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## Regeneration Potential of Indigenous Tree Species from Forest Fragments in Exotic Tree Plantations in Ghana

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### Abstract

The conversion of tropical forests into forest tree plantations is widely practised throughout the tropics. Rather often the high expectations of economic and silvicultural benefits from tree plantations fail and stands become abandoned. Concepts for a re-valorisation and silvicultural improvement of these stands are mostly missing.

The Institute for World Forestry of the Federal Research Centre for Forestry and Forest Products and the International Center for Graduate Studies, University of Hamburg in collaboration with DuPaul Wood Treatment Ltd., Ghana plans long-term field research in forest plantations of the Ashanti region in Ghana. As a perspective it is envisaged that the planted pure stands of Teak and Pine will partly be transformed into heterogeneous stands enriched with indigenous tree species. Several forest fragments with indigenous forest trees are still present in the area. The objective of this ongoing study is to assess the ecological status of these forest fragments and to evaluate their potential for natural regeneration and enrichment of the neighbouring plantations.

A tree inventory carried out as full sampling of the forest remnants revealed the basic stand information. After stratification into ecologically important groups, data allowed the calculation of characteristic parameters indicating details of the stand structure and the tree species diversity. Emphasis was put on reproduction mechanisms of the indigenous trees and the investigation of their seed dispersal. Especially birds appeared to be a key factor for the seed distribution over short to medium distances. Their presence and effectiveness was assessed. Thereafter the regeneration potential could be evaluated for the forest fragments and neighbouring exotic species stands. Based on these results silvicultural management recommendations were elaborated.

**Keywords:** Ghana, regeneration, seed dispersal, tree plantations