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## Better Use of Small Timber and Wood Residues for Sustainable Rural Development

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### Abstract

In many tropical regions there is an urgent need for afforestation for environmental reasons. Denuded mountains cause floods and droughts, bare soils in dry plains lead to desertification and sand storms. Just to know about these problems is often not sufficient to motivate people to plant trees. Basic preconditions for investments in wood production are capital and the perspective of a satisfying return of the investment. Therefore, if you want to promote afforestations it is necessary to find possibilities for an early income from the stocked area. A well-known example is the cultivation of annual crops during the first years of tree growth. But when the canopy is closed only fruit trees or timber from thinning can create some cash.

Thinning of young stands only provide small timber which traditionally is being used for poles and fuelwood. In this presentation it will be analysed which possibilities there are to make more money from tiny trunks. Due to the lack of investment capital and the remoteness of many areas to become afforested, paper mills and big plants for wood composites are not being considered here.

As an alternative the following technologies with a potential for rural tropical areas are being presented:

- Small diameter round wood for construction: Newly developed connection technologies provide innovative applications for roundwood for 3 to 20 cm diameter.
- Composite beams: The production of engineered wood is increasingly used to make money from small and low-value timber.
- Cement bonded boards: Boards made from wood wool and cement are extremely durable, easily workable and resistant to water, rot, fire and termites. Plants for prefabricated houses based on such boards were built in several tropical countries.
- Fungi production from wood residues: A traditional form of non-timber forest products needs further investigation.

**Keywords:** Afforestations, cement bonded boards, composite beams, edible fungi, round wood, small timber, thinning