

COBINFO

Congo basin integrated monitoring for forest carbon mitigation and biodiversity

DURATION OF THE PROJECT
01/12/2010 – 01/09/2015

BUDGET
909.796 €

KEYWORDS
Congo basin, Carbon, biodiversity, REDD+, remote sensing

CONTEXT

This project fits in the context of the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries program. UN-REDD+ will create a financial value for sustainable forest management actions that enhance carbon storage in forests, but the effect of UN-REDD+ on biodiversity remains elusive.

The forests of D.R. Congo are chosen as a study area as: (1) D.R. Congo is one of nine pilot UN-REDD+ countries; (2) there is a lack of information on current and future C stocks and fluxes in forests of D.R. Congo, leading to uncertainties in the global C budget; (3) Central African tropical dense rainforest are an unexplored and endangered biodiversity hotspot; (4) potential vulnerability of non-protected areas in D.R. Congo to forest degradation, and (5) the success of UN-REDD+ in D.R. Congo will strongly depend on its impact on biodiversity.

PROJECT DESCRIPTION

Objectives

The general objective is to get baseline reference data on the C balance and biodiversity in pristine and intervened dense tropical forests of the Congo Basin and to increase our understanding in the relationship between both variables as a function of forest management and degradation.

Methodology

We will measure aboveground and belowground soil carbon stocks and biodiversity indices along a forest productivity gradient (ca. 15 sites) in the Yangambi Man and Biosphere reserve (Y-MaB) and investigate direct effect relationships between forest carbon stocks and biodiversity along this productivity gradient (PG-CB). The different sites, located along a forest productivity gradient, will be tentatively selected using remote sensing techniques and validated on the ground. Carbon stocks will be investigated in the forest core and edges zones. We will bring forward a set of biodiversity indices related to lichens, fungi, higher vascular plants, ants and termites, spiders, flies, bees, arthropods and rodents. The work will be brought into practice using a set of six complementary work packages (study site selection, baseline carbon inventory, biodiversity monitoring, integration of carbon and biodiversity monitoring, and conclusions and suggestions for sustainable policies).

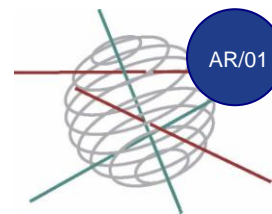
INTERACTION BETWEEN THE DIFFERENT PARTNERS

All partners involved share a common interest in African tropical forest ecology and nature conservation. The included partners have complementary research areas covering the broad range of research aspects in this project. The experimental set-up of PG-CB is of common use for all partners and thus will be implemented in the measurement campaigns of all partners. This aspect will facilitate the statistical analysis and result interpretation.



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EXPECTED RESULTS AND/OR PRODUCTS

We will bring forward a series of recommendations for policy makers for improved implementation and adjustment of international programmes such as UN-REDD+, UNFCCC, WWF, ICCN (Intercultural Conflict, Communication and Negotiation), DGOS (Belgian Development Cooperation), IPCC (Intergovernmental Panel on Climate Change), etc.

We will report results and deliver data to international organizations such as Smithsonian Institution Global Earth Observations, Observatory for the Forests of Central Africa (OFAC), the Barcode of Life, Carbon-biodiversity Atlas, etc

We will communicate via popular media to a broad public (YouTube, Twitter, and Web-Blogs to allow scientists, politicians, NGO's and the broader public to get informed about first hand exciting information from field campaigns.)

We will present results at international symposia and via publications. This work will allow publication in top scientific journals such as "Nature Geoscience" and "Nature Climate Change", "BMC Biology" and "Conservation Biology" and eye catching presentations at international conferences.

PARTNERS

Activities

A "site selection core team" will organize the site selection for the pilot sites PG-CB. The team is formed by H. Beeckman (P3, Royal Museum for Central Africa), P. Defourny (P5, Université Catholique de Louvain), P. Boeckx/D. Huygens (Coordination, C, Ghent University), H. Verbeeck/K. Steppe (P2, Ghent University), J. Bogaert (P4, Université de Liège) and S. Dessein (P6, National Botanic Garden of Belgium).

A "carbon core team" made up by C, P2, P3 and P4 will be responsible for the coordination of all activities related to carbon monitoring in the PG-CB sites.

A "biodiversity core team" made up by S. Dessein, E. Verheyen (P7, Royal Belgian Institute for Natural Sciences), J. Bogaert and H. Leirs (P8, Antwerp University) will be responsible for all biodiversity monitoring activities.

Follow-up Committee

For the complete and most up-to-date composition of the Follow-up Committee, please consult our Federal Research Actions Database (FEDRA) by visiting <http://www.belspo.be/fedra>

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