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Ecosystem Approach for Landscape Rehabilitation — Review and Perspectives of the Rainforestation Farming Technology in the Philippines

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Abstract

The Convention on Biological Diversity adopted the ecosystem approach for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable fashion.

An innovative ecosystem approach, combining the necessities of rural development, biodiversity conservation and rehabilitation and a sound resource management was developed on the island of Leyte in the Philippines. This approach, under the acronym of ‘Rainforestation Farming’ is based on the assumption that a farming system in the humid tropics is increasingly more sustainable the closer it is in its species composition to the original local rainforest.

This recommended subsistence farming technology includes indigenous forest and fruit trees, as well as shade-demanding crop plants like the fibre-banana (*Musa textilis* Nee).

First year sun-demanding pioneer trees are planted at close distances of 2×2 m to reach a closed canopy for shading out grasses, like *Imperata cylindrica*. In the second year hard wood-timber trees and fruit trees are planted in the shade of the pioneers. Seeds and seedlings come from mother trees in the remaining natural forests. Identification, protection and collection of the seeds and seedlings are part of the village-based community activities. Economically this technology is the best and most sustainable option, compared to systems like *Abaca* + coconuts or *Abaca* + *Acacia* sp. farms, a subsistence farmer on Leyte can adopt.

After already 4 years a forest with about 20–25 different rainforest and fruit tree species is usually established in the former *Imperata cylindrica* grassland.

The reforested close canopy subsistence farming area is also a newly created habitat even for such endangered species like the insectivorous nocturnal ape *Tarsius syrichta*, the herbivorous flying lemur, *Gynocephalus volans*, as well as numerous pollinators like bats, amphibians and insects.

Keywords: Biodiversity conservation, Leyte, Philippines, rainforestation, subsistence improvement