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ZEF - Ecology and Development Series No. 9, 2002

The Role of Biological Nitrogen Fixation in Secondary and Primary Forests of Central Amazonia

The study shows biological nitrogen fixation (BNF) by legume-rhizobia symbiosis to be high at all stages of secondary forest succession following slash-and-burn land use in central Amazonia. In contrast, BNF is low or absent in the primary forests, possibly because of physiological limitations of BNF in the dominating tree giants. The ^{15}N natural abundance method fails as a quantitative method for estimating BNF in these forests. Lianas play a so far unrecognized key role for BNF especially in early succession. Potentially N_2 -fixing legume vegetation is aggregated in clusters and BNF appears to be concentrated in hotspots within the sites.