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# Migration and ethnicity as cultural impact factors on land use change in the rainforest margins of Central Sulawesi, Indonesia

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## Summary

Human activity endangers tropical forests in different parts of the world. The conflicting interests of nature conservation on the one hand, and the livelihood of farmers living at the forest margins, on the other, clash noticeably in so-called hotspots of biodiversity, such as the Lore Lindu region of Central Sulawesi, Indonesia. Biodiversity generally decreases along a land use gradient from natural forest to agroforestry and annual crop systems. Thus, before solutions for a sustainable balance between conservation and the needs of people living at the forest margins can be sought, changing land use strategies and the factors that influence them must be analyzed. While similar studies often concentrate on economic indicators of land use change only, this chapter highlights the importance of two cultural realities, namely migration and ethnicity. We will demonstrate the great influence of these two factors on land use decisions and on the accessibility of land in the Lore Lindu region.

Based on results from previous qualitative studies, we selected three upland villages, which represent a continuum that leads, in terms of migration history, from a pre-transition village, to a transitional village, to a post-transition village. We used quantitative and qualitative methods for our analysis.

The results show a general land use change in the region, ranging from a strategy that places food first (e.g., rice) to one that places cash first, especially by the cultivation of cacao. This change cannot be observed to the same

extent in the study region as a whole. It varies from village to village, depending on the share of households belonging to the Bugis migrants. Bugis as an ethnic group and as migrants have an enormous effect on the land use decisions of local ethnic groups in their respective villages. Strong ethnic networks among Bugis migrants play an important role not only with respect to their village preferences, but also with respect to the transfer of knowledge regarding agricultural management. A lack of interaction between local and migrant ethnic groups results in differences in the efficiency of cacao cultivation. While the Bugis migrants mainly buy their agricultural land from local farmers or, depending on the village's migration history, from other Bugis households, members of the autochthonous ethnic group usually clear the primary forest. The findings of the present study reveal that an analysis of migration and ethnicity is a crucial precondition to finding sustainable solutions for ensuring that the margins of the rainforest in the Lore Lindu region remain stable. This chapter will emphasize that, in addition to economic considerations, an analysis of the cultural forces that influence land use changes cannot be neglected.

*Keywords:* migration, ethnicity, cultural orientation system, land use change, access to land, Central Sulawesi, Indonesia

## 1 Introduction

Located within the bio-geographic region of Wallacea, the island of Sulawesi, Indonesia, represents one of the world's most important hotspots of biodiversity. Within this region, the Lore Lindu National Park of Central Sulawesi plays an essential role in the conservation of endemic fauna and flora (Waltert et al. 2004, Schulze et al. 2004a). As elsewhere in the tropics, however, this forest reserve is endangered by human activities (for a general overview of deforestation in the tropics, see Achard et al. 2002, DeFries et al. 2000, Turner et al. 1990, Watson et al. 2001). Between 1971 and 2002, the area of primary forest in the Lore Lindu region decreased by 18 percent, resulting in an annual rate of deforestation of 0.6 percent (Erasmi et al. 2004). Forest encroachments along with agricultural land conversion contribute greatly to causing severe disturbances of the region's ecosystems. As demonstrated by Schulze et al. (2004b) for the region covered in this chapter, in most cases diversity of bird, plant, and insect species decreases along a land use gradient from natural forest to agroforestry and annual cropping systems (for the diversity of beetles, see Bos et al. in this volume). Moreover, the risk of soil erosion on mountain slopes increases from natural forest to fallow land, to perennial crop systems (e.g., cacao, *Theobroma cacao*), and annual crops systems (e.g., maize; Kleinhans and Gerold 2004). Population growth and increasing commercialization, along with a growing need for further agricultural land, especially for cash crop and agroforestry use, aggravate this situation.