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学 位 論 文 内 容 の 要 旨

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学 位 論 文 題 名

Tourism-led socioenvironmental changes in Sagarmatha National Park, Nepal Himalaya
（ネパール・ヒマラヤ, サガルマータ国立公園における観光がもたらした社会的・環境的変化）

Protected areas (PAs) throughout the world are vital for conserving natural and cultural resources, enhancing livelihoods and stimulating sustainable development. As one type of PAs, national parks are essential in developing nature-based tourism destinations that promote efficient management of natural resources and socio-economic development. Mountains, characterized by diversity, remoteness, and difficult accessibility, have been exclusive for nature and culture-based tourism. The increase in tourists to national parks in mountain regions poses both opportunities and challenges for sustainable mountain development. In order to achieve sustainable development in mountain regions, it is crucial to examine social and environmental characteristics, such as the landscape, energy use, and population transformation.

This study explores the transformation of the tourism-related facilities, changes of forest cover, and trends of local in-migration in Sagarmatha National Park (SNP) of Nepal as an example of the Himalayan region. The selected study area incorporates the highest ecological system on the globe and a protected core zone and a buffer zone. The datasets used in this study were from extensive fieldwork, questionnaire and semi-structured interview surveys, group discussions, participant observation, and remote sensing data analysis. A total of five periods of field investigations were conducted. In addition, questionnaire surveys targeting the owners/managers of tourism-related facilities and local people and interview surveys with various community leaders, officials, and school principals were conducted in the park during the period of 2017–2019. In total, 888 sets of answer sheets were collected through the questionnaire surveys. Among the respondents, 563 were facility owners and managers, and 586 were migrants. Further, 1989, 2002, and 2015 remote sensing data have been classified to detect the forest cover change in the park.

The results show that the types, distribution, ownership, capacity, and energy use of tourism-related facilities in the park have been transformed. The growth of lodges in selected villages reveals that villages in the buffer zone have experienced more increases. Migrant non-Sherpas (39%) have been substantially involved in managing the facilities, although local Sherpas (50%) have been key players to lead the tourism business in the area. This study

also revealed a significant transformation of energy sources in facilities. Facilities now commonly use liquefied petroleum gas (LPG) and electricity. Diverse energy sources are exploited in the facilities. However, the uneven distribution of the facilities affects the spatial use of energy sources. Growth of the tourist number, improvement of conditions of porters' accommodation, and the increase of migrant labor are the main factors driving the transformation.

The satellite image classification revealed that forest cover decreased from 146 km2 in 1989 to 100 km2 in 2015. Increased tourism activities are considered the main reason for the decrease in forest cover. However, under strict national park regulations and by community efforts, the decreasing rate of the forest cover had slowed between 2002 and 2015. The availability of other alternative energy sources has also significantly impacted the forest cover in SNP.

Moreover, the in-migration of local people to SNP has been divided into two patterns: seasonal migration and permanent migration. Seasonal migrants are mainly trekking porters, trekking guides, and mule owners/keepers, who stay less than six months in the park per year. Permanent migrants are mostly facility managers, owners, and staff, who remain more than six months in the park per year. The migrants have contributed to the economic development in the park. At the same time, they have also brought potential challenges to the area.

The topographic barrier greatly hinders tourism-related mobility in SNP. The movement of tourists, local people, and cash brought by tourism has far-reaching impacts on the local environments and society. Tourism-induced imbalanced development and unequal benefits among villages have brought energy pressure. The findings from this study suggested that diversification of trekking routes, quality improvement of tourism-related facilities and service, and engagement of locals, migrants, tourists, and the national park in park development could help mitigate the imbalanced development and unequal benefits.