed in the context of tourism development. Such information can form the basis for developing a set of community development and tourism activities that focus on building more equitable access to resources across existing social divisions.
9 References


ICIMOD 2010b. Rural Livelihoods and Adaptation to Climate Change - Results of a qualitative study in Tehri Garhwal, Bageshwar, and Almora districts in Uttarakhand, northwest India. (Poster). Kathmandu: Internation Centre for INtegrated Mountaint Development (ICIMOD).

ICIMOD / GTZ 2010. Terms of Reference - Tourism and Climate Change (September 2010). Kathmandu: International Centre for Integrated Mountain Development (ICIMOD) and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.


Work for Us: European Perspectives on Adaptation and Mitigation Strategies. Cambridge, UK: Cambridge University Press.


10 APPENDIX A Summary of Stakeholder Workshop outcomes

Extract from:


Summary of workshop findings

The main objective of the workshop was to identify issues pertaining to the impacts of climate change on tourism practices in the KSL region of Nepal, particularly on risks and opportunities facing the sector. Through the presentations, workshop activities, and discussions outlined in this report, some key outcomes can be summarised as follows:

- Whilst climate change was perceived as a serious problem, it needs to be considered in the context of multiple stressors affecting the region.
- On the question of risks for tourism development in the KSL Nepal region, a common theme emerged across all three groups centred on the issue of weak socio-economic base that affects these communities. Most notably through the lack of infrastructure to service the basic needs of the local population, let alone support tourism at a sustainable level.
- From a government perspective, the carrying capacities of the region and conservation threats were identified as key risks. These risk factors require the government agencies to restrict and control tourism visits to less vulnerable areas through a permit system. This was seen by the industry representatives as a factor that restricts the scope and expansion of tourism in the region as it more likely to inflate costs of goods and services and travel operation. It also limits the ‘economy of scale’ as well as deters infrastructure investment noted by NGO groups.
- On the question of opportunities for tourism development in the KSL Nepal region, a common theme across all three groups centred on the prospect of tourism development as a means for poverty alleviation through the diversification of livelihood options for the local community.
- Given that participants voiced a general approval and consensus for tourism as a potential means for uplifting the weak socio-economic base that affects this region, meant that tourism development has a level of traction and support as a policy option. However, concerns were raised on the types and scale of tourism development in the region with the argument that the number of tourists currently visiting the region is unlikely to make a substantial contribution to the local economy despite the fact that tourism has the potential to create employment, additional income for local businesses and an overall improvement in livelihoods.
Overall, comments made and discussion that ensued demonstrated that workshop participants have an appreciative and sophisticated understanding of the socio-economic and environmental issues that the region is currently experiencing. However, results from the participant survey showed that participants have a mixed response to the degree to which they think climate change is already occurring in the KSL region and linking these to the existing vulnerabilities in place, even though impacts of climate change scenarios are perceived to be severe. Most participants agree that their organisations have the ‘interest’ to use tourism as a means to adapt to climate change scenarios; whilst it is reported that only a few have the power and capacity to influence climate change adaptation outcomes. The participation of organisations that have the required capacity, power, and interest to support tourism as an adaptation strategy is critical before the approach can be planned and implemented in the KSL region.

Of interest and relevance for on-going project initiatives, including the Strengthening Project fieldwork component, is to note and consider the number of issues of concern raised by workshop participants, which provide a strong foundation for further enquiry and guidance that is context-specific. These issues of concern are summarised as follows:

- “Restricted areas” and the issue of transport and access to the region (particularly in Humla);
- Access to reliable data and the need to acknowledge, legitimize and complement existing data with local knowledge;
- The role of policy makers in mobilizing and facilitating development of infrastructure and facilities for trekking and tourism development;
- From a conservation perspective, prioritise on the need to account and plan for buffer zones areas;
- Issue of extensive use of firewood in mountain regions, highlighting the need to investigate and promote other sources of energy and more sustainable forms of ‘fuel’ in the KSL;
- Defining what is a feasible and desirable number of tourists visiting KSL Nepal;
- Clarification and appraisal of rules and regulation pertaining to funding and budgets available for tourism development, including the capacity for local authorities to access these resources from the central government;
- Need to assess and appraise lessons learnt from funding, tourism development and implementation models applied elsewhere in Nepal (e.g. Sagarmatha National Park, Annapurna region), as well as initiatives under Integrated Conservation and Development Projects (ICADPs). A comprehensive evaluation on these lessons learnt would prove highly beneficial in the KSL Nepal context for strategic purposes.

These issues of concern were incorporated as part of the semi-structured interview design for the fieldwork component, serving as a ‘ground-truthing’ means in which to ascertain levels of acceptance for tourism development, including perceptions, values and opinions from the local community situated in place and context. These results are reported in the final report to be prepared and issued by the Tourism and Climate Change research team, and made available to local communities through ICIMOD.
11 APPENDIX B  Fieldwork Itinerary

Day 01 Fly from Kathmandu (A) to Nepalgunj (B)
Day 03 Fly to Simikot (2950 m) (C)
Day 04 Trek to Kermi (2670m) (E)
Day 05 Trek to Yalbang (3020m) (H)
Day 06 Trek to Muchu (3120 m) - Tumkot (3380 m), Yari (3700m) and Hilsa (3720 m) via Nara La (4620 m)
Day 07 Trek to Yalbang
Day 08 Trek to Dharapuri
Day 09 Trek to Simikot

NB – Map is only indicative of the general direction/region visited.

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>From</th>
<th>To</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26 Sept. 2010</td>
<td>Kathmandu</td>
<td>Nepalgunj</td>
<td>Arrival at Nepalgunj and interview with Tourist Hotels</td>
</tr>
<tr>
<td>2</td>
<td>27 Sept. 2010</td>
<td>Nepalgunj</td>
<td>Contingency day</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>28 Sept. 2010</td>
<td>Nepalgunj</td>
<td>Simikot, Humla (2950m)</td>
<td>Fly to Humla, listing the institutions to be visiting and making appointments, taking secondary information from DDC, Nepal Trust, Humla Initiatives</td>
</tr>
<tr>
<td>3</td>
<td>29 Sept. 2010</td>
<td>Simikot</td>
<td>Meeting, consultation and interview with selected stakeholders</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>30 Sept. 2010</td>
<td>Simikot</td>
<td>Dharapuri (2300m) and Kermi (2670m)</td>
<td>Field observation, community consultations, consultation with the tourism entrepreneurs</td>
</tr>
<tr>
<td>5</td>
<td>1 Oct. 2010</td>
<td>Kermi</td>
<td>Yalbang (3020m)</td>
<td>Field observation, community consultations, consultation with the tourism entrepreneurs</td>
</tr>
<tr>
<td>6</td>
<td>2 Oct. 2010</td>
<td>Yalbang</td>
<td>Muchu</td>
<td>Field observation, community consultations, consultation with the tourism entrepreneurs, Tumkot (3380m), Yari (3700m), Hilsa (3720m) via Nara La pass (4620m)</td>
</tr>
<tr>
<td>7</td>
<td>3 Oct. 2010</td>
<td>Muchu</td>
<td>Yalbang</td>
<td>Field observation, community consultations, consultation with the tourism entrepreneurs</td>
</tr>
<tr>
<td>8</td>
<td>4 Oct. 2010</td>
<td>Yalbang</td>
<td>Dharapuri</td>
<td>Field observation, community consultations, consultation with the tourism entrepreneurs</td>
</tr>
<tr>
<td>9</td>
<td>5 Oct. 2010</td>
<td>Dharapuri</td>
<td>Simikot</td>
<td>Field observation, community consultations, consultation with the tourism entrepreneurs</td>
</tr>
</tbody>
</table>
## 12 APPENDIX C  Fieldwork: list of interviewees

### Table 11. List of interviewees in Kathmandu and Humla, Nepal

<table>
<thead>
<tr>
<th>Interview No.</th>
<th>Date of interview</th>
<th>Name</th>
<th>Address / Institution</th>
<th>Role</th>
<th>Interview location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21 Sept. 2010</td>
<td>Mr. Gopal Pd. Upadhya</td>
<td>Department of National Parks and Wildlife Conservation</td>
<td>Director General</td>
<td>Babamahal, Kathmandu</td>
</tr>
<tr>
<td>2</td>
<td>21 Sept. 2010</td>
<td>Mr. Kashi Raj Bhandari</td>
<td>Nepal Tourism Board</td>
<td>Director, Research, Planning and Monitoring Department</td>
<td>Bhrikutimandap, Kathmandu</td>
</tr>
<tr>
<td>3</td>
<td>23 Sept. 2010</td>
<td>Mr. Murari Bahadur Karki</td>
<td>Ministry of Tourism and Civil Aviation</td>
<td>Joint Secretary/Policy, Planning and Tourism Infrastructure Division</td>
<td>ICIMOD, Kathmandu</td>
</tr>
<tr>
<td>4</td>
<td>28 Sept. 2010</td>
<td>Mr. Bishnu Prashad Sharma</td>
<td>District Development Officer</td>
<td>Local Development Officer</td>
<td>Simikot, Humla</td>
</tr>
<tr>
<td>5</td>
<td>28 Sept. 2010</td>
<td>Mr Pema Gyalsden Lama</td>
<td>Sun Valley Hotel</td>
<td>Manager</td>
<td>Simikot, Humla</td>
</tr>
<tr>
<td>6</td>
<td>28 Sept. 2010</td>
<td>Mr. Subash Chand</td>
<td>Simikot, Humla</td>
<td>Climate Change/Sustainable Development researcher</td>
<td>Simikot, Humla</td>
</tr>
<tr>
<td>7</td>
<td>29 Sept. 2010</td>
<td>Mr. Rajiv Kumar Shah</td>
<td>Rural Energy Development Programme/DDC/UNDP</td>
<td>District Energy Officer</td>
<td>Simikot, Humla</td>
</tr>
<tr>
<td>8</td>
<td>29 Sept. 2010</td>
<td>Mr. Subash Chandra Das</td>
<td>District Forest Office</td>
<td>District Forest Officer</td>
<td>Simikot, Humla</td>
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<tr>
<td>9</td>
<td>30 Sept. 2010</td>
<td>Mr. Ratna Rawal</td>
<td>Tea Shop owner</td>
<td></td>
<td>Simikot, Lagna</td>
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<td>10</td>
<td>30 Sept. 2010</td>
<td>Mr. Banjh Bahadur Shahi</td>
<td>Retail shop and tea shop operator</td>
<td></td>
<td>Pani Naula village</td>
</tr>
<tr>
<td>11</td>
<td>30 Sept. 2010</td>
<td>Mr. Dirga Bahadur Shahi</td>
<td>Vegetable producer</td>
<td></td>
<td>Majhgoan</td>
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<tr>
<td>12</td>
<td>30 Sept. 2010</td>
<td>Mr. Kal Bahadur Shahi</td>
<td>Tea house and camping site operator</td>
<td></td>
<td>Dhapapuri</td>
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<td>13</td>
<td>30 Sept. 2010</td>
<td>Mr. Ang Gelu Lama</td>
<td>Tea house operator</td>
<td></td>
<td>Dhand Kermi</td>
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<td>14</td>
<td>1 Oct. 2010</td>
<td>Mr. Rinjin Lama</td>
<td>Nepal Trust</td>
<td>Field Officer/GHTDP</td>
<td>Dhand Kermi</td>
</tr>
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<td>15</td>
<td>1 Oct. 2010</td>
<td>Mr. Chhiring Lagayap Lama</td>
<td>Teahouse and camping site operator</td>
<td></td>
<td>Kermi</td>
</tr>
<tr>
<td>16</td>
<td>1 Oct. 2010</td>
<td>Mrs Pema Tangma Lama</td>
<td>Teahouse and camping site operator</td>
<td></td>
<td>Kermi</td>
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<tr>
<td>17</td>
<td>1 Oct. 2010</td>
<td>Mr. Lundup Lama</td>
<td>Teahouse and camping site operator</td>
<td></td>
<td>Salli Khola</td>
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<tr>
<td>18</td>
<td>1 Oct. 2010</td>
<td>Mr. Kumar Lama</td>
<td>Himalaya Children Society</td>
<td>Founder</td>
<td>Yalbang</td>
</tr>
<tr>
<td>19</td>
<td>2 Oct. 2010</td>
<td>Anonymous</td>
<td>Muchu Health Post</td>
<td>Medical Assistant</td>
<td>Muchu</td>
</tr>
<tr>
<td>20</td>
<td>2 Oct. 2010</td>
<td>Mr Sitar Lama and Mrs Digi Padma Lama</td>
<td></td>
<td>Home stay operator</td>
<td>Muchu</td>
</tr>
<tr>
<td>Interview No.</td>
<td>Date of interview</td>
<td>Name</td>
<td>Address / Institution</td>
<td>Role</td>
<td>Interview location</td>
</tr>
<tr>
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<td>------------------------------------------------</td>
<td>-------------------</td>
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<tr>
<td>21</td>
<td>2 Oct. 2010</td>
<td>Mrs. Chhumjung Lama</td>
<td>Teahouse and camping</td>
<td>site operator</td>
<td>Tumkot</td>
</tr>
<tr>
<td>22</td>
<td>2 Oct. 2010</td>
<td>Mr. Lote Lama</td>
<td>Teahouse and camping</td>
<td>site operator</td>
<td>Pani Palbang</td>
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<tr>
<td>23</td>
<td>2 Oct. 2010</td>
<td>Mr. Gurmet Lama</td>
<td>Teahouse and camping</td>
<td>site operator</td>
<td>Thade Dhunga, Nara La</td>
</tr>
<tr>
<td>24</td>
<td>2 Oct. 2010</td>
<td>Mrs. Palmu Lama</td>
<td>Teahouse and camping</td>
<td>site operator (temporary)</td>
<td>Rani Dharmasala</td>
</tr>
<tr>
<td>25</td>
<td>2 Oct. 2010</td>
<td>Mr. Karma Thundup Lama</td>
<td>Mansarovar Hotel</td>
<td>Hotel and camping site operator</td>
<td>Hilsa</td>
</tr>
<tr>
<td>26</td>
<td>3 Oct. 2010</td>
<td>Mr. Lok Raj Bhatta</td>
<td>Border Police Office</td>
<td>Officer in charge</td>
<td>Hilsa</td>
</tr>
<tr>
<td>27</td>
<td>3 Oct. 2010</td>
<td>Mr. Birbal Tamang</td>
<td>Asian Trekking Agency, Kathmandu</td>
<td>Trekking Guide</td>
<td>Nara La</td>
</tr>
<tr>
<td>28</td>
<td>3 Oct. 2010</td>
<td>Mr. Jyampel Lama</td>
<td>Tashi Delek Hotel</td>
<td>Hotel and camping site operator</td>
<td>Yari</td>
</tr>
<tr>
<td>29</td>
<td>4 Oct. 2010</td>
<td>Mr. Gotuk Lama</td>
<td>Teahouse and camping</td>
<td>site operator</td>
<td>Yalbang Kot</td>
</tr>
<tr>
<td>30</td>
<td>5 Oct. 2010</td>
<td>Mr. Harka Bahadur Shahi</td>
<td>Teahouse and camping</td>
<td>site operator</td>
<td>Majhgoan</td>
</tr>
<tr>
<td>31</td>
<td>6 Oct. 2010</td>
<td>Mr. Chudamani Gyawali</td>
<td>Bargoan Primary School</td>
<td>Teacher</td>
<td>Bargoan</td>
</tr>
<tr>
<td>32</td>
<td>9 Oct. 2010</td>
<td>Dr. Anita Manandhar</td>
<td>Humla Development Initiative</td>
<td>Director</td>
<td>Kathmandu</td>
</tr>
<tr>
<td>33</td>
<td>12 Oct. 2010</td>
<td>Mr. Arjun Datta Joshi</td>
<td>Rara National Park</td>
<td>Senior Game Scout</td>
<td>Rara NP</td>
</tr>
</tbody>
</table>
13 APPENDIX D  Semi-structured interview guide

INTERVIEW CHECKLIST

Project Title: Tourism and Climate Change in the Kailash Sacred Landscape, Nepal

Name: ___________________________  Position: ___________________________
Location: ___________________________  Date: ___________________________

1. Discuss based on your knowledge and experience the risks facing the tourism sector.

2. How might climate change amplify these risks?

3. What are the institutional and physical constraints and opportunities facing tourism operators?

4. In your opinion, how might sustainable tourism make a positive contribution to climate change adaptation?

5. Any other comments:

RMIT University
14 APPENDIX E  Examples of national policies linked to tourism and climate change

These edited notes have been provided by the national consultant, Ram Chandra Sedai.

NPWC Act 1973 empowers the GoN to establish protected areas (PAs) such as National Parks (NPs), Wildlife Reserves (WRs), Hunting Reserves (HRs), Conservation Areas (CAs) and Buffer Zones (BZs) in any part of the country through a gazette notification. The NPWC Act provides strong basis for the preservation and wise use of outstanding natural and cultural heritage and rich bio-diversity. The strong network of these PAs, have been the prime attraction for trekking and other forms tourism in Nepal.

Department of National Parks and Wildlife Reserve (DNPWC) and Protected Areas managers have also initiated eco-tourism development efforts making it an economic tool for the conservation of biodiversity and natural landscape. Various eco-tourism development activities such as eco-trail, bridge and campsite development; visitor information centre and visitor interpretation facilities development and promotional activities such as publication of brochures, posters have been undertaking by the DNPWC and PAs since last 1970s.

The Act also allows provision for operating business and services like hotel/lodge operation, rafting, camping site etc by granting permission from the prescribed authority. Besides these, the Act also provides provision for licensed hunting in the PAs. The Act has allowed PAs to spend 30 to 50% revenue/income generated from various sources (operation of services, tourist, forest products etc…) by the respective PAs for the local community development in the coordination of local governments. Presently DNPWC is spending this fund through the network of Buffer Zones established in and around the protected areas.

Buffer Zone Management Regulation 1996 (2052 BS) and Buffer Zone Management Directive 1999 (2056 BS)
Within the jurisdiction of NAWC Act 1973, the BZMR 1996 provides institutional framework, systems, mechanisms and processes (management modality) for the establishment and management of surrounding buffer areas of PAs as a Buffer Zone (BZ). This regulation has granted the PA Manager to establish the network of BZ User Groups (BZUGs), BZ User Committees (BZUCs) and Buffer Zone management Committee (BZMC) as an apex body. The regulation has provisioned for the preparation of BZ Management Plan (5 years). The plan also includes activities for tourism development, soil conservation, environment conservation and preservation of cultural and historical assets. The BZM Directives 1999 has also made provision for the allocation of BZ fund as per following basis while preparing the BZ management plan:

- Conservation programme : 30%
- Community develop programme : 30%
- Income generation and skill development programme : 20%
- Conservation education programme : 10%
- Administrative cost : 10%

Conservation Area Management Regulations 1996 (2053) and Conservation Area Government Management Regulations 2000 (2057)
The Conservation Area Management Regulations 1996 and Conservation Area Government Management Regulations 2000 promulgated by the GoN provides institutional framework, systems, mechanisms and processes (management modality) for establishment of Conservation Areas (CAs) by the Government and designate its management responsibility either to the Government agencies or agencies (NGOs, CBOs). As per the regulation, a Conservation Area Management Council/Committee (CAMC) is formed in each VDC for carrying out community development related construction works, protection of the natural environment, and effective implementation of the management plan. A Conservation Area Management Plan is prepared, approved and implemented in the CA including activities for eco-tourism development and conservation of natural/cultural heritage.

**Forest Act 1993**
Forest Act 1993 (amended in 1999) empowers the government to delineate any part of a national forest that has an especial environmental, scientific, or cultural importance, as a protected forest. Various provisions made in the Forest Act 1993 as amended, and Forest Regulations 1995 on national forests including government managed forests, protected forests, community forests, leasehold forests, religious forests, and private forests will have long-term impacts on the conservation and sustainable use of various components of biodiversity. This Act allows power to the Government and concerned authorities for the following activities which provide strong base for eco-tourism and all forms of tourism in Nepal:

- Conservation of forest and forest resources
- Conservation of wetlands
- Conservation of national forests
- Handing over forest as Community Forest
- Conservation and sustainable use of non-timber forest products (NTFPs)
- Declaration and conservation of special area as protected forest

**Environment Protection Act 1996 and Environment Protection Regulation 1997:**
The Environment Protection Act of 1996 and Environment Protection Regulations 1997 have a crucial role tourism and climate change by conserving and enhancing the natural, cultural and social landscape through the use of environmental tools like initial environmental examination (IEE), environmental impact assessment (EIA) and other tools and technologies while undertaking development and construction activities.

**Local Self Governance Act 1999 (2055 BS) and Local Self Governance Regulation 1999 (2056)**
The Local Self-Governance Act 1999 is Nepal's current law regarding decentralized governance. The preamble embodied in the Act includes such things like government's commitment to devolution of powers, responsibilities, and means and resources to make the local bodies capable and efficient in local self-governance, building of development and functional structures in local bodies capable for considering people and bearing responsibility. The Act contains various things, which among others, include the powers, functions and duties of locally elected bodies- the Village Development Committee (VDC), Municipality and the District Development Committee (DDC), their interrelationships, relationship with the civil society/non-government organizations, relationship with the government organizations and responsibilities of the government organizations towards the local bodies.
LSGA 1999 and LSGR 1999 empower Village Development Committees (VDCs), Municipalities and District Development Committees (DDCs) to plan and implement the periodic and annual plans in the district including the NRM, biodiversity conservation, cultural heritage preservation and tourism. The respective DDCs can make appropriate policies and plan for tourism development. And in doing so, DDCs can closely work with the respective VDCs and Municipalities. The Section 189 of LSGA 1999 has given authority to the respective DDCs to prepare district level policies on tourism and formulate and operate programmes in consonance therewith, and inspect and monitor, and cause to be inspected and monitored, the programmes operated. To protect, promote, expand and utilize the natural, cultural, historical and touristic heritages in the district development area, and cause to be done so. Besides tourism, DDC has the function to make policies and formulate and operate programmes on other sectors closely relevant to tourism development and climate change concerns.

LSGA 1999 has also given power to the respective DDCs to form sub-committee to render assistance in its functions. LSGA 1999 has also given mandatory provision for each DDC to formulate Annual and Periodic Plan (5 years) for the DDC for the development of its District. It has also given power to DDC, VDCs and Municipalities to to impose taxes, service charge and fees in the applicable items, which is equally applicable to tourism sector as well. LSGA 1999 has given power to DDCs to form Co-ordination Committee, comprising the chief of the subject-wise units of its secretariat related with development, Mayor and coordinators of service centres. LSGA 1999 has also given power to the respective DDCs to establish Subject-wise Section within DDC for development and construction works to be carried out in the district development area, set up subject-wise sections in office on the basis of the prescribed criteria.

Likewise, the LSGR 1999 has made a provision to carry out Impact Assessment of the Project. In assessing the impact of a project, the District Development Committee shall have to pay attention to the following factors also:-

- Social impact: Whether or not there is rise in the awareness, change in the living style, thinking and culture and growth in the social and moral activities of the local people;
- Economic Impact: Whether or not there is growth in the opportunity of employment or self-employment, in the business transaction, in purchasing power and in the overall economic activities of the local people;
- Services and Facilities: Quality of the services provided by the project, reaction of the people who have or who have not enjoyed the services and the needs to increase qualitative and quantitative growth of the services.
- Environmental Impact: Whether or not, after launching the project there occurs deluge, drought, floods, landslides, soil-erosion and the like natural calamities.

**Climate Change Policy for Nepal 2009**

There is no specific policy in Nepal on tourism and climate change. However, by considering the multi-sectorial nature of the tourism industry, the climate change concerned are reflected directly and indirectly in its various inter-related components such as energy, irrigation, drinking water, forest, agriculture, transport, health, disaster preparedness etc.

The main policy is the Climate Change Policy for Nepal 2009 and National Adaptation Programme of Action (NAPA) to Climate Change 2010. Following provisions set in the Climate change policy 2009 may have direct and indirect implication for tourism and climate change in KSL districts as well:
1. Major quantitative targets:
   a. Establishment of National Climate Change Study Centre by 2009
   b. Develop CC impact prediction system by 2020
   c. Prepare NAPA by 2009 (completed in 2010)
   d. Develop various CDP project plan and approach for carbon trading.

2. Major policy
   a. Establish National CC Study Centre and equip it with database
   b. Prepare NAPA
   c. Develop regional Climate Change model and other models
   d. Undertake efforts for cross-border issues on CC
   e. Enhancing the capacity of policy makers on CC
   f. Promote drought tolerant crop species
   g. Initiate and promote integrated watershed management programme
   h. Promote forest based and other alternative livelihood options
   i. Researches on GLOF, Glacial Lakes and rivers
   j. Establish Climate Change Fund and Disaster Insurance policy
   k. Expand and upgrade hydrological and meteorological observation networks
   l. Develop disaster preparedness plan
   m. Promote hydropower and other alternative energy including micro-hydro, solar, wind, bio fuel etc.
   n. Carry out massive awareness campaign on climate change
   o. Initiate and promote REDD, PES and other green/environmental initiatives.
   p. Provide incentives for climate neutral enterprises