



Chapter 19

Impacts of Climate Change on Mountain Tourism: Adaptation Strategies for Sustainable Development

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ABSTRACT

Mountain tourism, a vital component of global tourism, faces significant challenges due to the ongoing impacts of climate change. This chapter explores these impacts, emphasizing the need for adaptation strategies that align with sustainable development goals. Through a review of existing literature, case studies, and policy analysis, this chapter provides insights into how mountain tourism can be resilient in the face of climate change. The chapter concludes by aligning the discussed strategies with the United Nations Sustainable. By aligning tourism practices with global sustainability objectives, mountain regions can enhance their resilience, ensuring that tourism remains a viable economic activity while preserving the environment and supporting local communities for future generations. This chapter thus provides a comprehensive framework for understanding and addressing the challenges posed by climate change to mountain tourism, offering actionable insights for policymakers, industry stakeholders, and researchers.

1. INTRODUCTION

Mountain tourism therefore remains a critical part of the international tourism map owing to activities such as skiing, hiking among other activities which millions of tourists get to engage in every now and then. This sector not only offers huge economic revenues to local population but also supports the conservation of cultural and natural environment. However, the emerging notion of climate change has escalated great concerns over the sustainability of mountain tourism, hence the need to enhance strategies for the implementation of adaptation measures that are in line with sustainable development goals (SDGs). The alterations of the climate through increased temperatures, changes in the patterns of precipitation and the rising incidences of extreme weather events are felt in mountainous regions (Beniston et al., 2018). These modifications have a great influence on the physical space especially on accumulation of snow, glaciation and species which are the major attraction of mountainous areas. For example, in the area of winter tourism such world-known mountain range as Alps has shown the decrease of snow cover that leads to decrease of winter skiing season and

DOI: 10.4018/979-8-3693-8764-1.ch019

instability in realization of such services depending on snow (Steiger &, 2013). In the same manner, in the context of the Himalayas it is shown that glacial shrinkage and variation in water resources have impacts not only on the tourism but to the people of those areas where water is a key source (Mishra et al., 2017).

Climate change is therefore a devastating reality that the tourism industry in the mountainous regions needs to consider. Seasonal loss of snow can cause a hike in the number of tourists reducing tourist earnings; many economies within these regions rely on tourism income (Scott et al., 2008). Moreover, adaptation, for instance, the technological expenditure for artificial snow production, diversification of tourism, and infrastructure requirements for climate change entails substantial costs to the public and private entities (Fang et al., 2020). Such economic impacts are reinforced by changes in the tourist behaviour when they opt for tourist destinations that are not sensitive to climatic changes which in turn could contribute towards unbalanced development and economic inequality between regions (Becken & Hay, 2012).

Beyond the environmental and economic impacts, climate change also threatens the social and cultural fabric of mountain communities. The erosion of traditional livelihoods due to changes in tourism patterns can lead to migration, loss of cultural practices, and weakened community resilience (Macchi et al., 2015). Furthermore, as cultural heritage sites and landscapes are altered or degraded by climate impacts, the cultural identity and attractiveness of these destinations may be diminished, affecting both local populations and the global community (Hughes et al., 2020).

With these difficulties, it becomes crucial to foster the adaptation measures able not only to respond to immediate effects of climate change but also build the sustainable tourism in mountains. Thus, these strategies must follow the concepts of sustainable development with appropriate integration of the economic, social, and environmental aspects with the focus on the present and future generations. This means that it can only be achieved through the improvement of the vulnerability of tourism structures, nature conservation and development and support to the communities (Gössling et al., 2012). Overall, climate change has a great deal of influence on the mountain tourism in aspects of environmental, economic and social repercussions. It is thus only possible to prevent the degradation of mountain tourism in the future through the use of effective accommodative measures that are in congruity with the sustainable development goals. Such strategies should be sustainable, fair, and sustainable, aimed at maintaining the dynamics of development of the mountain territories in the context of climate change and keeping historical and geographic indigenous of these territories for the next generations.

1.1 Overview of Mountain Tourism

Mountain tourism is one of the biggest sub-sectors of the tourism industry where millions of tourists visit some of the beautiful and inaccessibility in the world. These regions bring different experiences from sports like skiing, trekking, mountain climbing, cultural and religious experiences among others. Other attractions that come with mountain destinations include; bio diversity and calor cultural characteristics that surround them. Tourism industry in those regions provides the main income source for locals, which is making it essential in the regions' economy. However, the things that attract tourist to mountain destinations include snow covered mountain ranges, glacier, natural unadulterated environment, they are very much vulnerable to climate change impacts. These environments transmuting and they create challenges for the balance between tourism promotion and the protection of texture and biosphere of these regions (Nepal & Chipeniuk, 2005; UNWTO, 2022).

1.2 Climate Change: Definitions and Key Concepts

Climate change is any long-term alteration in average weather patterns and their variability around those averages, and all evidence suggests that these changes are largely due to human activities, especially increased emission of what are commonly known as 'greenhouse gases' including carbon dioxide (CO₂). These developments are observed in climate shifts such as; continued increase in global temperature, incidences of extreme weather events among others.

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