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## Conflict of Use in Tropical Forests: The Impacts of Logging on Non-timber Forest Product Availability

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### Abstract

Logging is a major economic activity in much of the moist tropics and increasing areas are being allocated to timber concessions. These forests, and the resources that they harbour, are also utilised by rural communities, including many indigenous forest peoples. The potential for integrating timber and non-timber forest product extraction has been discussed in the context of diversified forest management. However, where tropical forests are exploited both commercially for timber and by forest-dependent communities conflicts between these two uses may have significant implications for forest-dependant livelihoods. We draw on three case studies in Brazil, Cameroon and Indonesia to consider the livelihood consequences of commercial logging. Conflict of use, competition for resources, the facilitation of unsustainable NTFP harvesting and indirect impacts such as altered forest structure; all affect the availability of non-timber forest resources. Work in Brazil over a ten-year period of successive logging events revealed marked changes in consumption of valuable NTFPs, a consequence of both logging itself and associated fire. In Cameroon communities reported declines in the majority of exploited NTFPs, with significant income implications. In Indonesia the value of logged forest to local communities was found to be significantly reduced in comparison to primary forest. Despite significant impacts on livelihoods including income and health, we found evidence in each case of the potential for making timber extraction more compatible with subsistence use of NTFPs. These findings have significant implications for current policy aimed at reconciling timber and non-timber uses of tropical forests and we highlight specific opportunities for achieving greater compatibility.

**Keywords:** Brazil, Cameroon, diversified forest management, Indonesia, livelihood, multiple-use, NTFP, reduced impact logging, sustainable forest management, timber