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The Dynamic Role of Homegardens for Providing Food, Income and Ecological Services in Central Sulawesi, Indonesia

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Abstract

Traditional agroforestry homegardens with their high plant diversity contribute to households' food security and fulfil important social, cultural and ecological functions. Generating cash income in a commercialised homegarden may weaken its contribution to providing food. In Central Sulawesi, the cash crop cocoa was integrated into traditional homegardens about 10 years ago. The aim of this study was to assess the possible influence of cash crop production on plant species richness and use over time.

In 42 homegardens randomly selected from five villages in the Napu valley, Central Sulawesi, inventories of all useful plants were conducted in 2012. Most of these homegardens were already surveyed in 2001, 2004 and 2007. Gardeners were interviewed about the main use of each species and the importance value 'SDR' calculated per village for each use category.

In total, 210 useful plant species were documented in 2012. Forty-six species were mainly used for medicine, 36 for fuelwood/timber, 35 for vegetable, 31 for fruit, 26 for spice, 10 each for staple and stimulant/cash crop and the remaining 16 for other uses. In three villages inhabited by locals, spices had the highest SDR value in 2012, followed by fruits or vegetables. In 2007, however, staples had the highest SDR in two local villages, possibly as a reaction on the global food price crisis. In one of the villages inhabited by migrants and located on infertile soils, staples had the highest SDR in most of the years. After arrival, these migrant families had not yet access to paddy rice fields, thus growing staples for subsistence in their gardens. In the other migrant village, located on more fertile soil, stimulants, including the cash crops cocoa and coffee, constantly had the highest SDR. These migrant families largely depended on cash income generation from their gardens as they were only supplied with paddy fields for subsistence after arrival, but not yet with plots for tree crop plantations. Over time, however, the dominance of staples or cash crops decreased in the respective migrant villages and gardens diversified. Homegardens are thus resilient agro-ecosystems that contribute in a dynamic and flexible way to food security and income generation of rural communities.

Keywords: Agroforestry, commercialisation, food security, plant diversity