



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.



OUR UNDER COMMON CLIMATE FUTURE CHANGE



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 happen. 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.

Christopher Field, Chair, CFCC15 Scientific Committee

Jean Jouzel, Chair, CFCC15 High Level Board

Hervé Le Treut, Chair, CFCC15 Organizational Committee

Committees

Scientific committee

- Chris FIELD (*IPCC, USA*) - Chair
- Philippe CIAIS (*LSCE, France*)
- Wolfgang CRAMER (*IMBE, France*)
- Purnamita DASGUPTA (*IEG, India*)
- Ruth DEFRIES (*Colombia University, USA*)
- Navroz DUBASH (*CPR, India*)
- Ottmar EDENHOFER (*PIK, Germany / IPCC, USA*)
- Michael GRUBB (*University College London, UK*)
- Jean-Charles HOURCADE (*CNRS-France*)
- Sheila JASANOFF (*Harvard Kennedy School of Government, USA*)
- Kejun JIANG (*Nanyang Technological University, China*)
- Vladimir KATTSO (*MGO, Russia*)
- Hervé LE TREUT, France (*CNRS-UPMC/France*)
- Emilio LEBRE LA ROVERE (*National University, Brazil*)
- Valérie MASSON-DELMOTTE (*LSCE/IPSL, France*)
- Cheik MBOW (*ICRAF, Kenya*)
- Isabelle NIANG-DIOP (*IRD, Senegal*)
- Carlos NOBRE (*SEPED/MCTI, Brazil*)
- Karen O'BRIEN (*University of Oslo, Norway*)
- Joe JACQUELINE PEREIRA (*University Kebangsaan, Malaysia*)
- Shilong PIAO (*Peking University, China*)
- Hans OTTO PÖRTNER (*Alfred Wegener Institute, Germany*)
- Monika RHEIN (*University of Bremen, Germany*)
- Johan ROCKSTRÖM (*Stockholm University, Sweden*)
- Hans Joachim SCHELLNHUBER (*PIK, Germany*)
- Robert SCHOLES (*University of Witwatersrand, South Africa*)
- Pete SMITH (*University of Aberdeen, UK*)
- Youba SOKONA (*The South Centre, Switzerland*)
- Jean-François SOUSSANA (*INRA, France*)
- Mark STAFFORD-SMITH (*Future Earth, Australia*)
- Thomas STOCKER (*University of Bern, Switzerland*)
- Laurence TUBIANA (*IDDI, France*)
- Diana ÜRGE-VORSATZ (*Central European University, Hungary*)
- Penny URQUHART (*Independent analyst, South Africa*)
- Carolina VERA (*University of Buenos Aires, Argentina*)
- Alistair WOODWARD (*University of Auckland, New Zealand*)

Organizing committee

Chair:

- Hervé Le Treut (*CNRS-UPMC*)

Members:

- Wolfgang Cramer (*CNRS/Future Earth*)
- Pascale Delecluse (*CNRS*)
- Robert Kandel (*CNRS/Ecole polytechnique*)
- Frank Lecocq (*AgroParis Tech/CIRED*)
- Lucilla Spini (*ICSU*)
- Jean-François Soussana (*INRA*)
- Marie-Ange Theobald (*UNESCO*)
- Stéphanie Thiébault (*CNRS*)
- Sébastien Treyer (*IDDRI*)

Conference Secretariat:

- Claire Weill, Head (*INRA*)
- Géraldine Chouteau (*Météo-France*)
- Aglaé Jézéquel (*INRA*)
- Gaëlle Jotham (*INRA*)
- Ingrid Le Ru (*IDDRI*)
- Benoît Martimort-Asso (*IRD*)
- Nadia Mersali (*IDDRI*)
- Catherine Michaut (*CNRS-UVSQ/IPSL*)
- Aline Nehmé (*INRA*)
- Jeremy Zuber (*INRA*)
- Aimie Eliot (*INRA*)
- Eve Le Dem (*INRA*)

Communication Advisory Board:

- Richard Black, *Energy and Climate Intelligence Unit*
- Hunter Cutting, *Climate Nexus*
- Owen Gaffney, *Future Earth/Stockholm Resilience Centre*
- Kalee Kreider, *United Nations Foundation*
- Michelle Kovacevic, *Communications consultant*
- Jonathan Lynn, *IPCC*
- Kim Nicholas, *Lund University*
- Tim Nuthall, *European Climate Foundation*
- Nicholas Nuttall, *UNFCCC*
- Roz Pidcock, *Carbon Brief*
- Charlotte Smith, *Communications INC*
- Sue Williams, *UNESCO*
- Denise Young, *ICSU*
- Jeremy Zuber (*INRA*)

project (ICDP) approach with payments for ecosystem services (PES). This bears the advantage of repackaging the on-going efforts, reducing uncertainties and risks of maladaptation and offering some responses to the fragmentation of finance opportunities. In sum, the hybrid approaches present potentials for synergies between adaptation and mitigation.

However, transformational changes are needed to increase the synergy between adaptation and mitigation in the current climate portfolio. In particular, there is a need for tools, information and knowledge to support decision makers to harmonizing climate policies.

3331–POSTER PRESENTATIONS

P-3331-01

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

F. Claeys (1) ; V. Rossi (2) ; D. Bastin (3) ; R. Eba'a-Aty (4) ; S. Gourlet-Fleury (1) ; G. Lescuyer (5) ; N. Picard (2) ; Dj. Sonwa (4)

(1) Centre for International Cooperation in Agricultural Research for Development (CIRAD), Tropical Forest Goods and Ecosystem Services (BSEF), Montpellier, France; (2) Centre for International Cooperation in Agricultural Research for Development (CIRAD), Tropical forest goods and ecosystem services (bsef), Yaounde, Cameroon; (3) Alpicam, Douala, Cameroon; (4) Centre for International Forestry Research (CIFOR), Yaounde, Cameroon; (5) Centre for International Cooperation in Agricultural Research for Development (CIRAD), Tropical forest goods and ecosystem services (bsef), Bogor, Indonesia

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 could 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 of forests in the Congo Basin and the Brazilian AmazonBasin» (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. In this case, the non-building of road 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 (tCER). A tCER expires at the end of the commitment period following its issue. 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 accounting method, IFM 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 conciliate timber production and carbon sequestration, IFM REDD+ projects rather encourages forest concessionaires to value either carbon or timber exclusively, hence acceptability 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.

P-3331-02

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

C. Kombat Lambini (1)

(1) Bayreuth Center for Ecology and Environmental Research (BayCEER), Bayreuth Graduate School of Mathematical and Natural Sciences (BayNAT), Bayreuth University, Germany

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 in conservation are faced with numerous limitations such as complexities in implementing communities-number of members, social capital, institutional context and programme attributes. Most of these assessments have several problems: methodological limitations, baseline data access, and selection of indicators of outcomes for evaluation, leakages and timescale measurements. Despite the growing literature in community forestry, there are still lack of empirical local studies that can substantiate and quantify the impact on forest ecosystem services and welfare of community-based conservation association members in the Nzoia Basin in Western Kenya. 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 two forest ecological conservancies out of ten in Kenya (North Rift Conservancy-Trans-Nzoia Zone and Western Conservancy-Kakamega Zone). Sample of three different community-based conservation associations in different communities are considered for the economic impact assessment based on advice from Kenyan Forest Services and Kenyan Wildlife Services. These associations are (1) Kipsaina Crane and Wetlands Conservation Group (Saiwa Swamp National Park-North Rift), (2) Community Forest Associations(Kiptogot CFA, Kimothion CFA, Malava CFA, Muileshi CFA) (3)Kakamega Forest Reserve Conservation Arm(Kakamega Community Wildlife Association) and (4) Non-Members of 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