



Tropentag, October 5-7, 2011, Bonn

“Development on the margin”

## Poverty and Tropical Deforestation in Forest Margin Areas: Evidence from Central Sulawesi Indonesia

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### Abstract

Negative effects of climate change have made poverty and deforestation issues becoming important topics of global environmental discussion in recent years. It is still a challenge for many developing countries to disconnect poverty reduction from negative environmental effects including deforestation. Thus, more evidence from empirical studies is required regarding the impact of poverty on the rate of deforestation, especially empirical studies that provide more comprehensive approaches toward a poverty-deforestation link. This paper examines the relationship between poverty and deforestation in a tropical forest region in the vicinity of Lore Lindu National Park in Central Sulawesi, Indonesia. This park hosts a unique collection of endemic species, however, at the same time this region is characterised by a high rate of poverty and deforestation. Therefore, it is important to explore the link between poverty and deforestation in this region, in order to maintain the long term functioning of the forests and people livelihoods. To understand this relationship, we use a beta regression in our empirical model. Furthermore, poverty is a complex phenomenon. Thus, we include proxies of poverty from different dimensions as well as an index of subjective well-being (SWB) at the village level. Very little research on SWB has been done in developing countries and only a few have applied SWB as a proxy of poverty. Our analysis applies geo-referenced land cover data and socioeconomic data from 2001 and 2007, obtained from Landsat ETM+ scenes and surveys in 80 randomly selected villages, respectively. Our results suggest that there is a non-linear relationship between SWB as well as other proxies of poverty and deforestation. The improvement of well-being measured by the share of stone houses decreases the rate of deforestation in this region, but initially wealthier villages show a higher rate of deforestation. Other proxies of poverty such as literacy rates among villagers in the productive age also decrease deforestation. Our results are used to draw policy conclusions with respect to reduce forest loss. Therefore, to maintain the long term functioning of the agro-forest production system and thus to improve rural welfare, it is advisable that the policy options should be implemented.

**Keywords:** Beta regression, deforestation, poverty reduction, subjective well-being