



## **Land use effects on carbon sequestration potentials in tropical Panama**

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Scientific efforts are increasing to increase our understanding of carbon sequestration and changes of carbon storage potentials under a changing climate. To adapt to anticipated changes in net primary productivity and carbon sequestration a more mechanistic understanding of the key processes is needed. Land use changes, in particular in the tropics, have a significant impact on the global climate due to biophysical and biogeochemical feedbacks.

Afforestations in the tropics are considered as an effective measure for a sustainable development to avoid ongoing degradation, particularly in developing countries. The question is, however, how large the carbon sequestration potential of such a land use change actually is.

Thus, to address this question, the carbon sequestration of an improved afforestation (with native tree species) and an adjacent, traditionally grazed pasture in Sardinilla, Panama is analyzed using the eddy covariance technique to study the response of these ecosystems to environmental changes. The planting of trees started in Sardinilla in 2001, and the average canopy height is now reaching 8 m. In February 2007 we began with first flux measurements, and continuous data exists since June 2007. We will present results from the first wet season of this ongoing research and compare the net ecosystem exchange of this experimental plantation with traditional pasture.