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The Potential of Agroforestry for the Rehabilitation of Degraded Land in Central Sulawesi, Indonesia

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Abstract

Between 1990 and 2000, the forest area in Indonesia decreased by more than 1.3 million ha per year, primarily due to conversion of natural forests into other forms of land-use, like agriculture and tree plantations. Indonesia, however, also has vast expanses of unproductive land such as degraded secondary forests and *Imperata* grasslands, rehabilitation of which could reduce the pressure on natural forests. In Central Sulawesi, farmers have traditionally used a system of enrichment planting to establish forest gardens. In these forest gardens, a wide variety of crops is cultivated under a cover of mixed useful tree species.

In this paper, three forest gardens in different parts of Central Sulawesi are compared with regard to their structure, species composition, diversity and their importance for rural livelihoods. The research methods included stand inventories, interviews with farmers and participatory observation. The paper describes the different systems for the establishment and development of forest gardens, determined by the previous form of land-cover. With up to 120 species of useful plants per hectare, forest gardens not only have a high species diversity, but they also provide a wide variety of products for use in the household or to sell for cash income. In the investigated households, up to 77 % of the cash income is generated from forest gardens, a number that underlines the important role of this land-use system for the improvement of rural livelihoods.

In Central Sulawesi, traditional forest gardens are a well established, sustainable and economically successful land-use system that requires low input, and can be flexibly adapted to different basic conditions. With slight modifications and local adaptations, this agroforestry system could be a model for the rehabilitation of degraded areas in other parts of Southeast Asia.

Keywords: Agroforestry, forest gardens, sustainable land use