International Scientific Conference

ABSTRACT BOOK

7-10 July 2015 • Paris, France
This Abstract book is based on a compilation of all abstracts selected for oral and poster presentations, as of 15 May 2015.

Due to the inability of some authors to attend, some of those works will therefore not be presented during the conference.
Welcome to the Conference

Welcome to Paris, welcome to ‘Our Common Future under Climate Change’!

On behalf of the High Level Board, the Organizing Committee and the Scientific Committee, it is our pleasure to welcome you to Paris to the largest forum for the scientific community to come together ahead of COP21, hosted by France in December 2015 (“Paris Climat 2015”).

Building on the results of the IPCC 5th Assessment Report (AR5), this four-day conference will address key issues concerning climate change in the broader context of global change. It will offer an opportunity to discuss solutions for both mitigation and adaptation issues. The Conference also aims to contribute to a science–society dialogue, notably thanks to specific sessions with stakeholders during the event and through nearly 80 accredited side events taking place all around the world from June 1st to July 15th.

When putting together this event over the past months, we were greatly encouraged by the huge interest from the global scientific community, with more than 400 parallel sessions and 2200 abstracts submitted, eventually leading to the organization of 140 parallel sessions.

Strong support was also received from many public French, European and international institutions and organizations, allowing us to invite many keynote speakers and fund the participation of more than 120 young researchers from developing countries. Let us warmly thank all those who made this possible.

The International Scientific Committee deserves warm thanks for designing plenary and large parallel sessions as well as supervising the call for contributions and the call for sessions, as well as the merging process of more than 400 parallel sessions into 140 parallel sessions. The Organizing Committee did its best to ensure that the overall organization for the conference was relevant to the objectives and scope. The High Level Board raised the funds, engaged the scientific community to contribute and accredited side events. The Conference Secretariat worked hard to make this event happening. The Communication Advisory Board was instrumental in launching and framing our communication activities on different media. We are very grateful to all.

We very much hope that you will enjoy your stay in Paris and benefit from exciting scientific interactions, contributing to the future scientific agenda. We also hope that the conference will facilitate, encourage and develop connections between scientists and stakeholders, allowing to draw new avenues in the research agenda engaging the scientific community to elaborate, assess and monitor solutions to tackle climate change together with other major global challenges, including sustainable development goals.

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Could IFM REDD+ projects incentivize forest concessionaires to reduce greenhouse gases emissions in Central Africa? A lesson from the FORAFAMA project

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Improved Forest Management (IFM) is an activity eligible to the mechanism of Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+). In this context, IFM refers to activities that increase carbon stock on managed forest lands by changing forest management practices. As nearly 20 millions of hectares are now managed in the Congo Basin forests, it is a strategy of prime importance in climate policies of Central African states. However, the carbon benefit is generally based on a decrease of felling intensity that means severe income shortfalls for the logger. The extent to which carbon storage can compensate losses of timber income is a decisive factor in the feasibility of REDD+ projects. Given the few number of scientific studies on this subject, and the even fewer number of pilot projects that have been implemented, this issue is still highly in debate.

To assess the potentialities for emissions reductions of IFM REDD+ projects and to evaluate their financial feasibility, we explored a broad range of scenarios for reducing logging intensity in a typical export-oriented forest concession in Central Africa. For each scenario and for several carbon accounting approaches, we calculated timber income shortfalls and carbon benefit to estimate internal rates of return and break-even prices of carbon credits. As part of the project of “Support for the sustainable management in the Congo Basin and the Brazilian Amazon Basin” (FORAFAMA), a partnership with several forest concessionaires has allowed us to incorporate forest, industrial and economic factors. Parameters uncertainties are explicitly taken into account through a Monte-Carlo method.

We predicted that current voluntary markets conditions do not permit the implementation of IFM REDD+ projects in Central African concessions. Notable exceptions to this statement are Logged to Protected Forest (LTPF) projects, that correspond to an extreme case of a complete cessation of logging activities in this concessionary context with no building of broad networks results in substantial savings. The feasibility of other IFM REDD+ projects is particularly constrained by the current approach to addressing the risk of non-permanence. As an example, under Verified Carbon Standard (VCS), the maximum number of Voluntary Certified Units (VCU) available to projects including harvesting, cannot exceed the long-term average carbon benefit. In the Clean Development Mechanism (CDM), an other approach to deal with non-permanency had been proposed with temporary Certified Emission Reductions (CER). A CER expires at the end of the commitment period reducing its value. Such an approach, that can allow to value the storage of carbon even on short time periods, is much more flexible and adapted to permanent timber production tropical forests. However, even under this method, REDD+ projects prove to be unattractive for Central African timber companies as their feasibility remains conditioned to a major reduction of logging intensity. Otherwise, projects are severely penalized by transaction costs and low carbon differentials.

Our work suggests that current methodologies of voluntary standards are not well appropriate to include IFM within REDD+. Instead of incentivizing to concentrate timber production and carbon sequestration, IFM projects rather encourages forest concessionaires to value either carbon or timber exclusively, thus facing the same limitations and additionality issues. To promote the deployment of a truly climate-smart forest management, the incentive system should focus more on practice changes than only on the result expressed in permanently avoided emissions.

An Economic Impact Assessment of Community-Based Conservation Associations (CBCAs) in the Nzoia River Basin, Kenya: Taking stock of ecosystem services and welfare trends under Climate Change

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Community-based conservation associations seek to address the trade-offs in conservation and development objectives through participatory approaches to sustainable ecosystem management. Some empirical research has been carried out in the past two decades to evaluate the impact of community-based conservation associations. The findings on outcomes are mixed and still a subject of intense debate in the forest economics literature in developing countries. The issue of nonlinearity comes up with the outcomes of these assessments and management institutions hence further research and methods needed to understand these complex conservation problems in developing countries context, especially in Africa which has few impact studies globally. Past assessments of associations as conservation and welfare approaches to sustainable ecosystem services (Pes) gives the advantage of repackaging and non-membership on forest ecosystem services and welfare of community-based conservation association membership in sampled research area. Our economic impact study seeks to address some of these limitations raised above through the integration of ecosystem services and household livelihood outcomes. Field interviews are undertaken with key stakeholders in the Nzoia River Basin, Kenya. The study anticipates to quantify the economic impact assessment based on advice from Kenya Forest Services and Kenyan Wildlife Services. These associations are (1) Kipsaina Crane and Wetlands Forest reserve Conservation arm(Kakamega Community Forest Association (KFCa), (2) Chauch Kimothon CFa, Malava CFa, Muilesh CFa ) (3)Kakamega Forest Reserve Conservation Arm(Kakamega Community Wildlife Association) and (4) Community-based conservation associations in sampled research area. The study anticipates to (1)Quantify and explain drivers of CBCAs participation that fully capture the significant theoretical expectation (2) Quantify the impact of community-based conservation association membership and non-membership on forest ecosystem services supply and household welfare based on sets of selected criteria from the household survey, (3)Assess the three (3) CBCAs and evaluate which one is doing the best in the supply of ecosystem services in the Nzoia River Basin and...