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RESEARCH
ARTICLE

Can homestay businesses build gendered resilience in mountain ecosystems?

A case from the Panchase area of Nepal

By

Anu Adhikari
Senior Programme
Officer

*International Union for
Conservation of Nature
Nepal*

Ayush Adhikari

*International Union for
Conservation of Nature
Nepal*

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About the authors

Anu Adhikari

is a Senior Programme Officer (Climate Change, Gender and Social Inclusion) at IUCN Nepal, having served in the role since 2008. She has more than 15 years of experience in biodiversity conservation, gender and social inclusion, and climate change and adaptation. She has been involved in the coordination of IUCN's Ecosystem Management Programme in Nepal. As part of this programme, she has implemented projects and initiatives that focus on Ecosystem-based Adaptation (EbA) and Ecosystem-based Disaster Risk Reduction (Eco-DRR) in Nepal. She has also published a number of articles and papers on various themes related to the environment.

Email: anu.adhikari@iucn.org

Ayush Adhikari

graduated from the University of Northampton with a degree in Environmental Science. He worked as a consultant to IUCN Nepal on their project entitled "Scaling up Mountain Ecosystem-Based Adaptation." Mr Adhikari is interested in connecting climate change with livelihoods, in addition to interlinking conservation with geo-informatics. Mr Adhikari is an active member of the IUCN's Commission on Ecosystem Management (CEM).

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Abstract

Climate change impacts ecosystem services and geological processes and has long-term effects on food security and livelihoods. These impacts are not gender-neutral and they pose an added challenge in achieving gender-equitable livelihood goals. Ample literature and project implementation experience suggest that the consequences of climate change are disproportionately borne by women. Nepal is one of the countries most vulnerable to climate risks. Mountain ecosystems and those communities who depend on them for their livelihoods and other services are especially sensitive to climate variability.

Rural Nepal is in the midst of a complex period of transition involving out-migration, urbanisation and commercialisation of the local economy. Further, various vulnerability assessments suggest that the mountains of Nepal are highly vulnerable to climate change. Efforts to manage and restore natural environments can help people residing in these mountain ecosystems to adapt to a changing climate. A sound understanding of their adaptive capacity is therefore critical for effective adaptation measures on the ground. Thus, ecosystem-based approaches were piloted in the Panchase area of Nepal through the global "Ecosystems-based Adaptation (EbA) in Mountains" programme.

In order to reduce the vulnerability of local communities and enhance ecosystem resilience, homestay business promotion was a key part of the EbA approach. Further, a set of EbA measures was implemented as part of the integrated approach. These measures helped to diversify livelihood opportunities and reduce the shocks and stresses of climate change. Women were able to participate more effectively and their ability to earn economic, social, cultural and environmental benefits was enhanced. This helped to improve gender resilience, as linked with the protection of different ecosystem services and the preservation of community culture.

Keywords:

climate change

Ecosystem-based Adaptation

gender resilience

homestay

Background

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Rising temperatures create diverse challenges for the management of ecosystem services, particularly with regards to service provisioning and regulation. These challenges result in a decline in the quality of ecosystem services, which contributes to the loss of biodiversity. This loss of biodiversity ultimately has disastrous effects on human wellbeing (ICIMOD, 2019). This assertion is supported by the Millennium Impact Assessment, which recognises that the sudden change in climate is one of the major factors contributing to the degradation of the environment. Impacts on ecological services due to climate change are significantly hampering the lives of the world's poorest and further exacerbating poverty and deprivation (Gentle & Maraseni, 2012; ICIMOD, 2019). According to the 2007 Intergovernmental Panel on Climate Change (IPCC) report, people residing in temperate and tropical Asia are more likely to face the adverse effects of climate change, including extreme events like floods, landslides, glacier melts and forest fires.

Nepal is an agricultural country situated in the Hindu-Kush Himalayan region and is bestowed with the diversity of the Himalayan range. Agricultural systems and practices make up 37.4% of Nepal's total GDP (Nepal & Hening, 2013). However, over the last century, temperatures have risen in the Himalayan country of Nepal (ICIMOD, 2019; IPCC, 2007). Changes in precipitation patterns and warming rates have altered hydrological regimes, decreased permafrost, and changed land use and land cover (LULC), amongst other impacts. Climate-induced disasters such as erratic rainfall, unpredictable monsoons, droughts and landslides are now common (Gentle & Maraseni, 2012; ICIMOD, 2019; Machhi, 2011; Shrestha et al., 2000; World Bank, 2009). These events have impacted livelihoods and worsened economic insecurity by increasing the likelihood of crop failure and water scarcity (Gentle & Maraseni, 2012; Kohler et al., 2010; Machhi, 2011; Martson, 2008). According to Fischer et al. (2002), the expected rise in temperature of 1.5–2.5° C will dramatically reduce the production of food crops like rice, maize and wheat. Therefore, climate change is not only reducing agricultural productivity, but it is also having substantial impacts on the national economy of Nepal, particularly the economy of rural areas.

Climate change is predicted to reduce the livelihood assets of remote communities, cause fluctuations in economic growth and threaten the lives of rural women and children (Adhikari et al., 2018; Gentle & Marseni, 2012; ICIMOD, 2019). Since women already have limited access to crucial natural resources such as land, they are even more vulnerable to climate change (UNDP, 2010).

Rural Nepal is undergoing a complex transition period involving out-migration, urbanisation and the commercialisation of the local economy. In 2015, Nepal faced a disastrous earthquake measuring 7.8 on the Richter scale. The earthquake has affected Nepal's economic, social and environmental spheres. Tourism forms the economic backbone of the country, and many rural communities rely on seasonal tourism (Ulak, 2015). The earthquake also adversely impacted tourism in the country.

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Panchase is a rural region in western Nepal. Its residents are greatly dependent upon water, agriculture, forest products and various other natural resources (Adhikari et al., 2018). However, changes in precipitation levels and rising temperatures have caused rampant habitat loss, crop failure and water scarcity. This has adversely affected rural livelihoods and the overall socio-economic profile of the region (Dixit et al., 2015; IUCN, 2014). These changes are only expected to worsen over time.

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Attention to gender, especially the involvement of women in environmental activities, has produced multiple positive effects. These effects can be seen in environmental campaigns, development projects and broader social movements. In a post-conflict country like Nepal, where political stabilisation has taken place only recently, the importance of including women in environmental stewardship cannot be stressed enough (Kim & Gururani, 2014).

Various adaptation studies have been conducted in the Panchase region. Adaptation is generally defined as a systematic approach that integrates socio-economic and ecological systems in order to tackle the consequences of climate change (Gallopin, 2006; Smit et al., 1999). Ecosystem-based Adaptation (EbA) in particular can be understood as the use of biodiversity and ecosystem services as part of an overall strategy to assist people in adapting to the adverse effects of climate change (CBD, 2009). EbA is based on an integrated approach that constitutes the range of conservation, restoration and sustainable ecosystem management practices that assist in building ecosystem resilience (Adhikari et al., 2018; Dixit et al., 2015). The IPCC (2001) report defines resilience as “the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation and the capacity to adapt to stress and change.” Thus, ecosystem resilience is the capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them. Resilient ecosystems can carry on delivering services and benefits despite disturbances. If they are not resilient, ecosystems are unable to function and deliver services and benefits (Natural Resources Wales, 2016).

IUCN Nepal identified homestay businesses as a way to build ecosystem resilience and, importantly, focused on including women in these efforts. Homestay is a type of accommodation where visitors or guests pay directly or indirectly to stay in private homes where they interact with a host family. The host family usually, but not always, lives on the premises and shares the home's space with the guests (Lynch, 2003 quoted in Sweeney, 2008). IUCN Nepal strengthened homestay businesses in the Panchase area under an EbA project to foster green businesses, promote efficient use of natural resources and enhance gender resilience.

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Methodology

The Panchase region makes up the western part of Nepal's mountain ecosystems and has linkages with the lowlands and the high Himalayas of the Annapurna range. It covers an area of 278.7 km² and is bestowed with rich natural and sociocultural resources (IUCN, 2014). The region is comprised of 17 different Village Development Committees (VDCs). A VDC is the lowest administrative unit of the country. Nepal is divided into 14 zones and 75 districts, and each district has several VDCs. Each VDC is further divided into several wards, depending on the population of the district, with an average of nine wards. Working at the VDC-level, IUCN Nepal chose to work with homestay businesses as a point-of-entry into the local economy. The homestay businesses we worked with were the Panchakoshi community homestay business in the VDC of Arthar, the Chitre rural tourism homestay business in the VDC of Chitre, the Boudha Tamu community homestay business in the VDC of Bangefadke, and the Sidhane community homestay business in the VDC of Bhadure Tamagi. Homestay businesses are expected to reduce the environmental vulnerability of local communities by enhancing their resilience to climate change.

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As previously mentioned, targeted VDCs included Arthar, Chitre, Bangefadke and Bhadure Tamagi of the Parbat, Syangja and Kaski districts.¹ These VDCs lie along the path of multiple trekking routes, including the Annapurna-Panchase trek, the Pokhara-Panchase trek, the Panchase-Naudanda trek and various other short trekking routes (IUCN, 2014). Therefore, they are greatly impacted by tourism. Each of

1 According to the new current governance structure, these VDCs now lie in Kusma Municipality and Modi Rural Municipality of the Parbat district, the Phedikholra Rural Municipality of Syangja district and the Pokhara Metropolitan City of Kaski district.

the previously mentioned four homestay businesses is affiliated with the tourism development board and registered with the Ministry of Culture, Tourism and Civil Aviation (MoCTA, now the Ministry of Tourism, Industry, Commerce and Supplies of Gandaki Province or MoTICS).

IUCN Nepal adopted an integrated and holistic EbA approach to ecotourism. EbA measures were implemented at the field level through activities like the promotion of women-led community homestay businesses. For the EbA programme, both existing and interested homestay communities were selected. Before implementing the EbA measures, awareness-raising, institutional-strengthening and capacity-building activities were conducted at existing homestay communities. A homestay business training session was delivered to each interested homestay community. Further, homestay groups were formed from the interested households in each VDC. These groups, with the help of IUCN, then registered their homestay business with the former MoCTA (now MoTICS). After these initial steps, EbA awareness-raising activities were conducted for the new homestay businesses. Furthermore, exchange visits among the different homestay communities took place. In total, 60 households from four different homestay communities were engaged.

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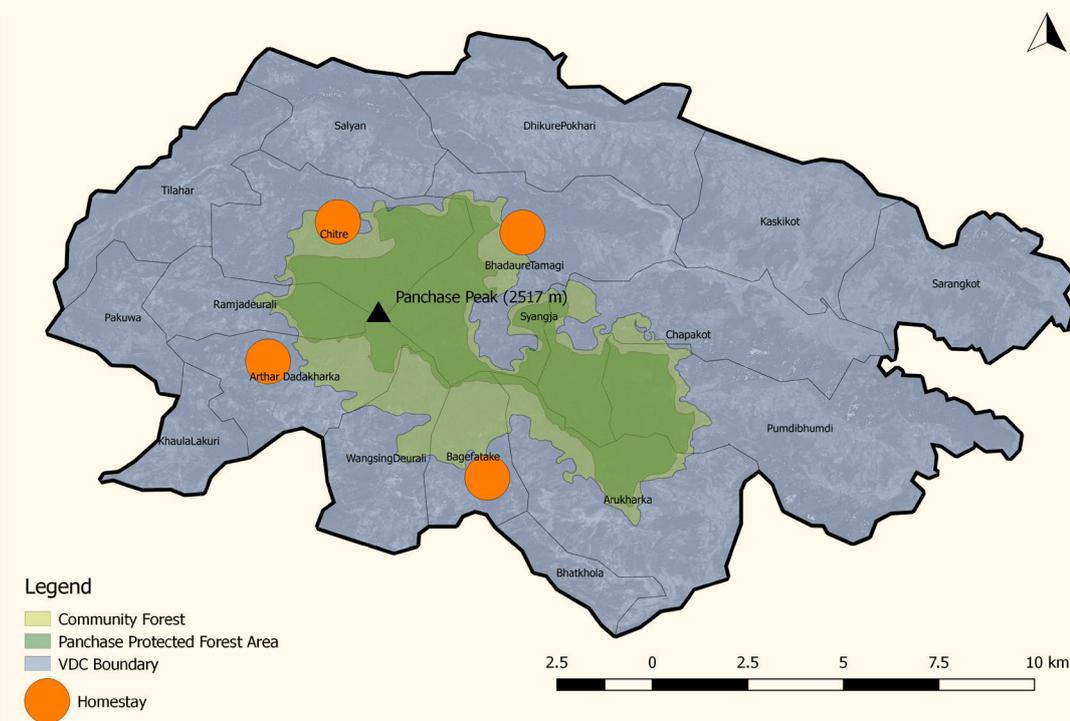


Figure 1. Map showing the homestay sites

Source: Provided by the authors

As part of the project, a set of EbA measures and activities for homestay businesses was created and implemented. Some of these measures and activities included business management skills training (with a focus on homestay-relevant skills like hospitality, financial management, record keeping, etc.), cultural conservation training, the establishment of an information centre, organic vegetable and fruit farming, bee farming, waste management and pollution control, sanitation and hygiene improvement, efficient use of kitchen wastewater, biogas promotion, livestock farming and improvement of livestock sheds, organic manure improvement, installation of improved cookstove, in situ conservation of different species, water source protection, pond conservation, soil erosion control, broom grass plantation, and the promotion of agroforestry. Financial support was provided for most EbA measures. Most of these homestay communities are ethnically Gurung. To promote the preservation of Gurung culture and tradition, a cultural museum was established in the village of Sidhane.

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Figure 2. Board at a homestay

Photo credit: Anu Adhikari

Homestays were primarily run by women, with the support of male family members, making women the business leads. In each locality, homestay business heads joined to form a business group. Therefore, all EbA measures were implemented and managed by a group of women. To facilitate these businesses, orientation trainings were delivered in different communities, and were targeted at female household members

responsible for homestays. The criteria for running a homestay were that the home should have basic infrastructure such as a room for lodging, restroom provisions and a separate kitchen.

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Figure 3. A homestay group welcomes guests

Photo credit: Anu Adhikari

This study was carried out in 2017. Data was collected through four focus group discussions and 15 key informant surveys with women from various homestay business groups. Secondary literature was also reviewed. The personal experiences of the lead author provide a further layer of contextualisation, as she was directly involved in the coordination and implementation of the EbA programme. Information about the status of homestay businesses in the years following the project (2018 and 2019) was also incorporated into the study.

Results and findings

Tourism is traditionally associated with leisure and vacation, and tourists look for rejuvenation and relaxation on a holiday. In the year 2011, the Nepal government celebrated 'Nepal Tourism Year,' which was envisioned to raise the number of tourists visiting Nepal to one million tourists per year. As a result, thanks to support from the Government of Nepal and local organisations, during 2011 communities were motivated

to engage in ecotourism. As the Nepalese mountains and hills have high biodiversity and natural beauty, many tourists want to visit the mountains during their travels. However, due to poor accessibility, remoteness, and minimal infrastructure, opportunities for doing so are scarce. This gap in accessibility is what homestay businesses strive to fill.

Homestay businesses in the Panchase region are still in their early years. Fifteen homestays have been established from the support of different stakeholders, including IUCN's EbA programme, of which most are still in operation. A few remain dormant due to a lack of adequate management oversight and labour shortages. More than 185 local people are directly involved and employed in these businesses. All homestay businesses supported by the programme adhere to EbA principles and follow sustainable consumption and production guidelines. Some key findings and observations are summarised below.

Nurturing green tourism

Green tourism is comprised of three interlinking components: social goals, economic goals and environmental and resources goals (Azam & Sarker, 2011). In the Panchase region, homestay businesses were able to promote these three components. The presence of business groups provided ample opportunities for social learning and positively impacted homestay promotion, profit margins, and conservation and resource management goals. The homestay groups also provided community members a collective platform to implement EbA measures. It is pertinent to note that the local homes that homestay businesses operate out of are predominately constructed from sustainable materials. Close proximity of tourists and households within a homestay arrangement also promotes the local culture and lifestyle, and sustainable use of local materials.

Green jobs at the local level

The increasing flow of tourists in the Panchase region has both positive and negative impacts on the environment. Positive impacts include greater employment opportunities, particularly for porters and tourist guides. Negative impacts include a high demand for local products, leading to possible overexploitation of local resources, which can threaten the ecosystem. Other negative impacts include increased pollution of the land, air and water, and the theft of rare and endangered species.

Most homestay owners are women. The businesses are run by groups called "mother groups" (*Ama Samuha*). They are involved in both income generation and ecosystem restoration activities such as planting broom

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grass along the roadside, organic farming, bee farming, agroforestry practice on abandoned lands, water source conservation, pond conservation, and the management of community forests. Women's roles in ecosystem management are widely celebrated in the literature (Singh, 2015). Women are also able to earn money by engaging in ecosystem restoration activities. For example, when they participate in water source protection, they are able to earn income for their labour through the project.

Women have also taken initiatives in practising agroforestry in abandoned lands and harvesting cash crops such as cardamom in their fields. This has contributed to the expansion of women-run enterprises through the selling of cash crops to tourists. Tourism has also spurred opportunities in allied sectors like grocery shops, tea stalls and butcher shops. Homestays have allowed women to diversify their livelihoods from traditional agricultural practices. Some women have also secured jobs in development projects run by various organisations. Women have benefitted the most from homestays' income-generation activities. The wider community has also tapped into government resources, such as funding for the promotion of homestay businesses and organic farming.

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Figure 4: A woman farmer harvesting honey

Photo credit: Erin Gleeson

The 2015 Nepal earthquake and associated landslides also majorly affected the tourism industry (Ulak,2015). The earthquake's total financial impact on the tourism sector alone is estimated to be USD 81.24 million (IRIS, 2015 cited in Ulak, 2015). However, the Panchase region was not heavily impacted by the earthquake. As the limited infrastructure in the region was not destroyed, international and domestic tourism was able to slowly resume within a couple months of the earthquake.

Efficient use of water

According to UNICEF, women and girls across the world collectively spend 200 million hours every day collecting water (UNICEF, 2016), eating up time that could be used for money-generating activities and decision-making processes (FAO, 2016). To ensure the efficient use of water in homestays, the project promoted the concept of recycling and reusing household water. For example, wastewater from washing clothes or utensils was collected in a pit and reused in home gardens. Structures were also built for drying home utensils in the sun after washing. These activities have not only ensured the efficient use of water but have also increased produce production from home gardens. Produce from home gardens, which is frequently organic, is sold to tourists. Time saved from water collection is used for other activities, such as improving livestock sheds and separating urine and compost manure for organic vegetable farming.

The EbA programme also promoted the conservation and management of natural water resources such as ponds in the Panchase region in order to help ensure water security. Ponds have cultural and religious values, and the water from the ponds can be utilised both on and off farmland. Therefore, after the involvement of "mother groups" in homestay businesses, ponds were further utilised, preserved and conserved in the region.

Health benefits

The EbA programme supported the installation of biogas plants and improved cooking stoves in each homestay household. These installations reduced a household's dependency on firewood, the collection of which is typically women's responsibility. In addition to freeing up time for women, forest resources are also protected. Further, the use of biogas and improved cooking stoves has discouraged the use of traditional woodfire cooking stoves. Traditional woodfire cooking stoves are known to adversely affect the health of users, who are typically women.

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Multiplier effects in marginalised communities

Homestay businesses provide opportunities to disadvantaged Dalit (the so-called ‘untouchable’ caste) community groups in the region, such as the Sarki ethnic group, who otherwise face economic exclusion. The homestay groups have adopted a partnership approach that ensures an equitable distribution of guests amongst all homestay hosts. The groups jointly organise cultural and other recreational programmes for tourists, increasing social cohesion. Homestay businesses are helping women to become more self-confident and actively engage in the preservation of their culture. Women from the Sarki ethnic group reported that they feel more comfortable engaging with their community thanks to their homestay businesses.

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Figure 5. Sidhane homestay group with guests

Photo credit: Khadga Kharel

Gendered resilience

Women are the architects of resilient households (Chanamuto & Hall, 2015). Previously, the people of Panchase were primarily dependent upon agricultural commodities like rice, wheat and maize. In the past, household income greatly fluctuated due to uneven weather patterns and unstable crop production. Most people were unaware of cash crops. Through homestay businesses, communities have increased their incomes, diversified their livelihoods and acquired new skills. Practices

such as community agroforestry have also contributed to environmental stewardship. Other multiplier effects include improvements in health. Engagement with different ecosystem restoration activities, such as water source protection, pond conservation, controlling soil erosion through broom grass plantation and low-cost bioengineering techniques, is enhancing the community's adaptive capacity.

Communities, and especially the women within them, are realising the intertwined nature of their homestay businesses and the environment. They understand that the protection of mountain ecosystems directly impacts the success of their businesses. This has enhanced women's roles in and ownership of nature conservation efforts. The EbA homestay business programme in Panchase is an exemplary case of a programme that connects ecotourism, gender, protection of the ecosystem and climate change. However, homestay businesses are not without their challenges. These include the high out-migration rates of young people in the region. As a result, many homestays are increasingly being run by the elderly. Further, the government continues to pay little or no attention to infrastructure development in the region, which is needed to enhance tourism opportunities. Since the Panchase region is geographically close to urban Nepal, there is potential to link local entrepreneurial activity with urban markets.

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References

- Adhikari, S., Baral., H. and Nitschke, C. (2018). 'Adaptation to Climate Change in Panchase Mountain Ecological Regions of Nepal'. *Environments* 5:1–18. <https://doi.org/10.3390/environments5030042>.
- Azam, M. and Sarker, T. (2011). 'Green Tourism in the Context of Climate Change towards the Sustainable Economic Development in the South Asian Region'. *Journal of Environmental Management and Tourism* 2:6–15.
- Secretariat of the Convention on Biological Diversity (CBD). (2009). *Connecting Biodiversity and Climate Change Mitigation and Adaptation: Key Messages from the Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change*. Montreal, Canada: United Nations Convention on Biological Diversity. <https://www.cbd.int/doc/publications/ahteg-brochure-en.pdf>.
- Chanamoto, N.J.C. and Hall, S.J.G. (2015). 'Gender Equality, Resilience to Climate Change, and the Design of Livestock Project for Livelihoods'. *Journal of Gender and Development* 23 (5):515–530. <https://doi.org/10.1080/13552074.2015.1096041>.
- Dixit, A., Karki, M. and Shukla, A. (2015). 'Vulnerability and Impacts Assessment for Adaptation Planning in Panchase Mountain Ecological Region, Nepal'. Kathmandu, Nepal: Government of Nepal, United Nations Environment Programme, United Nations Development Programme, International Union for Conservation of Nature, German Federal

- Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and Institute for Social and Environmental Transition-Nepal.
- Food and Agriculture Organisation (FAO). (2016). *How Can Women Control Water? Increase Agriculture Productivity and Strengthen Resource Management*. Rome: FAO.
 - Fischer, G., Shah, M. and Velthuisen, H.V. (2002). *Climate Change and Agricultural Vulnerability*. Vienna: IIASA.
 - Gallopin, G.C. (2006). 'Linkages between Vulnerability, Resilience, and Adaptive Capacity'. *Global Environmental Change* 16 (3):235–316.
<https://doi.org/10.1016/j.gloenvcha.2006.02.004>.
 - Gentle, P. and Marseni, T.N. (2012). 'Climate Change, Poverty and Livelihoods: Adaptation Practices by Rural Communities in Nepal'. *Environment Science and Policy* 21:24–34.
<https://doi.org/10.1016/j.envsci.2012.03.007>.
 - International Centre for Integrated Mountain Development (ICIMOD). (2019). *The Hindu Kush Himalayan Assessment: Mountain Climate Change Sustainability and People*. Kathmandu, Nepal: ICIMOD and Hindu Kush Himalayan Monitoring and Assessment Programme (HIMAP).
 - IPCC (2001). *Climate Change 2001: Synthesis Report. Contribution of Working Group I, II and III to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press.
 - IPCC (2007). 'Summary for Policy Makers'. In: M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. Linden, P.J. and C.E. Hanson (eds.) *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press.
 - International Union for Conservation of Nature (IUCN) (2014). *Forests Resource Conservation: Building Resilience of Forest Ecosystem in the Panchase Area*. Kathmandu, Nepal: IUCN.
 - Kim, B. and Gururani, S. (2014). 'Special Section: Gender in the Himalaya'. *Himalaya: The Journal of the Association for Nepal and Himalayan Studies* 34 (1):36–42.
 - Kohler, T., Giger, M., Hurni, H., Ott, C., Wiesmann, U., von Dach, S.W. and Maselli, D. (2010). 'Mountains and Climate Change: A Global Concern'. *Mountain Research and Development* 30 (1):53–55. <https://doi.org/10.1659/MRD-JOURNAL-D-09-00086.1>.
 - Macchi, M. (2011). *Framework for Climate-based Climate Vulnerability and Capacity Assessment in Mountain Areas*. Kathmandu, Nepal: International Centre for Integrated Mountain Development (ICIMOD). <https://doi.org/10.53055/ICIMOD.542>.
 - Marston, R.A. (2008). 'Land, Life, and Environmental Change in Mountains'. *Annals of the Association of American Geographers* 98 (3):507–520.
<https://doi.org/10.1080/00045600802118491>.
 - Natural Resources Wales (2016). *A Summary of the State of Natural Resources Report (SoNaRR): An Assessment of the Sustainable Management of Natural Resources*. Technical Report. Natural Resources Wales, UK: SoNaRR.
 - Nepal, R. and Henning, T. (2013). *Remittances and Livelihood Strategies: A Case Study in Eastern Nepal*. Kassel University Press GmbH, Germany.
 - Shrestha, A. B., Wake, C.P., Dibb, J.E. and Mayewski, P.A. (2000). 'Precipitation Fluctuations in the Himalaya and its Vicinity: An Analysis Based on Temperature Records from Nepal'. *International Journal of Climate* 20:317–327. [https://doi.org/10.1002/\(SICI\)1097-0088\(20000315\)20:3<317::AID-JOC476>3.0.CO;2-G](https://doi.org/10.1002/(SICI)1097-0088(20000315)20:3<317::AID-JOC476>3.0.CO;2-G).

- Singh, K. (2015). 'Women and Their Role in Natural Resources: A Study in Western Himalayas'. *International Journal of Research-Granthaalayah* 3 (10):128–138.
<https://doi.org/10.29121/granthaalayah.v3.i10.2015.2938>.

E.S.

CH.1
- Smit, B., Burton, I., Klein, R.J.T. and Street, R. (1999). 'The Science of Adaptation: A Framework for Assessment'. *Mitigation and Adaptation Strategies for Global Change* 4 (3): 199–213. <https://doi.org/10.1023/A:1009652531101>.

CH.2

CH.3

CH.4
- Sweeney, L. and Coughlan, J. (2008). 'Do Different Industries Report Corporate Social Responsibility Differently? An Investigation through the Lens of Stakeholder Theory'. *Journal of Marketing Communications* 14:113–124.
<https://doi.org/10.1080/13527260701856657>.

CH.5

CH.6
- Ulak, N. (2015). 'Nepal's Earthquake 2015: Its Impacts on Various Sectors'. *The Gaze: Journal of Tourism and Hospitality*. 7:58–86. <https://doi.org/10.3126/gaze.v7i0.15120>.

CH.7

CH.8
- United Nations Children's Fund (UNICEF) (2016). 'Collecting water is often a colossal waste of time for women and girls'. <https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls>.

← TC

- United Nations Development Programme (UNDP). (2010). *Gender, Climate Change and Community-Based Adaptation*. New York City: UNDP.
- World Bank (WB). (2009). *South Asia: Shared Vision in Development and Climate Change*. Washington, DC: World Bank.