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“Utilisation of diversity in land use systems:
Sustainable and organic approaches to meet human needs”

Steps from Single Use Plantation to Multiple Use Production Areas: A Strategic Forest Management Combining Economic Demands with Social- and Ecosystem Services on Hainan Island, China

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Abstract

In China, the demand for biomass is growing rapidly. FAO (2005) reports an increase in forest cover from 157 million ha 1990 to 197 million ha in 2005 (21.2 % land cover). It is meanwhile the land with the largest plantations worldwide. The expressed target is a 29 % forest land cover in 2050. However, parallel to this increase the land suitable for agriculture and forestry decreases due to land degradation, desertification and the expansion of cities and industries. Additionally the relative economic importance of agriculture and forestry is currently declining (12 % BIP). However, 800 million people are still living in the countryside, and 50 % of them do directly depend on agriculture and its products. This derives a clear need for a sustainable optimisation of agricultural and forest productive areas. A multiple-use forest can offer beside its environmental protection services alternatives for income and prevent rural migration.

Hainan Island takes part in an EcoProvince initiative of the Chinese government, focusing on issues such as biodiversity and combating desertification. In this context multiple-use forest management appears as a suitable instrument. The following points need to be researched into and optimised:

- specification of indigenous tree species suitable for plantation forestry;
- plantation conversion;
- strengthening additional forest services and biodiversity;
- a sustainable and simultaneous use of wood, Non Timber Forest Products (NTFP) and social services;
- opening up possibilities for income and viability for the local rural poor.

This paper discusses components of a flexible multiple-use forest management strategy within China's changing environment and market situation. The focus is set on sustainable management options and conversion plans for an exemplary pine plantation (*Pinus caribibaea*) on Hainan Island and combines economical demands with social and ecosystem services.

Keywords: Biodiversity, china, Hainan, multiple-use forest management, NTFP, plantation conversion