

# Abstract

In Vietnam, protected areas are designated as “prohibited areas” or “isolated areas”, which are managed by strict legal instruments including regulations. Despite such measures, there has been ongoing loss of forest biodiversity. Excessive dependence on forest ecosystem services, especially by poor local communities living in the buffer zones of protected areas, is a major factor driving such biodiversity loss. Few studies have attempted to establish empirical data on the dependence of local communities on forest ecosystem services. This research aims 1) to understand details of the forest dependence, and 2) to provide a point of reference for the local government in considering alternative livelihood options for the forest-dependent communities through utilizing of local resources. The buffer zones of Bach Ma National Park situated in Central Vietnam were selected as the study area. This dissertation consists of seven chapters.

Chapter 1 describes the background of this research in which biodiversity loss in protected areas in Vietnam and its driving factor relative to livelihoods of poor local communities is clarified. Chapter 2 presents a literature review on the concepts used in this research. Details of the study area are outlined in Chapter 3, which also provides an overview of the methodology used in this research.

Chapter 4 explores the collection of forest ecosystem services by local communities from both a plain and mountainous districts, all within the buffer zones. The results show that local communities, especially the ethnic minorities living in the mountainous districts, depend on a wide range of forest provisioning ecosystem

services to supplement their livelihoods. In addition, the spatial distribution of the collection locations and frequency of collection are clarified in relation to factors such as land use, administrative units, terrain conditions, accessibility, resource abundance, and forest governance.

Chapter 5 clarifies the dependence of the local communities living in the buffer zone to the southeast of the Park on the forests. The calculation of monetary value of these collected ecosystem services and the assessment of their contribution to total household incomes are also carried out. The types of ecosystem services collected, the rate of their contributions to the total household income, and the rate of households conducting the collection are compared to those investigated in other parts of the buffer zones and other regions in Vietnam. Based on the comparisons, it is deduced that the local communities in the area are highly dependent on the forest ecosystem services for their livelihoods.

Chapter 6 presents the detection of local resources which can be utilized for livelihood improvement of the forest-dependent communities. By employing participatory mapping, multi-criteria decision analysis, and group discussion, the local resources with natural and cultural values are detected, and their possibility to be utilized for tourism development are assessed. As the results, the research shows some local resources as important assets for tourism development.

Chapter 7 provides a brief summary of the chapters and general observations based on the results; it further sets out recommendations for the local government, and it outlines the importance of the research. Finally, the limitations of the research and perspectives on future study opportunities are provided.

**Keywords:** forest ecosystem services, local resources, local livelihood, livelihood improvement, forest dependence, buffer zone, Vietnam.