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Characterization of undergrowth vegetation in Rainforestation Farming sites on Leyte, Philippines

presented by

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Abstract

The Philippines have experienced a severe loss of natural forests in just a few decades. In order to meet the growing demand for forest products, but at the same time protecting the few remaining primary forest stands, reforestation of grasslands or other unproductive sites proved to be a suitable option. One such reforestation scheme was developed at the beginning of the 1990s at the Visayas State College of Agriculture (ViSCA, now Leyte State University), located in the western part of the island Leyte, under the name of "Rainforestation Farming" (RF). Ecological assessment of natural as well as managed ecosystems is often restricted to woody plants of a certain minimum diameter. In the Philippines so far no study concentrating solely on undergrowth vegetation has been conducted.

The main goal of the underlying study was the documentation and characterization of undergrowth vegetation in differently aged Rainforestation Farming systems. A plant survey was conducted from March to June 2006 in three RF sites (2, 10, and 14 years old) as well as in a plantation stocked with the exotic tree *Gmelina arborea.* In total 30 plots of 25m² each were established. In the resulting 750m², 192 plant species were found of which 153 species could be determined to at least the family level. To assess abiotic factors influencing the development of undergrowth additionally measurements of photosynthetically active radiation (PAR) were performed.

The results revealed a clear difference between the sites in terms of plant species composition as well as life forms. Highest diversity and highest number of species, significantly different from the other RF sites, were found in the 10 year old site. No significant differences between RF sites and the *Gmelina arborea* plantation were identified. Light conditions seemed to play an important role for vegetation development.