

Chapter 2 Introduction

Masahiro Ichikawa

Research Institute for Humanity and Nature

This chapter examines the influences of human activities on forest utilization at the four study sites. The study period covered 50 to 100 years, depending on the availability of reliable information at each site. This project examined the sustainable use of forests and biodiversity, with the objectives of clarifying the land-use changes at each site, identifying the drivers responsible for these land-use changes, and elucidating the characteristics of these drivers. The study methods included analysis of old maps, aerial photographs, and satellite images to understand the land-use changes. A review of published literature and interviews of relevant persons were also performed to learn more about the drivers responsible for the observed land-use changes.

For Sarawak Malaysia, Ichikawa examines the drivers responsible for the land-use changes using land-use maps from the 1960s to the 1990s. For Sabah, Kitayama et al. analyze the characteristics of land-use changes in the Kinabaru Mountain area and in the Deramakot lowland using satellite images from the 1970s to 2002. Three papers discuss Japan's Yaku Island. In the first, Otani et al. deal with forest-use changes in the western part of the island and in part of the World Heritage Site in the study area. Since this is a main area for their ecological study, this paper provides basic data on the impacts of human activities on the forests of the area. In the second, Sprague et al. perform a GIS analysis of land-use changes along the rim of the island, where human activity has been most intense. In the third, Hirai discusses the role of forests, the benefits they generate, and changes in forest values during six periods from the 17th century until the present. In addition, Miyamoto et al. created maps of land-use changes at Abukuma from 1908 to 1997 using old maps and aerial photographs, and analyzed the background factors responsible for the changes. Finally, Takada et al. describe the possibility of transitions in the land-use changes for the four sites using matrices, and examine methods for the projection of land use under different scenarios.

By comparing the land-use changes at each site, such as the relationship between Japan and Malaysia resulting from the timber trade, land-use changes in each region can be better understood. The results of these analyses of land-use changes provide basic information for the projection of land-use changes under different scenarios and permit the creation of maps of biodiversity, ecological functions, and ecological services in the final chapters.