Geophysical Research Abstracts
Vol. 14, EGU2012-12238, 2012
EGU General Assembly 2012
© Author(s) 2012

The impact of logging on biodiversity and carbon sequestration in tropical forests

R. Cazzolla Gatti
Italy (robertocazzolla@unitus.it)

Tropical deforestation is one of the most relevant environmental issues at planetary scale. Forest clearcutting has dramatic effect on local biodiversity, on the terrestrial carbon sink and atmospheric GHGs balance. In terms of protection of tropical forests selective logging is, instead, often regarded as a minor or even positive management practice for the ecosystem and it is supported by international certifications. However, few studies are available on changes in the structure, biodiversity and ecosystem services due to the selective logging of African forests. This paper presents the results of a survey on tropical forests of West and Central Africa, with a comparison of long-term dynamics, structure, biodiversity and ecosystem services (such as the carbon sequestration) of different types of forests, from virgin primary to selectively logged and secondary forest. Our study suggests that there is a persistent effect of selective logging on biodiversity and carbon stock losses in the long term (up to 30 years since logging) and after repeated logging. These effects, in terms of species richness and biomass, are greater than the expected losses from commercial harvesting, implying that selective logging in West and Central Africa is impairing long term (at least until 30 years) ecosystem structure and services. A longer selective logging cycle (>30 years) should be considered by logging companies although there is not yet enough information to consider this practice sustainable.