



AFORPOLIS

African Forest Policies & Politics

The first IUFRO social sciences conference on
African Forest Policies and Politics (AFORPOLIS conference 2018)

Book of abstracts



(Photo: AFORPOLIS)

Date: 24-27th September 2018

Venue: Yaoundé – Cameroon

Overview	I
Organising committee	II
Opening speaker	III
Keynotes	III
Session 1: Political economy of deforestation and forest plantations	1
<i>The endogenous drivers of inter-organisational exchange of information in South African tree plantation policy</i>	1
<i>Impact of sustainable forest management on deforestation in the Congo Basin</i>	2
<i>The new face of private sector investment in Africa's natural resource-based economies: Implications for natural resource governance</i>	3
<i>Certification of tropical forests: private instruments of public interest?</i>	4
Session 2: Forestlands and agricultural commodities	5
<i>The land squeeze in Tanzania: Where commodified landscapes displace agricultural extensification</i>	5
<i>Governing agriculture induced deforestation in Africa</i>	6
<i>Improved rice production system for biodiversity conservation. Case of the Mahavavy-Kinkony Wetlands Complex Protected Area</i>	7
<i>Central Cameroon Region between agricultural activities, urbanization and forest cover degradation</i>	8
Session 3: Biodiversity and market-based instruments	9
<i>Challenges and opportunities of market access in enhancing the farmers' livelihood through sustainable agriculture in Biosphere Reserve landscape</i>	9
<i>Wood processing and trade on wood products in Africa</i>	10
<i>Livelihoods and non-timber forest products: Influence of access and ownership rights, access to market among Bantu and Bagyeli at the periphery of Campo Ma'an National Park</i>	11
<i>Impact of formal institutions on market-driven harvesting of non-timber forest products from communal forests in Zimbabwe</i>	12
Session 4: Nature conservation policies	13
<i>Does Tanzanian Participatory Forest Management Policy Achieve Its Governance Objectives?</i>	13
<i>The Context, Challenges and Prospects of Implementing REDD+ in Africa</i>	14
<i>Engendering collaborative forest management in selected protected areas in Cameroon: Reality versus Ideals</i>	15
Session 5: Forestland and political instability	16
<i>Boko Haram Insurgency and the Necessity for Trans-territorial Forests' Governance on the Lower Lake Chad Basin</i>	16
<i>Farmer's responses to POLITICALcrisis: A case study of four villages in rural Zimbabwe</i>	17
<i>Why are people crowding out of forest management in Burkina Faso?</i>	18

Session 6: Forest concessions	19
<i>Analysis of a new approach to formalise the sector of the small scale chainsaw milling for export in the eastern part of the Democratic Republic of Congo (Nord-Kivu and Ituri provinces)</i>	19
<i>Assessment on Chinese Forest Management in Mozambique</i>	20
<i>Suitable timber tracking system for low income forest corporations in Central Africa</i>	21
Session 7: Transnational and decentralised forest governance	22
<i>Change and continuity in decentralised forest governance in Madagascar: a case study of Ambohilero forest</i>	22
<i>Cross-border woodfuel trade uncovered: mapping of regional trade flows between and from Central African countries and implications for woodfuel governance</i>	23
<i>Globalizing Governance of Congo Basin's Forests: A Socio-anthropological Approach of the VPA-FLEGT Process in Cameroon</i>	24
Session 8: Development, social equity and sustainability	25
<i>How can local stakeholders make the room for negotiation?: Addressing the paradox of 'participation' and 'community' in forest management policies in southeastern Cameroon</i>	25
<i>Modeling of a local governance of forest areas by the valorization of the Agnarandray concept or the heritage affiliation of the Zafimaniry of Amoron'i Mania, Central Highlands of Madagascar</i>	26
<i>Determinants of sustainability of enclosure establishment and management practices in Tigray Region, Ethiopia</i>	27
<i>Where are the women? A critical review of the current literature on gender and woodfuel value chains in Sub-Saharan Africa</i>	28
Session 9: Community forestry and local development	29
<i>Extent and composition of private tree farming in Southern Tanzania</i>	29
<i>Traceability of wood energy in dry savannah zone: case of Biskavaï community forest, Far North Cameroon region</i>	30
<i>Toward an innovative community forest governance strategy: A case study of three Community Forests in Centre Cameroon</i>	31
<i>Are community forests a viable model for the Democratic Republic of Congo?</i>	32
Session 10: Forest and climate change	33
<i>Using wood to mitigate Climate Change in Africa: Lessons learned from Quebec Policy</i>	33
<i>Impact of illegal logging on climate change: Case of timber producing countries in the Congo basin and Asia</i>	34
<i>Have you Ever seen Trees bringing Rain Here? The Mau Complex and the Political Economy of deforestation in Kenya</i>	35
Session 11: Forestland use and informality	36
<i>Intra-industrial Development Priority Identification in Relation to China-Africa Forestry Capacity Cooperation</i>	36
<i>Deforestation and forest degradation within and around Douala-Edea Fauna Reserve: Status, Drivers, Impacts and Responses</i>	37

<i>'Rosewood' and illegal timber trade: informality, global capital and rural development in Zambia</i>	38
Session 12: Territorial development	39
<i>Identification of territorial actors for development through ecotourism in mountain protected areas in Tunisia: Case of Ichkeul and Cape Negro-Jbel Chitana</i>	39
<i>Determinants of the scale of forest governance in community forests in East Cameroon</i>	40
<i>Challenges of coexistence between conservation and development of industrial plantations in the divisions of Nkam and Dja-et-Lobo in Cameroon</i>	41
Session 13: Livelihoods and non-timber forest products	42
<i>Households livelihoods and deforestation in the Tridom Transboundary Conservation: A spatial analysis</i>	42
<i>Traditional institutions and management of forest resources in the Democratic Republic of Congo: case study of Bosukulu 1, riparian village of the Biosphere reserve of Yangambi</i>	43
<i>Local forest governance and non-timber forest products in developing contexts: a case study of Sahatsiho-Ambohimanjaka and Vohidahy, Ambositra in Madagascar</i>	44
<i>Divergent policy and practice; Governing NTFPs in Cameroon</i>	45
Session 14: Institutions and forest regulation	46
<i>Examining the Jurisdictional Landscape Approach and Its Implications for African Palm Oil Industry</i>	46
<i>Socio-economic Benefits and challenges to Certification in Cameroon: An Assessment of Eighteen local communities in Manyu division, South West Region of Cameroon</i>	47
<i>Official recognition of FSC National Standard as FLEGT-compliant in Cameroon: what impact on the market and on forest management?</i>	48
Session 15: International forest governance initiatives	49
<i>An overview of how the international REDD+ policy is transferring in Central African States</i>	49
<i>Using Multi Criteria Evaluation in forest resource management: an elaboration of a</i>	50
<i>decision map of the transboundary conservation area between Cameroon and Nigeria</i>	50
<i>About remunerations and rewards for avoided or reduced deforestation: REDD+ story telling in Central Africa</i>	51
Posters	52
<i>The Sacred Woods as World Public Goods: analysis of the Bamiléké context</i>	52
<i>In search of forest governance index in Central Africa. Improving forest governance in the light of the fragility and resilience of COMIFAC countries (2015-2025)</i>	53
<i>Comparative effects of trees outside forests on mycorrhizal fungi diversity and soil fertility in the Yangambi region in the Democratic Republic of the Congo</i>	54
<i>The dynamics of fuelwood consumption and supply by micro-enterprises in the Yangambi Biosphere Reserve, DRC</i>	55
<i>Interactions between people and chimpanzee (<i>Pan troglodytes ellioti</i> Matschie 1914) in the Mbam and Djerem National Park, Cameroon</i>	56
<i>Communal Forestry faced with diffuse and diffracted local demand: the experience of the Ngog-Mapubi / Dibang Intercouncil Forest Initiative in Cameroon</i>	57

<i>Evolution of the Legal Framework and Institutionalization of the Sustainable Forest Management in Central Africa: what impacts on Improving Rural Communities' Rights in Cameroon</i>	<i>58</i>
<i>Resilience to Environmental Challenges and the National Disaster Insurance Programme in Kenya</i>	<i>59</i>
<i>Tragedies and hopes in the governance of protected areas in Côte d'Ivoire</i>	<i>60</i>
<i>The transformation of community forest to community forest enterprises in Cameroon Process, opportunities and challenges</i>	<i>61</i>
<i>Training to improve forest governance: programs for quality education of forestry actors</i>	<i>62</i>
Side-events	63
<i>Community Forests: Can Agroforestry bring profitability, sustainability and social equity? (ICRAF)</i>	<i>63</i>
<i>OSFACO project -- Earth observation for monitoring forests in Central and Western Africa Experiences and achievements of 5 case studies in Cameroon (IRD)</i>	<i>65</i>
<i>Participatory development of a National Forest Policy and Programme: The case of Mozambique (Ministry of Land Environment and Rural Development, Mozambique)</i>	<i>66</i>
<i>Impacts of certification on forest management - how do we know what we know? (FSC).....</i>	<i>67</i>

Overview

The first IUFRO social sciences conference on

African Forest Policies and Politics (AFORPOLIS)

The conference AFORPOLIS 1 is organised in cooperation with the University of Göttingen in Germany, University of Dschang in Cameroon and the IUFRO (International Union of Forest Research Organisations). The conference benefits from a substantial support of the Centre for International Forestry Research (CIFOR) and the Centre for International Development and Training (CIDT/ University of Wolverhampton). AFORPOLIS conference series will seek to advance cutting-edge knowledge on the emergence and evolution of African forest governance.

The dynamics of African forests are paradoxical. When the rate of forest degradation due to wood-fuel demand and slash-and-burn small farming rises, the level of deforestation falls below that of South Asia and Latin America. In other words, the utilisation of African forestland resources occurs faster in regions covered by dry and accessible forests while the majority of the rainforests in the Congo basin remains broadly intact. Up to now, African forests from the North Africa Mediterranean region to the southern, eastern, western and central African regions face growing pressure due to forestland conversion, biodiversity loss, livelihood issues, wildfires, above- and underground resources exploitation.

Talks: 51 oral presentations are scheduled in 15 sessions closely linked to the main themes of the conference. Each talk is scheduled for 25 minutes in total. This includes 15 minutes for presentation and 10 minutes for discussion. During presentation, speakers will be signalled two times about the remaining time, at the 10th, and the last minute. Session chairs will make sure that the time frame of each talk is strictly respected.

Posters: 11 posters will be presented in one session. In this session, each poster presentation will take 5 minutes followed by open discussions with the audience.

Side events: Four side-events are scheduled on the following topics:

Topic 1: Community Forests: Can Agroforestry bring profitability, sustainability and social equity? (World Agroforestry Centre, ICRAF).

Topic 2: OSFACO project- Earth observation for monitoring forests in Central and Western Africa (French National Research Institute for Sustainable Development, IRD)

Topic 3: Participatory development of a national forest policy and programme: The case of Mozambique (Ministry of Land Environment and Rural Development, Mozambique).

Topic 4: Impacts of certification on forest management - how do we know what we know? (Forest Stewardship Council, FSC).

Organising committee

Main organiser:

Symphorien Ongolo, University of Göttingen - Germany

Co-organisers:

Lukas Giessen, European Forest Institute, Bonn - Germany

Martin Tchamba, University of Dschang - Cameroon

Richard Eba'a Atyi, CIFOR - Cameroon

Aurelian Mbazibain, CIDT/ University of Wolverhampton - UK

Dany Pokem, Congo Basin Forest Partnership (CBFP) Freiburg - Germany

Organising committee members and secretariat:

Ameni Hasnaoui, University of Göttingen - Germany

Minette Nago, University of Göttingen - Germany

Yue Zhao, University of Göttingen - Germany

Academic partners:



University of
Dschang

Research partners and sponsors:

Unterstützt von / Supported by



Alexander von Humboldt
Stiftung / Foundation



Opening speaker



Roger Tsafack Nanfosso, Rector of the University of Dchang, Cameroon

Keynotes



Keynote 1: **Max Krott**, Professor of Forest and Nature Conservation Policy, University of Göttingen, Germany

Talk: “The role of science for developing policy in Africa”



Keynote 2: **Phil Rene Oyono**, Senior Researcher with Rights Resources Initiative (RRI), Cameroon

Talk: “Forest Governance Multi-Scaled: The Politics of Choice in African Contexts”



Keynote 3: **Richard Eba'a Atyi**, Senior researcher, CIFOR – Cameroon

Talk: “Governing forest concessions in the Congo basin”



Keynote 4: **Maria Brockhaus**, Professor of International Forest Policy, University of Helsinki, Finland

Talk: “Forest conversion, plantation or conservation? Benefits, equity and the politics of deforestation”

Session 1: Political economy of deforestation and forest plantations

The endogenous drivers of inter-organisational exchange of information in South African tree plantation policy

Authors: Malkamäki, Arttu; Ylä-Anttila, Tuomas; Korhonen-Kurki, Kaisa; Toppinen, Anne

Abstract: With a worldwide increasing demand for wood fibre, the global extent of tree plantations is expected to double by 2050. While reconciliation between long-term societal costs and benefits of afforestation is a subject of constant and divisive international debate, little we know about the underlying policy processes at national or provincial levels. Most policy processes operate in self-organising networks spanning governmental and nongovernmental actors; hence, information exchange can be beneficial for co-ordinating activities, reducing uncertainties, exerting power, and building coalitions. We deduce causal hypotheses from theoretical predictions of endogenous network formation to examine how institutional, relational and social opportunity structures, perceived influence, and similarity of policy-relevant preferences shape policy actors' choices of with whom to establish contacts and exchange information. Effects of these endogenous drivers on network structure are tested using exponential random graph modelling and data from personal interviews with key organisations actively involved in South African tree plantation policy (N=57). Our findings indicate that policy actors consider transaction costs in their choices of with whom to exchange information. In particular, policyrelevant committees as institutional opportunity structures are harnessed to maximise benefits and minimise costs of information exchange. In the given policy sub-system, interest groups also rely on exchanging information frequently, which could work as a function of co-ordinating activities within coalitions and avoiding defection. However, the tested hypotheses indicate that there are multiple avenues for forming policy networks.

Key words: *Communication; Exponential random graph models; Governance; Planted forests; Socioecological systems; Transaction costs*

Impact of sustainable forest management on deforestation in the Congo Basin

Authors: Isabelle TRITSCH; Gwenolé LE VELLY; Jean-Sylvestre MAKAK; Kenneth HOUNGBEDJI; Patrick MEYFROIDT; Christophe SANNIER; Benoit MERTENS

Abstract: Since the Rio Earth Summit in 1992, many governments, international donors and conservation and development NGOs have promoted sustainable forest management (SFM) for wood production. In the Congo Basin, the new generation of forestry laws have made SFM mandatory in logging concessions. However, few studies have assessed the effectiveness of SFM on reducing deforestation. This study aims to measure the impact of SFM implementation on deforestation in logging concessions of the Congo Basin.

We used national maps of forest cover changes for Cameroon, Congo, Gabon and Central African Republic over the period 2000-2010 produced by different international projects as part of the establishment of national forest monitoring systems. Data on logging concessions, including adoption of SFM plans and certification by the Forest Stewardship Council (FSC), were obtained from OFAC and WRI databases and local collaborators. We compared the 2000-2010 rates of deforestation in concessions that implemented their SFM plan before 2005 (treated group) with those who did not (control group), in order to compare the evolution of treated areas with the counterfactual situation that would have prevailed in the absence of SFM plans. We used matching to control for the effects of variables that may have influenced the adoption of SFM plans or forest cover changes.

Deforestation is very low in these countries, in particular in logging concessions. Yet, our results showed that SFM implementation between 2000 and 2005 significantly reduced the 2000-2010 rates of deforestation. FSC certification, as compared to traditional logging concessions, did not show significant impact on deforestation.

These results must be interpreted in the context of low deforestation in the study area, and considering that while this study only focuses on the impacts in terms of deforestation, SFM and FSC have a broader set of objectives in terms of sustainable social and economic development.

Key words: *logging concessions, sustainable forest management, deforestation, Congo basin, quasi-experimental matching*

The new face of private sector investment in Africa's natural resource-based economies: Implications for natural resource governance

Authors: Schoneveld, G., Chacha, M., Njau, M., Cerutti, P. and Weng, X.

Abstract: In much of Africa, unsustainable commodity production practices and misgovernance - underpinned by a combination of *inter alia* market failures, resource constraints, informality traps, and dysfunctional incentive structures - is one of the underlying causes of persistent deforestation and forest degradation. It has too long contributed to adverse incorporation of rural communities in high value (global) commodity chains. Over the past decade, however, processes of globalization, food regime restructuring and natural resource privatization are driving new types of private sector capital flows to the rural and informal economy. While (theoretically) bringing important new opportunities for modernizing and upgrading rural production systems, enhancing access to markets, and promoting uptake of more environmentally responsible production practices, in practice these purported opportunities rarely play out as intended due to the undesirable effects such capital flows have on local politico-ecological dynamics.

This paper critically examines the changing face of private sector investment in rural economies and their effects on natural resource governance and small-scale producers, with the objective of identifying options for better leveraging private capital flows in support of sustainable and productive commodity production. The paper does this by drawing on the results from primary research conducted on three natural resource-based sectors typically associated with deforestation, namely oil palm and rubber cultivation (in Nigeria), artisanal gold mining (in Tanzania), and timber extraction (in Zambia). Findings reveal the subversive effects of private capital inflows on formal and informal regulatory institutions at various scales as a result of the formation of complex new patronage networks and accumulation structures. Elucidating these effects bring to light the structural institutional challenges African governments need to better account for when attempting to rein in powerful economic processes that compete with and/or deplete valuable natural resources.

Certification of tropical forests: private instruments of public interest?

Author: Alain Karsenty, Cirad

Abstract: Certification has not reduced deforestation in tropical countries. However, improving the management of productive forests would indirectly contribute to preventing deforestation through sustainable forest development of a territory. It generates jobs and tax revenues that play their role in public decision-making processes regarding land use. Impact assessments, which are particularly popular with donors, can hardly grasp this process, which is a matter of political economy.

Various observations, particularly in Central Africa, suggest that companies investing in certification to gain or maintain market share are self-regulating to avoid losing their certificates, and thus comply with laws and regulations, yet in contexts where the rule of law is not established. Since the FLEGT initiatives, relayed by voluntary partnership agreements, the "added value" of the FSC type "good forest management" certification is an issue that can be raised. Can such certifications guarantee greater sustainability than strict compliance with the law? Several cases suggest that the letter of a regulation can be respected but its spirit betrayed, indicating the usefulness of "good forest management" certifications. The rise of legality certifications, which have emerged in the dynamics of FLEGT, nevertheless poses a challenge to FSC-type certifications and must lead to a rethinking of the concept of sustainability of tropical forest management, bearing in mind that long-term processes have to be considered in the context of fragmented scientific knowledge and high economic and climatic uncertainty.

Governments to demonstrate the sound management of "their" forests are now promoting certified areas. Certification has become an institution in the sociological sense of an established social form. If the positive externalities of certification are seen as collective goods and since these labels are increasingly used in public policies, then it would be legitimate to complement market incentives with public incentives and subsidies for the adoption of certification. Three measures can be foreseen: (i) prioritisation in public procurement (ii) a reduction in taxes and forest fees for certified companies, which would be compensated by international transfers in favour of the national budgets of producing countries (iii) a pooling of the costs of certification audits through an allocation of certain revenues from the Forestry Funds. The political economy dimensions associated with these different options and the (sometimes unexpected) stakeholders' strategies around these options will be examined.

Session 2: Forestlands and agricultural commodities

The land squeeze in Tanzania: Where commodified landscapes displace agricultural extensification

Authors: Emily Gallagher; George Schoneveld; Mathew Senga; Masalu Luhula

Abstract: The so-called land grabbing phenomenon has forced global attention on land, forest, and agricultural investment practices across sub-Saharan Africa. The response from governments and would-be investors has been swift to embrace more inclusive agribusiness investment strategies that promote socially-inclusive green growth through the intensification and commercialization of smallholder production. While this material and discursive shift to do ‘business as unusual’ promises to be pro-poor, pro-women, and pro-environment, CIFOR research in Tanzania suggests that the threat of land grabs has been displaced by a land squeeze in commodified landscapes. The land squeeze presents real barriers for entry into smallholder outgrower and contracting schemes, especially for landless women and rural youth who are looking outside of their communities to open new farmland. This paper will describe the landscape and livelihood impacts of the land squeeze in Tanzania as farming families extensify their landholdings into new frontiers.

The project landscape in this case is located within the Southern Agricultural Growth Corridor of Tanzania (SAGCOT), poised to become the breadbasket of Tanzania stretching from the port of Dar es Salaam to Malawi, Zambia and the Democratic Republic of Congo. SAGCOT is the product of public-private partnerships launched at the World Economic Forum in Dar es Salaam in 2010 to capitalize Tanzania’s *Kilimo Kwanza* (‘Agriculture First’) strategy. The goals of *Kilimo Kwanza* are to promote sustainable agricultural growth through public funding (USD 1.3 billion) and private investment (USD 2.1 billion) over a period of twenty years, raising productivity over 350,000 hectares to improve national food security, reduce poverty, and support climate-resilient livelihoods. This study contributes to CIFOR’s gendered research agenda by examining the ways in which men, women, and youth are differently affected by agribusiness expansion into forested landscapes and fertile agricultural lands.

Governing agriculture induced deforestation in Africa

Authors: van der Haar, S., Schoneveld, G., Amugune, I., Ihallainen, M., Gallagher, E.

Abstract: Almost two-thirds of agriculture-induced deforestation is estimated to be attributable to commercial agricultural expansion; often driven by crops produced for international markets. In addition to high forest-risk commodities such as cocoa and palm oil in tropical forests of West and Central Africa, crops such as sesame, soy and sunflower have in recent years begun to rapidly expand in dry- and highland forest ecosystems in Eastern and Southern Africa. How the impacts of crop production are governed, and the resultant impacts on the ground, often differs greatly between countries and sectors. For example, commodities such as oil palm and cocoa are often subject to standards established by non-state market-based instruments and closely monitored by public agencies, while sesame, soy and sunflower are only minimally exposed to either public or private authority.

In this paper, we contrast the nature and quality of regulatory oversight and institutional dynamics, and the resulting impacts on land use dynamics, in different sectors and countries (Ghana, Liberia, Tanzania, and Uganda) using a combination of remote sensing, network analysis and key informant interviews. In so doing, we identify the mediating role of different types of public and private regulatory initiatives in managing agriculture-induced deforestation and highlight the critical importance of international/external interventions and regulation. This paper will go on to demonstrate the importance, but far-reaching challenges, of promoting more territorially explicit governance systems in order to better manage the adverse environmental impacts of commercial agriculture expansion.

Improved rice production system for biodiversity conservation. Case of the Mahavavy-Kinkony Wetlands Complex Protected Area

Authors: TSIAMAHANANAHARY, Tsaralaza Jorlin; ANDRIAMASIMANANA Rado Hanitriniaina; FANAMBINANTSOA ANKASITRAHANA Randriamifidison Rindramampionona

Abstract: The establishment of protected areas in Madagascar including the Mahavavy-Kinkony wetlands complex contributes to the preservation of a unique Biodiversity in the world. It responds to the concretization of the Malagasy forest policy emanating from the adoption of the Malagasy environment charter which stipulates that the consideration of the man at the center of all processes is inescapable. It is in this context that the integration of rural development activities in the conservation of natural resources is highly favored in the management strategy of this protected area.

Indeed, the purpose of this presentation is to show the decrease in the rate of ecosystem degradation through a new agricultural policy, notably the "Improved Rice Farming System", which should enable the indigenous community to meet their economic and social needs, without compromising the biodiversity future of the MKWC PA.

For the sake of conservation, controls and monitoring of forests and ecological monitoring are carried out with the local community in a participatory manner. Sensitization, training and endowments of agricultural equipment are carried out. The result shows that more than 75% of local communities are now aware of the value, importance and benefits of the forest and other ecosystems in their lives. A marked improvement in the socio-economic situation of the population has been noted. The pressures on biodiversity are diminishing or even disappearing, namely clearing, "tavy" and bush fires Rindra that lead to the drying up of lakes and marshes. An increase in the natural regeneration of forests is noted. In short, strict conservation measures are a failure in the governance system; development becomes an inherent concept and conditions the effectiveness of any management strategies of the Mahavavy-Kinkony Wetlands Complex.

Key words: governance system, improved rice system, conservation, rural development, forests, wetlands

Central Cameroon Region between agricultural activities, urbanization and forest cover degradation

Authors: Tchindjang Mesmin; Ngo Makak Rose; Manfo Donatien; Saha Frédéric; Mbevo Fendoung Philippes

Abstract: The Central Region of Cameroon appears highly urbanized, because of its central position and the institutions it houses. This can be seen both through its urban population which represents 53% of its total population and which constitutes with the Littoral administrative region the most urbanized sectors of Cameroon. Because of this urbanization, the transformation of the original forest into other forms of land use is obvious. In this context, the urgency of proceeding with a precise zoning of the lands starting from the city of Yaoundé and in the other cities of the departments and surrounding communes becomes an imperative. It is in this sense that this research is initiated, in order to carry out an agricultural zoning throughout the Central Administrative Region, according to the classification techniques. The methodological approach consisted of the acquisition and digitization of images of very high resolutions. SPOT and Landsat images were classified using the Erdas imagine® software, with the maximum likelihood algorithm. Agricultural statistics data (AGRISTAT 11-17), collected and analyzed critically, show a striking lack of statistics. An analysis of the spatial dynamics of the city of Yaoundé between 1956 and 2017 was made combining aerial photos, Google Earth and Landsat images. It results that the urban expansion around Yaounde is remarkable, with an acceleration in from the 2000s. The degradation of the forest is effective reinforcing the hypothesis according to which, the urbanization of Yaoundé and its surroundings (in a radius of 30-100km) constitutes the essential deforestation driver. Agriculture (food market and urbanization) intensified with urbanization, particularly in the Awaé, Lékié and Grand Mbam basins. These results are analyzed in the light of existing data.

Key words: Agricultural activities, urbanization, forest cover degradation, Central Region

Session 3: Biodiversity and market-based instruments

Challenges and opportunities of market access in enhancing the farmers' livelihood through sustainable agriculture in Biosphere Reserve landscape

Authors: Neville MAPENZI; Paul DONTOSOP; Serge AMATO; Silvia FERRARI; Paolo CERUTTI

Abstract: The aim of Biosphere reserve is to enhance people's livelihoods and ensure environmental sustainability. For fulfilling this goal, agriculture productivity policy and market accessibility have to be assured. Market access raise up farmers' incentive to work hard in each step of agriculture value chain, therefore enable the shifting from natural resource livelihood practices to agriculture activities. The main objective of this study was to determine and examine the challenges and opportunities finding in agriculture productivity policy and market accessibility for developing action of improving the farmer's livelihood in biosphere reserve. For achieving the goal of the study 11 Focus group Discussions with different agriculture value chain actors were done and complemented by household interviewed of 351 households. Diverse socio-institutional and economic challenges were found. For enhancing market accessibility and agriculture sustainability many strategies were considered and light up the decision makers, researchers, ONGs and other organizations about their practical implementation.

Keyword: Biosphere Reserve, Improving livelihood, agriculture productivity policy, market accessibility

Wood processing and trade on wood products in Africa

Authors: Julius Chupezi Tieguhong; Modibo Traore; Godwin Kowero; Mahamane Larwanou; Paul Donfack; Doris Mutta

Abstract: Although many African countries harbour very valuable forest resources, the continent still imports large quantities of wood products amounting to about US\$ 4 billion annually. This is mainly due to low capacity of the wood processing industry that mostly employs inefficient and obsolete technologies. Logs can be processed into primary, secondary and tertiary wood products for home consumption and export. However, in many countries, the capacity to add value to primary wood raw materials for export as secondary and tertiary processed products is scanty, and this is especially true of logs harvested from natural forests. This paper provides results of an analysis of trade balances for three secondary and eight tertiary processed wood products from 12 West and Central African countries. Data on secondary wood processing was drawn from the ITTO Assessment of Trade database and that on tertiary processed wood products from FAOSTAT-Forestry, over a period of eight years. The findings show that from 2006 to 2013, Africa had a trade deficit of over US\$ 1 billion associated with trade in these three secondary processed wood products (furniture, builder wood and cane/bamboo products). Asian and Latin American countries made trade surpluses of US\$ 66.3 billion and US\$ 6.8 billion over the same period from trading in these three products. With respect to the eight tertiary wood products, the 12 selected African countries registered a trade deficit of US\$ 6.7 billion, while one Asian country, Indonesia, registered a surplus of US\$ 28.1 billion over the same period. These results suggest the need for a thorough evaluation of how value addition in the African forestry sector is being undertaken by various actors and at both secondary and tertiary levels of forest production; aimed at containing this situation, not only for export markets but also for domestic consumption and job creation.

Key words: Trade of wood products; Africa; Asia; Latin America, Value addition

Livelihoods and non-timber forest products: Influence of access and ownership rights, access to market among Bantu and Bagyeli at the periphery of Campo Ma'an National Park

Authors: Forbi Preasious Funwi; William Armand Mala; Tounkam Marlene Ngansop; Pierre Marie Chimi

Abstract: Non-timber forest products (NTFPs) constitute a fundamental source of food and revenue to indigenous populations living in and around forest in most forest regions of the world. In southern Cameroon, we find a diversity in ethnicity with different regards to NTFPs. Among these groups, we have the Bagyeli and Baka pygmies who for times immemorial lived as hunter-gatherers; are progressively being sedentarized with the birth of protected areas in the milieu in which they lived with little intrusion and external control in the case of the neighborhood of Campo Ma'an National Park (CMNP). This paper examines the ownership and access of indigenous and local populations to NTFPs in Southern Cameroon with a special focus on Bagyeli pygmies and Bantu ethnic groups. The socio-economic survey at the household and focus groups levels was undertaken in selected within villages. The results show that the economic valuation of NTFPs has significantly increased over the past 20 years among the two neighboring communities; in contrast, the mesh of access and ownership rights has become a source of conflict on language and representation between these groups due the recent sedentarization of indigenous people. While the relationship between NTFP's and livelihood has been acknowledged by Bantu due their market culture, as opposed to the Bagyeli who have been assigned in the majority of the cases as collectors; the less profitable status in the NTFPs value chain. The CMNP management seems to be a major stake for the sustainable management of these resources on one hand and a livelihood stake for indigenous and local populations living in and adjacent to these forests on the other hand. This paper examines the ownership and access of indigenous and local populations to NTFPs in Southern Cameroon with a special focus on Bagyeli pygmies and Bantu ethnic groups.

Key words: NTFP, Bantu, Bagyeli, Rights, livelihoods and Campo Ma'an National Park

Impact of formal institutions on market-driven harvesting of non-timber forest products from communal forests in Zimbabwe

Authors: Grace Mudombi-Rusinamhodzi and Andreas Thiel

Abstract: Promotion of market-driven harvesting of Non-Timber Forest Products (NTFPs) was stimulated by several studies that proved a vast dependence on NTFPs by rural households in developing countries. However increased market-driven harvesting of NTFPs has yielded varied forest and livelihood outcomes across products and communities. Some studies attribute the mixed outcomes of increased market-driven harvesting of NTFPs to the institutional arrangements shared by a society or community. Rules in use condition social-ecological interactions; with choices made at each level having outcomes that affect the biophysical conditions, community attributes and institutions at other levels. Higher-level scales (constitutional-choice rules) impose jurisdiction and autonomy constraints on lower-level scales (collective-choice and operational-choice rules). Institutional arrangements related to forests at the constitutional-choice level of the state define the property rights bundles through which rural households access benefits and manage communal forests. In Zimbabwe, the Constitution is the parent Act of every other legislation (Acts of Parliament or Statutory Instruments). Through a systematic review of Acts of Parliament, the overarching principles that underlie property rights bundles for harvesting of NTFPs from communal forests in rural Zimbabwe will be examined. The aim is to reveal fundamental provisions and to illustrate (through use of the conceptual schema for arraying property rights bundles) the effects of existing institutions on market-driven harvesting of NTFPs over time for rural households. Existing legislation was gathered from literature published by the Parliament of Zimbabwe while repealed Acts were gathered from National Archives of Zimbabwe and other secondary sources. Preliminary findings show an existence of punitive Acts that legally constrain commercial exploitation of forest resources which results in little or no incentives for communal forest stewardship. Therefore, constitutional-choice rules are impeding positive forest and livelihood outcomes from increased market-driven harvesting of NTFP

Session 4: Nature conservation policies

Does Tanzanian Participatory Forest Management Policy Achieve Its Governance Objectives?

Authors: Kajenje Magessa; Sophie Wynne-Jones; Neal Hockley

Abstract: Before the 1980s, centralized forest policies in many African countries excluded local communities and resulted in mismanagement of forest resources. Participatory Forest Management (PFM) was introduced with the objectives of devolving management and improving livelihoods, forest condition and governance. Previous studies of the ecological and livelihood impacts of PFM have documented mixed impacts but there is limited research on whether PFM improves forest governance and few previous studies compare outcomes to policy objectives. We assess whether PFM in Tanzania has achieved devolution, by comparing observed outcomes to stated policy objectives and the decentralization framework developed by Agrawal and Ribot (1999). We surveyed 227 individuals, in two case study villages, and conducted key informant interviews with 10 respondents at local level to answer these research questions: (a) To what extent are management institutions representative and inclusive of the local community? (b) To what extent are local communities empowered to influence decision-making and access benefits? (c) To what extent is the management of forest resources accountable to local communities relative to superior authorities under PFM? In the case study villages, PFM is characterised by a low rate of residents and Village Environmental Committee members engagement in: committee elections; formal village assemblies; PFM training; formulation and first approval of by-laws. There is also a low satisfaction with the mechanism of sharing benefits; lack of accountability of management institution leaders. Overall, we found a significant gap between observed outcomes and PFM policy objectives, and therefore a failure to achieve meaningful devolution.

Key words: Participatory Forest Management policy; governance objectives; devolution

The Context, Challenges and Prospects of Implementing REDD+ in Africa

Authors: Belachew Gizachew Zeleke

Abstract: REDD+ (Reducing emissions from deforestation, forest degradation and the roles of forest management and conservation), have an anticipated potential to generate a number of environmental and socio-economic benefits for Africa. Drawing on a vast array of literature and personal experiences, this oral presentation will present analysis of particular features and challenges that REDD+ implementation faced in Africa. The following features, context and challenges, along with the mechanisms to fill these gaps will be discussed: (1) the forest sector and REDD+ governance, (2) the finances for implementation of REDD+ and the associated results based payments, and (3) the technical capacities for forest carbon monitoring and reporting at a national level. Governance: the presentation argues that a radical land tenure reform, with a perfect safeguard mechanism that transfers forest land and carbon to the communities is unlikely under the current African politics. Rather systems should be sought for that respect local indigenous institutional arrangements, and allow forest-based communities to participate in decision-making and benefit sharing. Finances for REDD+ infrastructure and the results-based payment will not be available if all forested African countries would participate. Africa should, therefore, generate domestic finances, while negotiating for external sources such as bilateral and multilateral sources, and generate and seek for additional payments for ecosystem services from forest conservation. Using Forest Reference Emissions Level (FREL) as a proxy, the presentations shows the state of technical capacity of African countries to monitor their Forests. This presentation aims to contribute to an improved understanding of the contexts, challenges and prospects to consider for the capacity and policy development for REDD+ implementation.

Engendering collaborative forest management in selected protected areas in Cameroon: Reality versus Ideals

Authors: Yvonne Kiki Nchanji

Abstract: Nowadays, one cannot talk about addressing forest-related issues without involving the social dimensions related to it, for it is said “the fate of forest people is as important as that of the biological resources on which these people depend”. In developing countries, forest resource governance and management has undergone many profound changes in the past century. For example this management/governance system has changed from a central state system of control to a community-based approach and presently a collaborative management approach which is a co-constructed governance system. An ethnographic study was carried out for three months in the Korup National Park which, aims to address natural resource governance structure in national parks and seeks to understand how it affects the socio-political reality of the people as they manage the resources in their environment. Preliminary findings show that despite the changes in management systems over time, the forest management process in this protected area is still a top-down approach wherein, communities are not directly involved in the decision making process. Rather, committees - such as the village forest management committee (VFMC) - created via the co-management concept, are a medium through which communities are informed and directed on what to do by the park management - which is the Ministry of Forestry and Wildlife (MINFOF). This shows that though forest management and governance has changed on paper over the past years, in reality a centralised state system is still operational in national parks in Cameroon. I recommend that the community via the VFMC be actively involved in the decision making process, so the voice of the community can be an integral part of resource management in national parks.

Session 5: Forestland and political instability

Boko Haram Insurgency and the Necessity for Trans-territorial Forests' Governance on the Lower Lake Chad Basin

Authors: Okoli, Al Chukwuma

Abstract: The significance of forests as an existential threat to national security in Nigeria has been underscored in the phenomenon of Boko Haram Insurgency. The occupation and apparent 'weaponization' of Sambisa and the adjoining forests by Boko Haram insurgents has continued to pose a sapping tactical challenge that complicates the ongoing counter-insurgency efforts in the North East Nigeria. The instrumentalization of forests as an operational and defensive stranglehold by the insurgents in the lower Lake Chad Basin has been enabled by the existence of large expanses of dispersed, uninhabited and un-policed forested spheres thereof. This study examines the imperative for transnational forestland governance on the lower Lake Chad Basin against the backdrop of the continuing incidence of Boko Haram insurgency in that context. Drawing discursively from the 'ungoverned spaces' (territorial un-governability) hypothesis, the study posits that the prevailing vacuum of effective forestland governance in the region must be filled in order to mitigate the incidence. To that end, the study prescribes a strategic trans-territorial forestland governance regime whereby Nigeria and Cameroon synergize efforts in bringing about effective military and human occupation of the forested areas.

Key words: Boko Haram, forestland, forest governance, insurgency, lower Lake Chad

Farmer's responses to POLITICALcrisis: A case study of four villages in rural Zimbabwe**Authors:** Locardia Shayamunda; Benno Pokorny; Heribert Weiland

Abstract: Crises caused by natural and human induced disasters have always been part of farmer's life, but recently have proliferated on course of new economic, political and environmental challenges. Particularly in many African countries, where a large number of small-scale farmers live in marginalized contexts, and where the state has limited capacity or willingness to respond and mitigate existing threats, farmers are left alone with the challenge to sustain their livelihoods and to guarantee food for the family under highly unfavourable conditions. Nonetheless, farmers have to find ways to respond to crises. Better knowledge on the relevance and success of these local strategies may allow to more effectively support farmers in times of crises. Against this backdrop, this study analyses the responses of farmers in Zimbabwe to continuing situation of political crisis since the year 2000. By exploring the dynamics in four rural villages representing typical semi-arid contexts in Africa, the study identifies farmers' responses and underlying rationalities, and assesses their quantitative relevance and rates of success. The study shows that farmers have employed a wide range of strategies including the reduction of land size under cultivation, re-orientation to subsistence farming, adoption of low-input farming systems, intensification and extensification of agricultural production, diversification of income sources, overexploitation of resources, violence, crime, and the migration to urban centers or abroad. Particularly, the frequently observed strategy to reduce and concentrate inputs on the most suitable pieces of land had produced positive social and environmental benefits. Supporting such promising attempts of farmers to build robust farming systems in accordance to their capacities and interests can help to achieve development, social equity and sustainability in Sub-Saharan Africa.

Key words: Livelihoods, crisis, development, sustainability, food security

Why are people crowding out of forest management in Burkina Faso?

Authors: Mawa Karambiri; Maria Brockhaus; Ann Degrande; Fobissie Kalame

Abstract: Demographic growth that increase local needs for agricultural lands are usually presented as one of the major driver of deforestation in the tropics. While the National Determined Contribution (NDCs) of Burkina Faso aims to increase natural forest cover, forestland conversion continues on the ground. This paper focuses on the under explored policy implementation, institutions, actors and processes usually labelled as indirect drivers of deforestation yet, at the foundation of people's motivations and incentives to keep or not the trees standing and thereby their adherence or rejection of the ultimate forest management objectives. Based on the cases of 3 villages under similar circumstances in Southern Burkina Faso, engaged in the implementation of the community forest management program (CAF) since 1990, we build on comparative politics perspectives to demonstrate that conflicting national policies, weak local forest governance monitoring and inequitable benefits sharing are the top drivers of people's incentives to leave or remain in the forest management. While some villages openly protest the management of the forest and its benefits but remain in it, others engaged in illegal forest conversion and forestland sale to outsider 'agribusiness men' and thereby 'crowd out' of the forest management. Most Similar Case Design methods further enable us to diagnose and discuss the decisive factors that explain this difference of outcome between the villages. Uncovering the hidden drivers of deforestation is a prerequisite to acting on the traditional direct drivers.

Session 6: Forest concessions

Analysis of a new approach to formalise the sector of the small scale chainsaw milling for export in the eastern part of the Democratic Republic of Congo (Nord-Kivu and Ituri provinces)

Authors: S.Ferrari; G.Chishweka; L. Brotto

Abstract: The present work refers to a study conducted under DURAFOR-EST project, financed by FAO as part of FAO-EU FLEGT programme and executed by the NGO named ACS in 2016 in the east of the DRC. The objective of the work was to test the feasibility of a collaboration between small scale chainsaw loggers associations and the industrial timber society ENRA as a proposal to contribute to formalise the informal sector of the small scale logging destined to exportation. Small scale loggers are the responsible of most of the timber harvested and exported in the region. Usually they are organized into associations and they tend to have agreements with local communities and regular harvesting permits upon tax payment. Often small scale loggers work for foreign clients, who pre-finance their harvesting activities. Trees are cut into irregular boards directly in the forest with the use of chainsaw and then boards are transported and sold in the market of Kasindi, at the border with Uganda. Here trade operations occur in a very unclear context in which the respect of exporting procedures is difficult to control. The new approach here proposed tried to facilitate trade relations between a legal small scale logger (timber provider) and ENRA (client and exporter): transit of timber through the industrial society was suggested as a solution to allow a better control of the respect of the timber trade procedures; moreover, the local transformation of timber into finished product conferred a significant added value to the material usually exported as raw timber. Results show that the proposed approach could represent a real contribution to formalise this artisanal sector if some conditions are fulfilled which concern a more responsible implication of local communities and of the industrial society in the value chain.

Assessment on Chinese Forest Management in Mozambique

Authors: Jianmin Xiao, Hongfei Jiang

Abstract: China dependence on foreign natural materials has been increasing along its rapid economic development in the past decades. Many Chinese companies have been involved in forest investments in Africa, such as forest management, timber processing and forest product trade. Those Chinese forest managers are playing important role in legal and sustainable forest management in Africa. In Mozambique, Chinese forest managers owned 33 concessions with 1.24 million hectares in 2015. Sponsored by WWF, in 2014 and 2015, an investigation had been done to 14 forest managers (including 9 Chinese managers, 2 local managers and 3 Europe managers). Moreover, onsite surveys in concession forest were done to 8 managers out of those 14 managers. At the same time, interview had been conducted with some stakeholders. This paper demonstrated that: 1) on one side, Chinese forest managers have contributed to job opportunities, enabled technique/knowledge transfer, increased taxes & fee and government revenue; 2) on the other side, their shortcomings were: only exploitation on limited tree species, no awareness of protection on mother trees, excessive harvesting, great waste in harvesting and collecting, lack of forest professions, lack of personal protection equipment, unqualified forest management and operation plan, and illegal harvesting. Finally, policy suggestions on legal and sustainable forest management for Chinese forest managers in Mozambique were proposed.

Suitable timber tracking system for low income forest corporations in Central Africa

Authors: Kadiri Serge Bobo and Guy Frank Ndomileb

Abstract: In Cameroon, only 17% of Forest Management Units (FMUs) are held by Cameroonians; the rest is held by foreigners who can afford sophisticated Timber Tracking Systems (TTS) for their companies. To encourage more Cameroonians in enrolling into a sustainable but also profitable forest management compatible with FLEGT-VPA requirements, this paper seeks to elaborate on a suitable TTS for forest concessions held by nationals. The present study case was carried out in the Annual Harvestable Area 3-3of the FMU 10065 located now Belabo town in the Eastern Region of Cameroon from June to September 2016. A sample of 270 trees was monitored through all the tracking procedures to determine a tracking rate. Results showed that due to the low capital invested in forest concessions held by Cameroonians, the tracking rate (13%) as well as the level of understanding of procedures and requirements of tracking were very low, and the observed TTS was archaic and totally documentary. A sophisticated TTS, costing on average 25 million CFA francs per year, could not to be applied by such companies due to fundamental constraints linked to equipment, software and competent staff. A reliable documentary TTS was then designed to solve the problems of survey tags not always found on stems, felling of non-surveyed trees, loss of information and opaqueness of tracking. The proposed TTS is made of 10 interconnected stages, from the preparation of logging inventories to the transport of timber, with a related cheap annual cost of about 11 million CFA francs affordable by a medium timber business Cameroonian. It is not less reliable than a sophisticated TTS, and could be taken into account while implementing the FLEGT-VPA procedures or could be used temporarily in low income FMUs in Central Africa while waiting for the implementation of a national timber tracking platform.

Key words: Cameroon, Central Africa, Documentary procedure, FLEGT-VPA, Low capital forest concessions, Timber Tracking System.

Session 7: Transnational and decentralised forest governance

Change and continuity in decentralised forest governance in Madagascar: a case study of Ambohilero forest

Authors: Guybertho Randrianarivelo

Abstract: This paper analyzes the process of implementation of the policy related to the decentralization of natural resources in Madagascar, through a case study of the management transfer system in the Ambohilero forest. The forest contract management process in Madagascar refers to a set of legal and regulatory frameworks for local forest governance aimed at improving the management of forest resources through the establishment of local entities (COBA) whose management design take into consideration of the customary context. The major ambition of the COBA is to achieve a "sound management" of forests through the implementation of a "multi-layers design". However, this self-sustainable local forest management transfer project seems to have been conceived without taking into consideration two of the major factors which influence the governance of forests in Madagascar: (i) the strong dependency of forest policy on international aid on one the hand, and (ii) the prevalence of informal practices on legal timber harvesting schemes.

This paper aims to understand: how does management transfer scheme, perceived as instruments of decentralization and 'good governance' of forests, fit into forest governance process in Madagascar? What could and how do these mechanisms change the balance of power between stakeholders and the 'practical norms' in the logging sector in Madagascar? In this respect, the paper proposes to examine the issue of forest management in Madagascar through a historical sociology approach to the creation of these instruments on the one hand, coupled with a socio-anthropology of the functioning or dysfunction of COBAs around the Ambohilero - Ambatondrazaka Forest Massif.

Key words: Local governance, protected area, Decentralization, classified forest, sustainable management, forest certification

Cross-border woodfuel trade uncovered: mapping of regional trade flows between and from Central African countries and implications for woodfuel governance

Authors: Richard Eba’a Atyi; Phosiso Sola; Davison Gumbo; Jolien Schure

Abstract: Woodfuel in sub-Saharan Africa is generally traded to nearby markets and centres with high demand, depending on available transportation and infrastructure. In some cases, especially for charcoal trade, long distances have been reported that reflect scarcity of nearby resources and concentrated consumer markets. In addition, the wider context of agriculture and forest landscapes with available tree resources and restrictions in forms of regulations or seasonal fluctuations seem to play a role in abundance and visibility of the trade. Even though most countries do have a legal framework with trade regulations, woodfuel commercialisation remains largely informal. Challenges to obtaining reliable data on woodfuel trade patterns and associated governance issues are magnified in the context of cross-border trade and conflict zones. Cross-border trade of woodfuel is largely under-researched. This scoping study by CIFOR and partners analyses main transnational trade flows for a selected region, within and from Central African countries with extensions to the East and Southern African regions. Results reveal patterns of cross-border trade, priority zones and implications for woodfuel governance in transnational contexts. Information from this review informs further development of the CIFOR-led four-year project on woodfuel (part of the 2018 – 2020 EU-funded program ‘Governing multifunctional landscapes in sub-Saharan Africa’) aimed at fostering more sustainable woodfuel option throughout the value chains.

Globalizing Governance of Congo Basin's Forests: A Socio-anthropological Approach of the VPA-FLEGT Process in Cameroon

Authors: Sandrine ANDONG ESSOLA

Abstract: The approval of the Voluntary Partnership Agreement on Forest Law Enforcement, Governance and Trade (VPA-FLEGT) in Cameroon raised a great debate on the need for a new legal instrument to ensure sustainable forest management. This, because of the context of standards production (less or not applied) which was already very prolific. This contribution has two goals therefore, first of all, to analyze the implementation of the VPA-FLEGT's agenda in Cameroon by identifying the main actors involved and their different strategies and resources for action. Secondly, to question how the institutionalization of the VPA-FLEGT in Cameroon changes the reality of forest governance in national arenas. To that end, we used a socio-anthropological approach to appreciate the cultural, organizational and functional transformations that this agreement operates in the forestry sector. In particular, our work shows that (i) the VPA-FLEGT in Cameroon is an innovative instrument, but relies mainly on the recycling of some existing forest policies and measures. (ii) Nearly a decade after Cameroon's engagement in the VPA-FLEGT process, its implementation is struggling to come to reality due to various technical and political obstacles that slows its anchorage in Cameroon's forest policies. (iii) Finally, the question of the legitimacy and relevance of the VPA-FLEGT in Cameroon raises numerous divergences and tensions between the main actors of forest policies in Cameroon. For some, this instrument would be a panacea to the Cameroonian forest sector difficulties and for others, the VPA-FLEGT is the epitome of a Western neo-interference in the governance of natural resources in the tropical zone; hence the purely strategic commitment of Cameroon in this initiative which she does not adhere to the principles.

Session 8: Development, social equity and sustainability

How can local stakeholders make the room for negotiation?: Addressing the paradox of 'participation' and 'community' in forest management policies in southeastern Cameroon

Authors: Takanori OISHI

Abstract: In central African countries, following the leadership of national and transnational economic communities (i.e. COMIFAC), considerable effort is being made to establish regulations and legal frameworks on environmental resource use, based on international conventions and laws. Such initiatives are often undertaken within a top-down initiative of 'participatory' and 'community-based' approaches, despite these concepts originally suggesting bottom-up tactics. However, such idealistic approaches have been translated and introduced to regional and local contexts without sufficient consideration for the unique local and social conditions. This then tends to be received in the local context as enforcement, or an obligation, which may be cause for local conflicts: there do exist significant gaps between global environmental policy initiatives and their actualised efforts on the ground. My questions are addressed to two points as follows: (1) Are these gaps demonstrating evidences of the lack of democracy in the reality of forest governances in Africa? (2) If so what factors are contributing to maintain and reproduce these gaps? To explore these question, taking examples from the tropical forest zone of southeastern Cameroon, I will report on how environmental and rural development policies are impacting rural livelihoods, the social welfare of the local residents, and the forest landscape. I will then attempt to demonstrate micro-level responses by local societies, that can be described as an art of the "politics from the below". Finally, while acknowledging the limitations of methodology as fieldwork-based anthropologist, I will discuss what kind of research and practice can contribute to the positive co-governance of natural resources between diverse actors, referring to the potential creation of a citizen science platform in Africa.

Modeling of a local governance of forest areas by the valorization of the Agnarandray concept or the heritage affiliation of the Zafimaniry of Amoron'i Mania, Central Highlands of Madagascar

Authors: RANDRIAMIFIDISON RINDRAMAMPIONONA Fanambinantsoa Ankasitrahana; TSI(A)VAHANANAHARY Tsaralaza Jorlin

Abstract: The forest policy of Madagascar has evolved incessantly since the periods of royalties (before 1896). The first texts governing the forest were adopted in 1881. Face to an important loss of forest resources, a strategy was adopted which considered the important role of the population in forest protection; transfers of natural resource management have been made since 1996. Then, the implementation of protected areas has been strengthened since 2003, integrating the social aspect into the conservation axes. Despite all this, failures are felt and the degradation remains difficult to control with human intervention. It is thus necessary to be able to identify strategies that are socially viable, economically viable and ecologically sustainable to find a compromise in human activities and forest conservation. Our approach was conducted in the Amoron'i Mania Region with 16,192 ha of forest on the central highlands of the island, territory of the Betsileo ethnic group which is highly renowned for its attachment to traditional cultures. The case of the Rural Commune of Antoetra Zafimaniry was chosen because the Zafimaniry is a sub-ethnic group whose art of wood is classified world heritage by UNESCO. It connects the forest corridor of eastern Madagascar from north to south. Our goal is to set up a model of local governance of forests by valuing traditional culture, especially the concept of Agnarandray or patrimonial affiliation or lineage. Our approach consists of associating each lineage group with a well-defined site according to the site's history (cartography, multicriteria surveys), identifying the existing resources in each part of the sites in a participative way (inventories) in order to constitute the model.

Key words: Amoron'i Mania, Conservation, biodiversity, forest, zafimaniry, agnarandray, forest governance

Determinants of sustainability of exclosure establishment and management practices in Tigray Region, Ethiopia

Authors: Samson Shimelse; Tamrat Bekele; Sileshi Nemomissa

Abstract: Converting degraded free grazing lands into exclosures is one option to promote natural regeneration of plants and to restore degraded ecosystems in Ethiopia. The present study was initiated with the objective of assessing the determinants that affect the sustainability of exclosure establishment and management practices at the household level. A total of 180 households were systematically selected and a structured questionnaire was provided to these households to collect their perception. Ten in-depth interviews with key informants 9 FGDs were also carried out. Determinants of farmers' sustainability of exclosure establishment and management practices were assessed. The empirical results from binary logistic regression model showed age, tenure, and off-farm activity were positive and significant predictors of sustainability of exclosure establishment and management practices while household size, farm size, distance and number of livestock have a negative effect on exclosure establishment and management practices in the study area and they were not significant except livestock number. These findings strengthen the fact that in order to achieve sustainable exclosure establishment and management practices, institutional and economic factors should be given special attention. In conclusion, there is a need for sensitization of farmers to form groups to benefit formal training of all community in the exclosures and soil and water conservation technologies and capacity building of farmers in other livelihoods areas to reduce the burden on natural resources.

Key words: Exclosure, Management, Sustainability, Tigray (Ethiopia)

Where are the women? A critical review of the current literature on gender and woodfuel value chains in Sub-Saharan Africa

Authors: Markus Ihalainen; Phosiso Sola; Jolien Schure

Abstract: More than 70% of the population in Sub-Saharan Africa rely on woodfuel as their primary energy source. While much of the attention has been devoted to the health and environmental impacts associated with woodfuels, an increasing number of studies are demonstrating the crucial importance of woodfuels as a source of employment and income for millions of people. Understanding the structure of woodfuel value chains is critical for formulating policies that enhance, rather than undermine, welfare gains related to woodfuel activities. However, most studies have failed to collect sex-disaggregated data on participation in value chain activities and/or to analyze gender dimensions influencing the terms and benefits of participation. This has contributed to a misconception of commercial woodfuel trade as a 'male-activity', while women are thought to mainly collect firewood for domestic use or feature as end-consumers. In recent years, a limited number of studies conducted in various sub-Saharan countries have highlighted women's increasing involvement throughout the value chains – as producers, transporters and traders of woodfuel. Findings suggest that the extent, nature and benefits of women and men's involvement in the chain is often mediated by gender dynamics and inequalities on multiple levels. However, few studies adopt an explicit focus on gender in examining woodfuel value chains. Most evidence on gender dynamics in woodfuel value chains tends to be anecdotal or limited to certain aspects of the value chain. Studies addressing gender also vary in terms of methodological and analytical approaches, making it difficult to compare cases and identify particular factors or conditions that can impact women's participation and benefits in and across different contexts. This paper compiles and critically reviews the current literature on gender and woodfuel value chains in sub-Saharan Africa, identifies pertinent knowledge gaps and proposes a conceptual framework for more systematic approaches to addressing gender in woodfuel value chains.

Session 9: Community forestry and local development

Extent and composition of private tree farming in Southern Tanzania

Authors: Kimambo, Niwaeli; L’Roe, Jessica; Naughton-Treves, Lisa; Radeloff, Volker

Abstract: Trees are in high demand in East Africa. Much research focuses on charcoal and firewood demand especially from dry forests, but rapid urbanization has also increased the demand for timber products for construction; while government rural electrification programs have increased the demand for electric poles. Tanzania alone is forecast to have a timber deficit of 2.7 million m³ by year 2025 (Indufor, 2011). Natural forests, government plantations, and company-owned plantations used to supply these tree needs, but they can no longer keep up with the sky-high demand. Local policy makers agree that individual, private farmers will need to be part of the local solution to the deficits. Private tree farming is expanding in Tanzania (Mankinen et al., 2017) among rural smallholders and among urban-based entrepreneurs who acquire land in rural areas to establish medium-scale tree plantations, a trend also seen in Uganda (Jacovelli, 2009). We present a two-part study that combines remote-sensing and spatially explicit field interviews of tree farmers. The remote sensing study maps the extent of tree farms in the Southern Tanzania using the recently released Harmonized Landsat-Sentinel dataset. Its methodological innovation is to identify detectability thresholds by tree farm area and tree age. The field-based interviews examine the activities of Maisha Shamba Association, an organized group of Tanzanian urbanites (~ 400 individuals) whose members purchase land in rural areas in order to plant pine, eucalyptus and teak. Combining the remotely sensed data and the field data will show the relative contributions of rural smallholders versus urbanite commercial farmers to overall extent and volume of private tree farming. An understanding of the extent and composition of tree farming is necessary for informing the rapidly changing landscape of forest resource management in the region, especially as natural forests dwindle. At the same time, the research documents a tangible pathway of agriculture commercialization (Hall, Scoones and Tsikata, 2017) that links rapid urbanization and investments in the forestry sector.

Traceability of wood energy in dry savannah zone: case of Biskavaï community forest, Far North Cameroon region

Authors: MBOGNING KOUEDA KOUNG Eric

Abstract: The illegal and anarchic exploitation of wood energy in community forests in Far north Cameroon and especially in the Mokolo subdivision has reached an alarming speed which worries the actors involved. We conducted a study on the challenges related to wood energy traceability in dry savannah zone where our choice was focused on Biskavaï community forest. To approach this theme, we proceeded by an exploratory approach where the report was made, then by field surveys of one hundred households and interviews with resource persons. Documentary sources on wood traceability were used. Data processing was done by SPSS software for statistical analysis. The QGIS Geographic information system and mapping software allowed us to make the maps. This study shows that three levels of actors are involved in the wood energy sector of the Biskavaï community forest. Among these actors, we have as institutional actor the MINFOF represented by the regional delegation which is responsible for the implementation of Cameroon forest policy in the Far north region. Moreover, as strategic actors, the GIZ ProPFE which supports the action related to the monitoring of implementation of the simple management committee. In addition, the Biskavaï community forest has two marketing channels including a legal circuit used by the management committee and an illegal circuit represented by the fraudulent operators. There are also several illegal timber markets, including two permanent timber markets. The constraint related to the traceability of the FLEGT process compared to the context of dry savannah, the difficulty of clarifying the roles and responsibilities of the various actors, the insufficiency of the logistic actors, the insufficiency of the logistic capacities and operation of the forest officers and riparian communities, insufficient awareness of local population on the sustainable management of resources and lack of technical capacity of the members of the management committee on the realization of inventories. At the end of our results, we proposed a model of wood energy traceability. This traceability system is documentary and focuses on the roles and responsibilities of the actors involved at each level. However, we were able to highlight the strengths and weaknesses of the proposed traceability system.

Key words: Traceability, management committee, community forest, dry savannah zone, illegal exploitation.

Toward an innovative community forest governance strategy: A case study of three Community Forests in Centre Cameroon

Authors: Emilienne Diane Bala Bala and Kadiri Serge Bobo

Abstract: Community forestry in Cameroon presents mitigated results after two decades of implementation. The technical complexity of Community Forests (CF) management standards is one of the main obstacles to improving the living conditions of local communities. But, how to minimize the financial losses associated with pre-logging procedures in CF in Cameroon? The purpose of this article is to propose an innovative strategy for CF governance that would help limit financial losses due to pre-logging procedures which maintain communities in illegality. Our main hypothesis was that the lightening of CF management standards in Cameroon would contribute to improving the living conditions of local communities. Thus, operating inventories with trees geo-referencing were carried out in three CF (CRVC, ADNG and AFCOMN) in the Centre Region from March to June 2018. These inventories consisted in identifying and marking all healthy exploitable stems in the annual logging exploitable plots in 2018. These stems were then located in their counting units using a sketch map. The exploitable timber potential obtained from the inventories was compared to the figure found in the Simple Management Plans (SMP) validated in 2014. It turned out that the volumes obtained from the operating inventories are different from those expected according to the SMP. The SMP of CRVC and ADNG overestimated the exploitable volumes by 29.68% and 33.11%, respectively, while AFCOMN SMP underestimates the exploitable volume by 26.41%. In each studied CF, some species listed in the SMP have not been identified in 2018; this is a proof of lack management inventories said to have been realised in 2014. Therefore, it would be imperative to replace the management inventory with the participatory mapping that could help to choose the management options of the CF. It would also be better to cancel the environmental impact assessment and the socio-economic studies. The operating inventories with trees geo-referencing of each annual logging plot should also be removed. Only the full inventory of the five-year block with just the geo-referencing of exploitable stems should be required to draft the SMP. These measures will allow CRVC CF to reduce its expenditures by about 40 millions FCFA (61,000 €), while AFCOMN CF will save about 18 millions FCFA (27,500 €) and ADNG CF about 39 millions FCFA (59,500 €). As we hypothesised, it is possible to lighten the CF in Cameroon with unnecessary procedures, and thus helping them to save important money that will enable to invest in different development projects in their community for their well-being.

Key words: Community development; Community forest; Forest governance

Are community forests a viable model for the Democratic Republic of Congo?

Authors: Guillaume Lescuyer; Tito Kakundika; Ignace Muganguzi Lubala; Isaac Shabani Ekyamba; Raphaël Tsanga; Paolo Omar Cerutti

Abstract: Since the second half of the 2000s, several options for implementing Community Forests (CF) in the Democratic Republic of Congo (DRC) have been discussed in the country's technical and political circles. Proposals and pilot testing have increased in the last 2-3 years, but the funding of initiatives is often proposed for divergent purposes taking different approaches. We reviewed current experiences in the Eastern province of DRC and found that nobody has carried out an estimation of the financial returns of the business models they drew up for/with the communities involved. We therefore conducted a financial feasibility analysis for two case studies, estimating the costs of developing/implementing activities and the benefits expected for the communities within the next 5 years. Four main conclusions were drawn from the analysis: (1) a majority of the activities conducted under the CF model deal with rural development and not forestry operations per se; (2) the current activities of the local populations, such as agriculture, hunting, charcoal-making, chainsaw milling, fishing, and mining, are largely conducted on an individual basis and without abiding by the legally mandated rules; (3) several forest activities, such as biodiversity conservation or carbon sequestration, are designated but not detailed in the management documents and appear to have little legitimacy for local populations; (4) the two initiatives show a negative financial performance, with the initial and implementation costs being significantly above the medium-term profits. Community forestry is unlikely to develop in the DRC unless local people are guaranteed that it will contribute to improving their livelihoods. This requires an ex ante systematic assessment of the financial performance of the CF schemes and a simplification of the legal constraints that greatly add to the cost of creating and operating CFs.

Session 10: Forest and climate change

Using wood to mitigate Climate Change in Africa: Lessons learned from Quebec Policy

Authors: Martin Claude Ngueho Yemele; Christophe Dongmo

Abstract: Climate change is recognized as one of the greatest challenges worldwide. Several initiatives have been launched to respond to this threat. The Paris Agreement is an important milestone in the long struggle against climate change. Wood and wood-based products used in construction and in applications such as furniture, doors, window frames and cabinets may be substituted for relatively high emission, non-renewable materials such as concrete, metal, bricks and plastic. It is well known that using wood products instead of other building materials can mitigate climate change. Climate benefits of wood-based products are demonstrated through life-cycle assessment, including carbon footprint analysis. The presentation focuses on the wood use Strategy for Construction launched in 2008 in the Quebec Province of Canada to tackle climate change. The initiative aims at increasing wood use in construction and reducing the greenhouse gas emissions. Provincial and local governments, as well as partners from industry and research institutions are involved and are working together to increase the demand for wood solutions in construction, especially in non-residential one and tall buildings. Governments lead by example, adopting a wood charter and creating in Quebec a network of functional buildings based on wood solutions. Government-funded innovative projects support the development of new wood products and technologies. Obstacles for using wood solutions are removed in the building codes. The physical properties, mechanical performances, and environmental properties are promoted of wood. Lessons learned from the Quebec policy experience are adaptable and new ideas and approaches can be suggested to the Congo Basin countries. Taking into account the specific context of those developing countries, advice can be given to design an innovative framework to enhance wood and wood products in construction in Africa, especially in West and central Africa.

Impact of illegal logging on climate change: Case of timber producing countries in the Congo basin and Asia

Authors: Serge Piabuo Madiefe et al.

Abstract: Emerging literature underlines the ever increasing implications of illegal logging on forest cover and climate change. More than a quarter of wood exports from Congo basin countries are from illegal origins, Republic of Congo registered the highest percentage of illegal logged wood (71%) in the region and in the World, Democratic Republic of Congo (59%) , Cameroon (27%) and Indonesia (38%). Laos in Asia is the second globally and the first in Asia with 70% of its total wood exports from illegal sources. This paper uses secondary data from the World Development indicator (WDI), World Governance Indicators (WGI) and the Chatham house to review the trends and impact of illegal logging within timber producing countries of the Congo basin and Asia. It equally investigates how institutional arrangements such as corruption and government effectiveness affect climate change. The results show that although Asian producer countries have recorded high levels of illegal logging over the years, the amount of illegally logged timber is reducing, this is supported by the panel data regression result which indicates a positive but not significant impact on climate change. Due to improving governance effectiveness in implementing laws and policies aimed at reducing illegal logging, government effectiveness amongst the Asian producing countries have a negative and significant impact on climate change, thus government action is contributing significantly to mitigating climate change. Similar analysis for producer countries in the Congo basin shows that, illegal logging have a positive and significant impact on climate change, this is coupled with the poor institutional framework with corruption having a significant positive impact on climate change. The paper concludes that Illegal logging is a significant contributor to climate change within producer countries in Congo basin, With reducing effect of illegal logging on climate change due to improved government effectiveness within Asian producer countries, there is hope that significant progress in reducing corruption and enhancing government effectiveness in the Congo basin will go a long way to reduce illegal logging and its incidence on climate change.

Key words: illegal logging, climate change, corruption, government effectiveness

Have you Ever seen Trees bringing Rain Here? The Mau Complex and the Political Economy of deforestation in Kenya

Authors: Maurine Ningala

Abstract: Ecologically, forests in Kenya oscillates between the interface of multiple commodity production networks and diverse agricultural mosaics. The establishment and expansion of these networks involve historical and political processes that have shaped not only forest geographies but also capital articulations and human-environment connections. Mau Forests Complex has been, seriously degraded through illegal and poorly planned settlements, as well as through uncontrolled and unlawful forest resource extraction and conversion to commercial as well as agricultural production. This study therefore, intends to establish the relationship between party politics and Mau Forest conservation in Kenya over time. The study will give policy guidelines derived from the study on sustained use of the forests and blue print for forest recovery.

Session 11: Forestland use and informality

Intra-industrial Development Priority Identification in Relation to China-Africa Forestry Capacity Cooperation

Authors: Zhixin Deng; Lu Qin; Marc J.J. Janssens; Denis J. Sonwa

Abstract: Africa is rich in forest and labor but lack of value added manufacturing. To develop forest industry in Africa sustainably, key is to predict its intra-industrial development priority of various potential forest products, which should positively relate to competitiveness order of different products along global forest value chain. Many economic studies focused on inter-industrial competitiveness and intra-industrial macro-variables e.g. trade or competition intensity, but less in technological process and production structure at micro-level. This means economic implications of changes in technological processes and production structures of various forest product value chains also haven't been sufficiently studied. Hence, intra-industrial competitiveness and in turn development priority have yet to be disclosed. To do so, we suppose under general African conditions: The smaller technological process complexity of a forest product is, more competitive would be its manufacturing value chain. This hypothesis and its inferences were then tested through FAO forestry statistics via determining technological process complexities of 4 sub-sectors in sequence: roundwood, sawnwood, wood-based panels, and pulp- & paper products. It was found that over last 53 years (1961-2013), the general international competitive order of African forest product value chains was: roundwood overall, sawnwood over wood-based panels and pulp- & paper products, and wood-based panels over pulp- & paper products. Furthermore, we find within sub-sector wood-based panels, plywood is taking the lead against fiberboard and particle board, plywood value chain in Africa is advancing more steadily than other forest product value chains. Consequently, plywood as an exemplar along with its production process was discussed regarding its market prospect and institutional constraints to develop China-Africa capacity cooperation in forest industry.

Key words: Intra-industrial Competitiveness, Technological Process Complexity, China-Africa Forestry, Capacity Cooperation, Technology Change, Structure of Production

Deforestation and forest degradation within and around Douala-Edea Fauna Reserve: Status, Drivers, Impacts and Responses

Authors: Hiol Hiol François; Nguenang G.M.; Kouedji Monthe J.F; Nguenkap Lemegne , A.C.; Sobngwi Tagne, P; Yemdji, A; NNanga D.J.H; Mbouna D

Abstract: The Douala-Edea Fauna Reserve (RFDE) is a vast protected area of 160 000 ha situated in the Littoral Region of Cameroon. This reserve is rich in biodiversity. However, it undergoes a strong anthropological pressure and is progressively degraded. In the past, several studies were conducted in the RFDE, and were centered on the evaluation of the impact of human activities on forest cover. But the results and the recommendations of these studies had not still been converted and not capitalized in concrete management actions. Therefore, the necessity of continuing to study the evolution of RFDE forest cover turns out to remain relevant and urgent. In this line, a study was conducted between 2014 and 2015 in the frame methodology adapted from the DSPIR (Driving Strengths, States, Pressures, Impacts and Responses) of the European Environment Agency (EEA). It emerges from this study that between 1989 and 2014, in 25 years, the forest cover in the RFDE and its periphery decreased by 38 255 ha, that is 19 % of the surface of initial forest among which 4269 ha within the limits of her RFDE. The ecosystem of mangrove swamp has decreased by 9176 ha that is 14 % of the surface of initial mangrove swamp. The study confirms the main drivers of deforestation already identified in the zone. i) the strong use of the wood energy for the smoking of the fish, ii) the extension of agro-industries and small farm, iii) the exploration and the oil exploitation(operation), iv) the illegal logging. Approximately 20 ha of forest lands are cleared every year for subsistence farming following a frontline which moves from the periphery inward of the reserve. Agro industries activities as well as oil exploration and exploitation in periphery of the RFDE are also important factors of deforestation and degradation of the forest. The results also show however that the RFDE constitutes an important stock of carbon. The elaboration of the RFDE management plan will have to reconsider the reserve demarcation so as to plan an agro-forestry strip at the reserve periphery within which controlled human activities will be undertaken, and to preserve a core last of protection area where eco-compatible activities are regulated.

Key words: Douala-Edéa Fauna Reserve, Drivers of deforestation, Stock of carbon, management plan

'Rosewood' and illegal timber trade: informality, global capital and rural development in Zambia

Authors: Paolo Omar Cerutti; Davison Gumbo; George Schoneveld; Kaala Moombe; Robert Nasi; Xiaoxue Weng

Abstract: In much of Sub-Saharan Africa (SSA), the informal economy rules supreme. Often defined as unregulated production, distribution and service provision, informal economic activities across SSA provide crucial cash income and employment for both rural and urban populations. Governing the informal economy is recognised as a key policy challenge for governments across SSA for both its contribution to local livelihoods and its common association with illegality, tax evasion and unsustainable practices. In addition to such challenge, because of the increasingly globalised trade in commodities, parts of the local informal economy can also be supported by global sources of capital. Against this backdrop, this manuscript focuses on the political economy of the international rosewood trade and interrogates the role of global capital, in particular that of Chinese origin in Zambia, and its impacts on rural livelihoods, the environment and resource governance. Results indicate that in recent years rosewood production in Zambia could have amounted up to about 110,000 m³ per annum, with revenue losses of about USD3.2 million per annum, and a total estimated amount of about USD1.6 million paid in bribes to state officials. Results also indicate that rural villagers across SSA are increasingly forging direct links with foreign investors, producing innovative business models that accelerate the rate of small-scale production and extraction of resources – all the while still embedded in the rural economic system marked by legal ambiguity and limited government oversight. This creates new challenges for national governments and the international community in promoting rural development and sustainable use of natural resources such as land, timber and minerals. Such 'globalised' rural informal economy urgently calls for innovative policies in order to maximise the benefits of global capital flowing directly to rural populations and minimise the negative impacts associated with the environment, revenue losses and resource governance.

Session 12: Territorial development

Identification of territorial actors for development through ecotourism in mountain protected areas in Tunisia: Case of Ichkeul and Cape Negro-Jbel Chitana

Authors: Boughamoura Olfa; Khelifa Samiha; Vles Vinent

Abstract: Since the 2000s, projects and studies have been multiplied for the development of ecotourism in Tunisian protected areas. Despite these efforts, the Tunisian case faces several failures. As part of this study, we aim to provide elements of reflection on a contractual scheme for a sustainable territorial development plan by ecotourism, around mountain protected areas in Tunisia. For this reason, we adopted the strategic prospective analysis revealing and analyzing the relationships between the different actors involved in ecotourism in the protected area. A Matrix of Alliances, Conflicts, Tactics and Objectives among MACTOR actors was developed in a participatory way to analyze the actors' strategies. After doing a triangular analysis which consists to an inventory of the projects and studies about the protected area of Ichkeul and Cape Negro-Jbel Chitana, semi-structured interviews with persons from different sectors, we invited the actors met on the field or mentioned in the projects in a workshop organized in partnership with the General Directorate of Forests in Tunis in order to identify the different categories of actors and analyze the balance of power between them. This analysis is done through a matrix notation system. Eight categories of actors have been identified: international cooperation, resource managers, politic policy etc. Thanks to the matrix notation systems, we have been able in a participative way to classify these eight categories of actors into four types: dominant actors, relay actors, autonomous actors and dominated actors. Thus, the MACTOR method allowed us to identify actors who played a role in the development of ecotourism projects in Tunisia and to be able to diagnose their balance of power. This allowed showing the multidisciplinary and complexity of the sector as well as the strong influence of certain actors such as international cooperation and public decision-makers. To conclude, the MACTOR analysis of the ecotourism actors in the protected area of Ichkeul and Cap Negro-Jbel Chitana enters into a methodology of prospective territorial analysis in this area to understand the points that caused the failure of several experiments.

Key words: ecotourism, territorial development, stakeholder analysis, strategies, protected area, Tunisia

Determinants of the scale of forest governance in community forests in East Cameroon

Authors: Rodrigue FAPA NANFACK; Nancy GÉLINAS; Kadiri Serge BOBO; Hugo ASSELIN; François HIOL HIOL

Abstract: In Cameroon, communities face numerous challenges related to governance, ownership and management of Community Forest (CF). While different actors have supported communities in the creation and management of these CFs, the determinants of good governance that could increase community ownership are being questioned. The present study was conducted from December 2017 to April 2018 in 12 CFs located in East Cameroon, where focus group discussions and one-on-one interviews were used to document the determinants of governance. The identification of the determinants led to the establishment of a scale and the positioning of the support actors under six levels. To achieve this, we first mapped the CF support actors. Thereafter, using community perceptions, the principles of good governance, namely participation, transparency, legitimacy, integration, capacity, adaptability, accountability and equity, were analyzed, allowing us on one hand to identify the determinants and on the other hand to analyze the role of support actors with respect to these principles. Our results showed that NGOs, authorities in charge of forest management, churches, high profile individuals, private forest operators and traditional leaders have directly influenced the creation of CFs. In the CFs where the creation was initiated by high profile individuals and private operators, a negative perception of governance was registered. The relational diagram of the determinants makes it possible to connect the communities and the supporting actors. It also highlights the determinants that should be enhanced and those that should be reduced to improve CF governance. Therefore, taking into account all the determinants of governance when creating a CF would make room for a positive shift in community perception on governance and enable the CF to reach the level of devolution.

Key words: Governance, community forests, local communities, East Cameroon

Challenges of coexistence between conservation and development of industrial plantations in the divisions of Nkam and Dja-et-Lobo in Cameroon

Authors: Sonkoue Watio Michelle; Fongang Fouepe Guillaume Hensel; Kana Jean R

Abstract: This article analyses the challenges of coexistence between two types of land use, including industrial plantations and conservation, based on the analysis of the interplay of actors in the land acquisition process. Surveys by means of (interview guide and questionnaire) with 207 people (riparian populations, managers of sector administrations and NGOs, representatives of the private sector) made it possible to collect data on land access mechanisms and associated impacts. The GPS has made it possible to collect data on an area of 64 km² in the vicinity of the Dja Wildlife Reserve in the division of Dja-et-Lobo and the proposed EBO park in Nkam. GPS points are used to mark the boundary and to indicate the presence of high conservation values on allocated or farmed land concessions. The data were subject to thematic analysis and statistical analysis (descriptive statistics). The hypothesis of this research is that the conversion of forested land to industrial agriculture around conservation areas results from the fact that land use is not negotiated, harmonized and standardized by co-existing texts and social norms. The study notes that stakeholders access land differently depending on the opportunities that arise, which contributes to biodiversity loss. The advisory commission that reviews land concession applications has no representatives from the sectorial administrations in charge of the environment and forestry and therefore has very little information on the biodiversity of the land sought. The lack of a buffer zone threshold between a conservation area and the development of industrial crops increases the risk of deforestation near conservation areas. The study recommends harmonization and transparency of the land acquisition process.

Key words: Conservation, forest lands, land concessions, industrial plantations

Session 13: Livelihoods and non-timber forest products

Households livelihoods and deforestation in the Tridom Transboundary Conservation: A spatial analysis

Authors: Jonas NGOUHOVO POUFOUN; Sabine CHAUPAIN-GUILLOT; Philippe Delacotea

Abstract: This paper aims to examine the determinants of household' deforestation in the Tridom tansboundary conservation landscape (Tridom-TCL). It investigates the role of households' livelihoods strategies. It also tests the effects of crop damage caused by elephants (human-elephant conflict) on the households' decision of deforestation, using a unique dataset gathered with 1035 households in the Tridom-TCL. The results of the spatial autoregressive model show that: (1) households tend to imitate deforestation decisions of their neighbors. (2) When accounting cash crops as part of a diversification livelihoods' strategy, households' deforestation increases significantly with a significant indirect impact on neighboring households' deforestation. In fact, a one-unit increase in the income of households that include cash crops in their portfolio, leads to six to seven times increases in households' deforestation compared to the effect of income increase in households choosing other livelihoods' strategies. Also, (3) the indirect effects of these choices on neighboring households' deforestation have almost the same magnitude as the direct impact resulting from other strategies. (4) We find no substitutability between leisure and work in land use choices. Indeed, the Pygmies, who constitute the principal labour with low cost, are employed in activities related to larger deforestation, while household labour duration does not significantly drive households' deforestation. The share of households' self-consumption is associated with a low deforestation, therefore, a bigger integration of the market can lead to increased deforestation, if practices remained unchanged.

Key words: Small-scale farming, Forest-based livelihood, Landscape approach, Deforestation, Spatial Spillover Effects, Neighborhood Peer Effects

Traditional institutions and management of forest resources in the Democratic Republic of Congo: case study of Bosukulu 1, riparian village of the Biosphere reserve of Yangambi

Authors: Eliezer Majambu

Abstract: The forest of the Democratic Republic of Congo is of high concern in current climate debates. Besides the fact of being a rich reservoir in biodiversity, it constitutes a habitat for many people that depends on its numerous services. The literature on forest resources management by the traditional institutions (the customary chief, the lineages and families) in Africa is provided sufficiently. While it's observed that traditional institutions didn't give the example of efficient management of forest resources, it is possible to strengthen the capacity of these institutions in order to reverse the tendency. For that purpose, we are interested in this paper by the case of surveys of Bosukulu 1, a riparian village of the Biosphere Reserve of Yangambi in Democratic Republic of Congo. To lead these surveys, the systemic approach will be used in order to explain data that will be collected using the participative cartography, survey questionnaires (constituted of mixed questions) and the focal group of discussion. The present survey relies on two hypotheses: 1) the traditional institutions don't manage the forest resources efficiently insofar as the interests of the users are not always compatible; 2) the users of resources, take advantage of the weakness of the traditional institutions that, without having means of constraint and to make respect the rules of use, to spread their rights of very use beyond their customary space. Our contribution consists in demarcating the way to the possible participative management. The interest is that, as soon as the way of management of the forest resources by traditional institutions will be known, taken in the forest public policies, the recurrent conflicts bound to the access and to the use of resources, the loss of forests cover as well as for the biodiversity will be reduced.

Key words: traditional institutions; management of the forest resources; Biosphere Reserve of Yangambi; Democratic Republic of Congo

Local forest governance and non-timber forest products in developing contexts: a case study of Sahatsiho-Ambohimanjaka and Vohidahy, Ambositra in Madagascar

Authors: RAKOTOARIVELO Malalaniaina Miora; RAZAFINDRAJONA Jean Marie

Abstract: After Rio Earth Summit, and like many countries in the world, environmental policies have been improved in Madagascar with a clear willingness to involve local population. This period corresponds to the initiative of decentralization which had brought to the implementation of Contractual Forest Management in 2001. This policy aims to regulate the use of forest goods and services like non timber forest products in order to reach sustainability. Population which have been used to an open –access seems actually to be private of their right to use forest. The objective of this study is to monitor how far the implementation of Contractual Forest Management have affected the link between communities-based and non-timber forest products; in two areas located in the District of Ambositra, Madagascar which are Vohidahy and Sahatsiho-Ambohimanjaka. Two evergreen natural forests belong to these localities: rainforest in Vohidahy and endemic tapia woodland in Sahatsiho-Ambohimanjaka. Communities-based surveys and forest inventory are methods chosen for this study. Results point out, in the one hand that non-timber forest products play a major role in the everyday life of the population since it provides foods and income. Data allow to knowing also some coveted products such as peppermint in Vohidahy and wild silk moth in Sahatsiho-Ambohimanjaka. In the other hand, non-timber forest products picking are under many regulations: the access is free for the member of community-based and with tax payment for those who are not officially member. This brings to illegal practice inside the natural forest and conflicts among actors that could threat sustainability.

Key words: Vohidahy, Sahatsiho-Ambohimanjaka, non-timber forest products, Contractual Forest Management, forest governance

Divergent policy and practice; Governing NTFPs in Cameroon

Authors: Verina INGRAM; Abdon AWONO

Abstract: NTFPs in Cameroon have multiple uses – providing food, fiber, fuel, medicine, tools and cash income. They form the basis of complex local, national and international value chains, with Cameroon being a major Central African exporter of NTFPs. Growing local and international demand has led to concerns of overexploitation of wild stocks of many NTFP species, such as *Gnetum* spp, *Prunus africana*, *Irvingia* spp, and *Baillonella toxisperma*. This has led to their governance by national regulations, regional policies, the IUCN Red List and CITES trade restrictions. Despite increasing knowledge of the state of resources, the value of NTFP consumption and trade, and new regulations and policies, in practice the impacts of current governance arrangements diverge significantly from intentions and aims. Further challenges include climate change, forest degradation and deforestation, conflicting, unconnected development policies, trade informality and corruption, and changing cultural practices which threaten both NTFP species and the value chains based on these products. This paper provides a synthesis of the different policy and governance responses by stakeholders in NTFP value chains to these challenges and their consequences. A literature review, interviews and policy analysis are used to investigate responses such as the development of national management plans, inventories of wild and planted trees, the development of nurseries and planting, genetic analysis, harvesting guidelines, voluntary market-based certification and national, regional and international trade regulations. Given these findings, the actuality of the endangered status of some high value NTFPs is assessed and the effectiveness of these different governance arrangements for more sustainable international trade, species conservation and livelihoods are explored. Evidence suggests that legislation alone is not successful, and a more targeted regulation and effective combination of multi-level customary, international agreements, and market-based voluntary value chain arrangements is essential to ensure the survival of NTFP species and their continued trade.

Key words: Non-timber forest product, trade, value chains, governance, policy

Session 14: Institutions and forest regulation

Examining the Jurisdictional Landscape Approach and Its Implications for African Palm Oil Industry

Authors: Chih-Ching Lan and Michael Faure

Abstract: The jurisdictional landscape approach has in recent years emerged in South East Asia and Latin America as a response to the multifaceted characteristics of the palm oil governance regime complex. The jurisdictional approach is distinguished by a collaboration between government, companies and other stakeholders in a given political sub-national administrative boundary. In particular, it emphasizes the involvement of formal governance frameworks so to address the limitations in private sector's sustainability commitments. Hence the jurisdictional approach is in fact an integrated governance model that uses multiple policy instruments to address the environmental degradation caused by palm oil production. Currently, this approach is being exemplified in several provinces in Indonesia, such as Central Kalimantan, South Sumatra and the State of Mato Grosso in Brazil. This paper aims to examine the buy-in mechanisms and incentives associated with this jurisdictional approach and its implications in African palm oil industry. The paper comprises of two main parts: a theoretical analysis and a normative discussion based on the current African policy environment. The first half analysis following the seminal work on Smart Regulation (by Gunningham/Grabosky), together with a law and economic approach, we analyse the incentives and forces to participate in a jurisdictional programme behind four main groups of actors in the palm oil value chain: a) sub-national public authorities and local producers; b) multinational palm oil conglomerates; c) environmental non-profit organizations and d) international public initiatives and importing countries. Subsequently in the second half, we then look into the possible implications of the jurisdictional approach in the African palm oil industry and draw conclusions on the relative effectiveness of the jurisdictional approach in promoting sustainable palm oil production. In addition, we show how the jurisdictional approach can be used to promote a smart mix of different instruments aiming at sustainable palm oil production.

Key words: palm oil, tropical deforestation, policy mix, jurisdictional approach, African agricultural commodities

Socio-economic Benefits and challenges to Certification in Cameroon: An Assessment of Eighteen local communities in Manyu division, South West Region of Cameroon

Authors: Nghobuoche Frankline

Abstract: Certification is a viable approach in sustainable management of the forest. It is a fundamental process that permits an effective evaluation of logging concessions in the world and Cameroon in particular. The objective of this study is to investigate the socio-economic benefits and challenges of forest certification in Cameroon. Using three concessions in Manyu division South West Region of Cameroon, this paper examines the socio-economic benefits and barriers of forest certification on adjacent. Specifically, the paper identifies the benefits of forest certification to be the creation of employment for local people, construction and maintenance of roads and bridges, construction of local electrifications schemes, construction of classrooms, the supply of hospital beds to some hospitals, financing community hall projects, funding of water catchment points as well as the funding of agricultural improvement and transformation schemes. Of the total respondents that took part in the survey, more than 75 per cent stated that forest certification contributes to the development of the village. The challenges to forest certification on the part of the local communities were identified. The calculated chi-square value indicated that more than 99.99 percent of the respondents were of the view that there is destruction of crops, degradation of roads, risks of accidents and limited access into the FMU Recommendations were proposed for more effective forest management of the forest sector in the region.

Key words: Forest Certification, Local communities, Socio-Economic Benefits and Challenges, Manyu division, Cameroon

Official recognition of FSC National Standard as FLEGT-compliant in Cameroon: what impact on the market and on forest management?

Authors: Mathieu Auger-Schwartzenberg; John Hontelez; Fonvinyuh Gordian Fanso

Abstract: In response to widespread illegal timber extraction and trade, the EU has set up the FLEGT (Forest Law Enforcement, Governance and Trade) Action Plan to prevent illegal logging by strengthening legal (and sustainable) forest management, in particular by improving governance and control in tropical exporting countries. Being Africa's largest exporter of tropical hardwood to the EU, Cameroon can play a key role in implementing the objectives of FLEGT, while increasing the real benefits of the forest sector for its own forest people and its economy. Cameroon and the EU ratified a Voluntary Partnership Agreement in 2011, aiming to ensure the conditions for FLEGT-licensed exports, a guarantee of legal origin. As part of its preparatory work, Cameroon became the first country in the world to officially recognize, in January 2016, Forest Stewardship Council (FSC) forest management (FM) standard for Cameroon as "FLEGT-compliant". This recognition is an important step as it can facilitate forestry companies' compliance with EU legality requirements and to access its market. We will discuss the potential impacts of this recent advancement both in terms of market access and forest management, with a focus on Cameroon and with an outlook to developments in other countries.

Key words: markets, FLEGT, FSC certification

Session 15: International forest governance initiatives

An overview of how the international REDD+ policy is transferring in Central African States

Authors: Samuel Assembe-Mvondo and Richard Eba'a Atyi

Abstract: This article examines dynamics in the introduction/adoption of REDD+ international regime among ten member countries of COMIFAC (Commission des Forêts de l'Afrique Centrale). To understand to which degree the intended aims of REDD+ are translated into national policies (or not) in the different countries, and to identify conditions that hamper this. We apply a 'policy transfer' theory framework. Our findings indicate that: elements of the transfer (institutions, ideologies, content and programmes) are underway; types of externally driven transfer (DR Congo, Cameroon, Congo, Central African Republic) contrast with State willingness (Gabon, Equatorial Guinea, Chad, Burundi, Rwanda, Sao Tome and Principe); multi-actor REDD+ agents (state and non-state) motivated by a quest for green rent (carbon market) at the expense of increasing carbon stocks. However, these moves towards ownership of the REDD+ regime might be hampered by both poor democratic governance that characterizes the States of this geopolitical sphere and macroeconomic policies that are hardly compatible with REDD+ regime. Thus, the expected impacts of the overall REDD+ regime on sectoral policies and practices might be lower in each of the States of this sub-region.

Using Multi Criteria Evaluation in forest resource management: an elaboration of a decision map of the transboundary conservation area between Cameroon and Nigeria

Authors: Nodem F R.; Ngoufo R.; Etouna

Abstract: The use of spatial multicriteria decision system is an efficient approach in identifying factors of deforestation. The use of multiple criteria and rank factors are well known as this enable a critical observation towards elaborating a spatial maps and identification of vulnerable areas in ecological zones. The transboundary conservation area between Cameroon and Nigeria represented by the national parks of Takamanda and Cross gradually facing degradation and deforestation was subjected to multicriteria analysis. The study aims to elaborate a decision map/management plan based on the identification of critical factors threatening the survival of forest resources in the transnational conservation area. The main method is based on Geospatial analysis and specifically multi criteria evaluation through the weighted overlay procedure. ASTER-DEM and Google Earth images also allowed complete the land cover mapping using cartographic analysis in ArcGIS 10.2 Environment. This approach enabled the identification of three hotspots of deforestation. These deforested zones are located respectively in the southern part (i) of the protected areas, it is where banana and cocoa plantations are found. Forestry pathways and local enclaves are in the centre (ii) and tourism settlements in the northern (iii) part. Having identified the starting areas and factors of deforestation, the decision map towards the management and forest and carbon stock enhancement in the transboundary conservation area between Cameroon and Nigeria was conceived. This map includes three main areas classified as A, B and C indicating the high; medium and low priority in any afforestation program. The elaborated forest management plan or decision map represents a tool in Land Use, Land Cover Change analysis and management. Key words: Multi criteria evaluation, Decision map, management, transboundary area, Cameroon and Nigeria

About remunerations and rewards for avoided or reduced deforestation: REDD+ story telling in Central Africa

Authors: Richard Sufo Kankeu; Moise Tsayem Demaze; Denis Jean Sonwa; Minette Nago Zeufack

Abstract: REDD + that aimed at reducing greenhouse gas emissions from deforestation and forest degradation, and increase carbon stocks was designed and promoted in the framework of the conferences of the parties, and in the context of multilateral programs such as those of the World Bank, as a mechanism for remuneration or financial rewards to developing countries that would avoid or succeed to reduce a measured amount of deforestation. This rhetoric, quite close to the "economy of the promise", has been popularized by international standards which, in the absence of "regulatory markets", have brought out "voluntary markets" for forest carbon. The craze for REDD + in developing countries has been based fundamentally on this promise. In Central Africa, REDD + pilot projects and initiatives have been spreading over the last decade under the guiding principles of carbon accounting standards, which sought to demonstrate the feasibility and reality of remuneration or rewards by merit, for example depending on the amount of avoided or reduced deforestation. Where are we now? Are the promises kept? Are remunerations or rewards actually paid for reducing or avoiding deforestation? Beyond factual answers to these questions, it seems useful, from a reflective point of view, to retrospectively analyze the discourse springs that accompanied the emergence of REDD + and its inscription in a "payments" or rewards vision based on results. For that, we mobilize the concept "storytelling", especially developed in communication sciences and marketing. We use it to analyze the storytelling of REDD+ projects and initiatives in Central Africa. Our analysis focuses on 11 projects that have been implemented in the Democratic Republic of Congo, the Republic of Congo, Cameroon and Rwanda, with the approval of five standards: Gold Standard, Verified Carbon Standard, Carbon Community and Biodiversity Standard, Plan Vivo and REDD + Social and Environmental Standard. The examination of official documents (project idea notes, project design documents, annual reports) and their confrontation with the field observations reveal a gap between the promises and the reality, which makes it possible to underline the elements of language which explain in some way the effectiveness of the narrative discourse that accompanied the implementation of REDD + in Central Africa.

Key words: REDD+, storytelling, economy of the promise, discourse analysis, carbon standards and labels

Posters

The Sacred Woods as World Public Goods: analysis of the Bamiléké context

Authors: Samuel Eric Kamgang and Esoh Elame

Abstract: Nearly 1336 sacred forests covering an area of about 47 000 ha were listed in the Western, North-West, South-West, Adamawa, Northern and Far North Regions of Cameroon, of which about 413 covering an area of 1330 ha is found in the Western Region predominantly occupied by Bamileke. These centuries-old sacred woods, have been hitherto: maintained by the system of local beliefs now undermined by a weakening of these belief systems within societies relegated nowadays to the mere rank of superstitions. Other problems in the sacred woods include land pressure due to galloping population growth and the non-inclusion of sacred woods and sacred forests in forest and land codes. Yet, these sacred woods are of paramount importance to local communities in the sense that, they are an important instrument of the cultural expression of the Bamileke people and provide them with a set of ecosystem services. These sacred Woods can be regarded as global public goods (BPM), in the sense that they deserve to make the world's cultural heritage: they contribute to environmental security and to the consolidation of international peace. This contribution through a study of the reality Bamileke of Cameroon, tries to show how sacred woods can be part of international political ecology as a means of preserving natural resources, fighting Climate change and deforestation. The research methodology used here is the participant observation and the literature review. The expected result is the highlighting of the natural and cultural richness of the sacred woods and its contribution to climate change in the Cameroonian context.

Key words: Sacred wood; Global public goods; World Cultural heritage; Ecosystem Services; International political ecology; Climate change; Bamileke

In search of forest governance index in Central Africa. Improving forest governance in the light of the fragility and resilience of COMIFAC countries (2015-2025)

Authors: Alain Parfait NGULUNGU

Abstract: In order to promote the Convergence Plan (2015-2025), developed following a validated review process in July 2014, this paper attempts to support the establishment of a forest governance index to ensure monitoring the implementation of the convergence plan. Preceded by a review of the fragility of States¹ and the resilience of States of the sub-region in the forest / environment sector², this analysis aims at establishing a methodology based on the coherent and effective principles and criteria of the forest governance. Thus, this presentation will be subdivided into three main parts. The first establishes a socio-genesis of the convergence plan (2005-2014), which is hampered by the socio-economic shortcomings, constraints and challenges of the sub-region. The second part presents the mapping of fragility and state resilience in the forest and environment sector in Central Africa. The last one tries to build a methodology detailing the principles, criteria and indicators of the forest governance index to monitor the implementation of the COMIFAC Convergence Plan by 2025.

Key words: Forest governance; Fragility; Resilience; COMIFAC; Index

Comparative effects of trees outside forests on mycorrhizal fungi diversity and soil fertility in the Yangambi region in the Democratic Republic of the Congo

Authors: Hermane Diesse

Abstract: Population growth has caused the fallow period in the forested areas of many tropical countries across the globe to be shortened significantly, from about 10-20 years to less than 5 years. This has direct consequences on soil fertility, which in many cases cannot be restored. Similar negative impacts, although not yet well documented, can be observed in the Democratic Republic of the Congo (RDC), notably in the Yangambi Biosphere Reserve (YBR) and its surroundings, located in the eastern part of the country and the focus of this research. As agriculture is typically extensive, forest fragmentation is high across the entire YBR. Available literature and recent satellite imagery reveal that active fields are exploited by farmers even inside the core area of the YBR, exposing the land to degradation and ultimately putting the sustainable management of the YBR at risk. Yet farmers leave some trees in the field, after the opening of a new planted area, which are expected to have positive effects on the agricultural production by improving soil fertility and providing a micro climate conducive to the growth of certain crops. However, most studies on trees outside the forest are oriented to their influences on future fallow. Few studies have addressed their effects on soil fertility. This study addresses the impact of fallow and field trees on soil fertility and the diversity of the mycorrhizal population that is needed to support it. In a context of degradation of the natural resources of the YBR, this study contributes to the knowledge of the effect of 'orphan' trees and of mycorrhizal diversity on soil fertility. We conclude with suggestions on the identification of local trees that can be part of improved future fallow and agroforestry programs.

Key words: Fallow; orphan trees in the forest; soil fertility; mycorrhizae; Yangambi Biosphere Reserve; Democratic Republic of the Congo

The dynamics of fuelwood consumption and supply by micro-enterprises in the Yangambi Biosphere Reserve, DRC

Authors: Sagesse Nziavake

Abstract: In many developing countries, fuelwood (charcoal, firewood) is the main source of energy used for both domestic and semi-industrial purposes. Fuelwood production related to slash-and-burn agriculture is the leading cause of deforestation and forest degradation in Central Africa, specifically in the DRC. Protected areas play a role in reducing forest degradation and deforestation. However, the advantages that local population, including private businesses, could gain from protected areas largely depend on the latter's management and governance conditions. In the Biosphere Reserve of Yangambi, DRC, almost all micro-enterprises (less than 5 employees), use fuelwood in their production process (e.g. ethyl alcohol manufacturer). Data indicate that the number of these enterprises has been growing a lot in recent years in order to fill the local demand for food. As a direct consequence, forest degradation and deforestation have also been increasing. This manuscript thus characterizes and assesses the micro-enterprises' consumption of fuelwood, in order to better understand and tackle problems relating to the forest degradation in the Biosphere Reserve of Yangambi. Functional, analytical and statistical method associated with the documentary review and interview (through a survey using a questionnaire) are used. Preliminary results indicate that the micro-enterprises dimension occupies an important part of the fuelwood value chain, with direct impacts on the sustainable management of protected areas. Both technical and policy measures are suggested which could help improve the production and consumption of fuelwood by micro-enterprises and thus reduce negative impacts on the surrounding protected area.

Key words: wood energy, consumption, sustainable management, protected areas, micro-enterprises, biosphere reserve, climate change, Democratic Republic of Congo

Interactions between people and chimpanzee (*Pan troglodytes ellioti* Matschie 1914) in the Mbam and Djerem National Park, Cameroon

Authors: Alexis Serge Kamgang

Abstract: The Mbam and Djerem National Park (MDNP), is located between 5 ° 30 ' and 6 ° 13' of the North latitudes and 12 ° 13 ' and 13 ° 10 ' of the east longitudes. It covers about 416,512 hectares and shelters the Nigeria-Cameroon chimpanzee (*Pan troglodytes ellioti*) the most endangered of all currently recognized chimpanzee subspecies, with a total remaining population of between 3,500 and 9,000 individuals. Close to 30,000 people live in the periphery of the MDNP and depend on the Park resources for subsistence. The proximity between people and wildlife results in different levels of interactions. We investigated the extent of, and factors leading to, these interactions through survey and individual interviews in 30% of villages around MDNP. Conservation concerns in the PNMD were reported by 94.73% of respondents. Access to resources (78.9%), crop damage (10.5%) and animal attack (7.9%) are the main source of conflicts. Grasscutters *Thryonomys swinderianus* (59.7%), Grey-cheeked mongabey *Lophocebus aligena* (20.2%), chimpanzees *Pan troglodytes ellioti* (7.3%) and baboons *Papio anubis* (5.6%) were identified as the main conflict animals while the destroyed crops included peanuts (70.2%), maize (15%) and cassava (5%). The conflict trends is constant and the perceptions level of people differs between sectors and is significantly influenced by education, main activity, level of income, religion and tribes. The position of the village, the distance of the farm to the Park and the involvement of population to the management of the Park also influenced conflict intensity. Our findings suggest that improvement of income generating activities and education will reduce conservation concerns and contribute to strengthen conservation of these threatened apes.

Keywords: Mbam and Djerem National Park, people-chimpanzee interactions, Nigéria-Cameroon chimpanzee, conservation concerns, threatened apes

Communal Forestry faced with diffuse and diffracted local demand: the experience of the Ngog-Mapubi / Dibang Intercouncil Forest Initiative in Cameroon

Authors: Roger NGOUFO

Abstract: The general objective of Cameroon's forest policy is to sustain the economic, ecological and social functions of forests. One of the tools implemented by the government to achieve this goal is communal forestry. The communal forest refers to the forestry law n ° 94-01 of January 20, 1994 and the laws on decentralization which lay down the rules applicable to the local councils in particular the transfer of the competence on timber operations (art 16, law n ° 2004/018). The slow deployment of the decentralization process in Cameroon goes hand in hand with the suspicion of lack or weakness of the capacities of decentralized local authorities. Starting from the hypothesis that presupposes this weakness, the actions conducted within a specific project of capacity building of two local communities are analyzed. This project is entitled "Support for the preservation and decentralized management of the resources of a forest in the councils of Ngog-mapubi and Dibang. It aims at providing support to municipalities and communities for the creation of an inter-communal forest in the region of Central Cameroon. To do this, the project facilitated the establishment of multipartite partnership agreements, enabling the identification of a three-block site. The process aiming at converting the area into a permanent forest domain has been initiated; local actors have benefited from various training programs (regeneration of a non-timber forest product, ecotourism, monitoring of logging). Targeted pilot tourism developments were carried out on two selected tourist circuits. But it appears from the evaluation that, although local actors are positively impacted, egocentric behaviors contribute to fragmenting and diffracting the demand for capacity building that can even be expressed in the opposite direction of sustainable management. Built on the essentially complex and diffuse nature of local demand, new opportunities are still explored, especially those more related to REDD +.

Evolution of the Legal Framework and Institutionalization of the Sustainable Forest Management in Central Africa: what impacts on Improving Rural Communities' Rights in Cameroon

Authors: Patrice KAMKUIMO; Eric Parfait ESSOMBA; Ranèce NDJEUDJA; Eric ETOGA

Abstract: The concept of Sustainable Forest Management (SFM) has gradually become integrated at the legal and institutional level in the Congo Basin countries generally and in Cameroon in particular, with a significant boost following the 1992 Rio Conference. This growing inclusion of human rights in the legal and institutional framework of Sustainable Forest Management in Central Africa is expected to strongly influence the effective consideration of forest-dependent communities' rights in Cameroon. This paper provides a review of legal instruments and institutions which promote SFM at the sub-regional and national levels, and analyzes the induced level of recognition and effective protection of forest communities' rights in Cameroon. As a result, despite a significant proclamation and establishment of SFM concept by regional and national institutions and into various legal instruments ratified/signed by Cameroon, the impact on effective enjoyment of their substantive and procedural rights by forest communities remains insufficient. Indeed, although some improvements have been recorded in procedural rights, very little progress has been made on substantive rights.

Resilience to Environmental Challenges and the National Disaster Insurance Programme in Kenya

Authors: Christophe Dongmo

Abstract: Ethiopia's economy and ecological system are fragile and vulnerable to climate change. The country's key poverty-environment linkages are related to soil degradation, deforestation, loss of biodiversity and ecosystem services, land, air and water pollution, environmental health concerns due to malnutrition, pollution, environmental migrations, vulnerability to natural disasters, lack of secured land and unreliable access to food and water. At the outset, Ethiopian economy is highly dependent on natural resources, whose exploitation may generate large economic benefits. However, their unsustainable use increases environmental degradation and decreases economic growth and livelihood opportunities. Over the last decades, Ethiopia has put in place a number of laws, strategies, and policies frameworks to support sustainable development and green economy. In 2006, with the support of donor agencies, the country implemented its first index-based national disaster insurance programme. The scheme targeted 5 million transiently food-insecure people, who, due to drought and climate change, faced food insecurity and hunger. This target group threatened to become chronically food-insecure if they did not receive timely support during drought conditions, as they could be forced to resort to negative coping strategies such as forced migrations, violence or the sale of productive assets. These populations were also beneficiaries of the Productive Safety Net Programme. Building on the 2006 experience, development stakeholders further expanded the concept in 2007 by designing a comprehensive drought risk management framework that included risk financing. Using theoretical, analytical and quantitative survey methods, this essay shows that changing climate patterns are undermining Kenya's resilience of poorer communities; and that the lack of functioning safety nets to help the country absorb loss and recover from environmental challenges could lead to populations adopting negative coping strategies that aggravate vulnerability to climate risk exposure. The paper argues that, through the release of adequate funds to vulnerable groups in Kenya, drought index insurance was of great importance and made the Productive Safety Net Programme effective and manageable in the country. Referring to prospective policy and strategy measures, the paper reveals the prevailing gaps between the environmental commitments made and the actual implementation to improve development outcomes. Weak capacity in environmental management and enforcement are in striking deficits. Indeed, Kenya's growing population requires more fuel wood and more agricultural production, which increases demands for new farmland, accelerates deforestation and forest degradation. It is estimated that, unless action is taken to change the traditional development path, an area of 9 million hectares might be deforested between 2010 and 2030. Over the same period, annual fuel wood consumption will rise by 65% with large effects on Kenya's forest degradation. In the end, it is contended that Ethiopia still faces deficits in terms of corruption, strategic and operational planning in the forestry sector, lack of human and financial capacity, green technology and know-how. Indeed, environmental governance needs to be improved at all levels. Weak capacity in environmental management, insufficient law enforcement and monitoring are shortcomings that need to be addressed in order to meet MDG targets (especially MDG 7 on environmental sustainability) to move the country towards green growth.

Keywords: Kenya, Climate Change, Assets Safety Nets, Disaster Insurance, Green Economy

Tragedies and hopes in the governance of protected areas in Côte d'Ivoire

Authors: KOUASSI Kouame Sylvestre

Abstract: This contribution aims to analyze how the fragmentation and marginalization of public action in the field of nature preservation in a context of development and agricultural plantation economy can lead to contrasting environmental and socio-economic effects on a national scale. On the empirical level, our contribution deciphers the evolution and biodiversity preservation dynamics of two symbolic protected areas of Côte d'Ivoire: the Marahoue Park, the only preservation unit in the Ivorian network made up of forest and Savannah ecosystems which was created in 1968 (about 110, 000 hectares); and the Taï National Park, the largest protected area of West Africa made of primary forest and covering an area of about 454,000 hectares, was established in 1972. Based on both a historical sociology and a territorial prospective approach, our research has shown that the tragedy of the Marahoue Park (a strong destruction of its biodiversity, conversion of land into agricultural areas, the migrant versus indigenous social conflicts, etc.) is closely linked to the laxness and carelessness of the Ivorian authorities. In contrast, the exceptional level of preservation of the Taï National Park (biodiversity almost intact, low rate of agricultural plantations in the park, peaceful social relations around the park, etc.) is based on a policy of strict preservation of this park by the managers of protected areas supported by various international financial partners. This situation is particularly paradoxical, given the geographical location of the Taï Park (in the southwestern region of Côte d'Ivoire) known as the country's last largest cocoa producing area with about a quarter of the national production.

Key words: Côte d'Ivoire, preservation, public policy, governance, prospective

The transformation of community forest to community forest enterprises in Cameroon Process, opportunities and challenges

Authors: Foundjem-Tita D.; Minang A.P.; Piabuo S.M.; Duguma L.; Degrande A.

Abstract: This paper seeks to analyse the process, opportunities and challenges of transforming community forests (CFs) in Cameroon to community forest enterprises (CFEs) where by the community forest observes gradual transformation from a social entity to a viable social enterprise. The facts and thoughts reported are based on lessons learned from reviewing past projects and programs, accumulated knowledge of the authors and current involvement in a pilot project on financing sustainable community forest enterprises in the country. The paper explains that inertia persists in the community forestry sector because of the initial conceptualisation of the model, and poor interaction amongst stakeholders to address gaps in its design, such as the appropriate legal status of the community-based entity to manage such a forest, high operational and transaction costs to create a community forest, lack of visibility of the social enterprise dimension of the CF and other equity concerns. The analysis then reviews past projects in the CF sector from a donor, project, and intervention perspective, outlining specific issues, such as support to rural communities in the creation and management of community forests, technical assistance to enterprise development, financial and material support and finally, support to improve the legal and institutional contexts of CF. Finally, we look at the operational implications of setting-up and running community forest enterprises, bringing out salient differences between the latter and community-based forest enterprises, the social dimension of such enterprises and their implications for success, determining entry points, modes of channelling support and challenges faced by the start-ups, such as perceptions of what enterprises are, capacity to start and sustain the business and access to finance. The paper concludes that the CF in Cameroon would need an institutional overhaul in its design, structure and support mechanism for them to operate as veritable social enterprises.

Key words: small businesses, social and economic development, opportunities, challenges

Training to improve forest governance: programs for quality education of forestry actors

Authors: Martin Tchamba; Joseph Keutcheu; Vivien Meli

Abstract: The challenges of the increasing anthropisation of Central African forest massifs have inspired the academic world for a new space of reflection and practice that has highlighted not only the gradual emergence of a green economy that can lead to growth, but also the need for governance concerned with the sustainability of the ecosystems exploited. The mismatch between the requirements of good environmental governance and university training programs does not guarantee quality skills that can transform forest potential into real opportunities for growth and development. At the same time, the degradation of these important natural resources culminates with the rise of governance crises (corruption, illegal trade, illegal logging, etc.). Cameroon, in its will to fight illegal logging signed in October 2010 a VPA-FLEGT with the EU. The said Agreement was reinforced in December 2011. Unfortunately, until 2018, no FLEGT License / Authorization was issued. One of the reasons given for this failure is the lack of qualitative and quantitative human resources in the implementation of this VPA. Indeed, the current training offer does not meet the skills needs expected in the context of the implementation of the VPA and sustainable forest resources governance. It is precisely to fill this void that FAO and CIDT have pledged to support the University of Dschang in the development of three benchmark training programs in forest governance; Programs that could be extended later to the entire Central Africa sub-region. They include:

1. **A Program of Continuous Training** in forest governance for professionals already active in the forestry sector;
2. **An Initial Training Program** corresponding to a Master of Research in Forest Governance; and
3. **A transversal Training Program** open to different training profiles (social sciences and biological sciences).

The objective of participating in the international conference is to inform and sensitize the participants of the existence of such trainings which are also unique in Cameroon and in the Central African sub-region.

Side-events

Community Forests: Can Agroforestry bring profitability, sustainability and social equity? (ICRAF)

Organisers: World Agroforestry Centre (ICRAF)

Facilitator: Dr Ann Degrande, ICRAF Representative Central Africa

Presenter: Dr Divine Foundjem Tita, Scientist “Institutions, Markets and Policies”

Abstract: African forests face growing pressure due to forestland conversion, biodiversity loss, livelihood issues, demographic growth, wildfires, above- and underground resources exploitation, and bad governance.

Uniquely among countries in the Congo Basin, Cameroon has seen a dramatic expansion of community forest management. As of 2015, about 300 community forest associations existed covering over a million hectares of forest. Community Forest, instituted in Cameroon through legal reforms in 1994, is defined as *“that part of non-permanent forest estate (not more than 5000 ha) that is the object of an agreement between government and a community, in which communities undertake sustainable forest management for a period of 25 years renewable”*. Community Forest Enterprises (CFE), which are locally-controlled businesses recognized under Cameroonian law, provide a way to maintain local control of forest resources because they offer a livelihood alternative to selling or leasing control of those resources to an external agent. CFEs are expected to be a major vehicle for poverty reduction. Additionally, the environmental impact of CFEs is projected to be quite large – the amount of forest currently covered by about 300 community forests in Cameroon is roughly 1.2 million ha - a number that is likely to grow in the coming years. Despite this, research suggests that most community forests currently fall short when it comes to poverty alleviation and sustainable development. Direct and effective support that aims at enhancing the economic, environmental and social performance of these enterprises is thus required.

Agroforestry, defined as a *“a dynamic, ecologically based, natural resources management system that, through the integration of trees in farms and in the landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels”*, is being increasingly recognized as a useful approach to natural resource management, and is also expected to add value to community forestry.

We invite conference participants to share ideas and experiences about the contribution of agroforestry to sustainable forest management and discuss opportunities and challenges for local communities to adopt agroforestry as a sustainable natural resource management tool, as well as a livelihood option.

We envisage the side event as an opportunity for participants to brainstorm and develop ideas around:

- The role of agroforestry in biodiversity conservation;
- The role and potential of agroforestry to reduce deforestation;
- The role and potential of agroforestry in the restoration of degraded landscapes;
- The opportunities and challenges faced by local communities, including community forest groups, to develop and adopt agroforestry, community forestry and community-based forest enterprises, with emphasis on gender and vulnerable user groups.

Method: There will be a single presentation from ICRAF on the above topic, after which panellists will discuss and share experiences on the same. Then, participants will be able to contribute through a question/answers session and brainstorming.

Panelists: Panelists will come from a cross-section of actors in the domain of sustainable forest management in Cameroon and the Congo Basin; and will be chosen for their expertise and established authority in the subject matter. More specifically, we expect representatives from government institutions such as the Ministry of Forests and Fauna (MINFOF) and the Agence Nationale d'Appui au Développement Forestier (ANAFOR), civil society, more specifically representing women and minority forest user groups, as well as NGOs working in the domain of sustainable forest management and livelihoods improvement.

**OSFACO project -- Earth observation for monitoring forests in Central and Western Africa
Experiences and achievements of 5 case studies in Cameroon (IRD)**

Organizers: Benoit Mertens, French National Research Institute for Sustainable Development, IRD

Abstract: The OSFACO project aims to improve knowledge of past and current dynamics in terms of land use and land use change in several countries of Central and Western Africa, thanks to earth observation imagery. Building on previous capacity building projects, OSFACO will strengthen and expand local expertise and take-up of satellite imagery in the design, implementation and monitoring of public policies for sustainable land management.

The main activities include the provision of freely available recent high resolution SPOT6/7 satellite images, as well as SPOT archive (1986-2012), support for local production of land use and land use change maps and future regular updates, and capacity building and promotion of the use of satellite imagery in the design and monitoring of public policies (funding of call for projects).

The side-event will allow beneficiaries of the call for projects in Cameroon to present the main achievements of their 2-years work. The communications will address issues such as mangrove forest degradation, carbon stock estimation, monitoring of conservation areas or land use zoning for agricultural development:

Prospective analysis of the spatiotemporal dynamics of carbon stock in the Ngog-Mapubi-Dibang forest area (CEW);

Vegetation cover dynamics of the Mbam and Djerem National Park and its periphery (WCS);

Characterization and monitoring by remote sensing of mangroves of the Cameroonian Littoral (ENVI-REP- Cameroon)

Estimation of mangrove forest cover change and carbon stock assessment; a remote sensing approach in the Ndongere mangrove forest, Southwest, Cameroon (WWF)

Agricultural Zoning Support in the Central Administrative Region of Cameroon (GMEM)

Participatory development of a National Forest Policy and Programme: The case of Mozambique (Ministry of Land Environment and Rural Development, Mozambique)

Organizers: Bila, A.; Pereira, C.; Chicue, J.; Cristiano, A. J.; Pechisso, D. ; Issufo, A.; Vicente, P.

Abstract: Forty-one percent of Mozambique is covered in forest and more than 67% of the population are forest dependent rural households. Even in the urban population charcoal is the main source of energy for cooking and responsible for 7% of deforestation. Yet the timber industry, which contributes less than 1.5% of GDP and comprises only a few actors, usually supported by foreign direct investment, still maintains a privileged position in the legal and institutional framework of the sector. This political imbalance relegates important forest products, such as fuelwood, non-timber forest products and other forest services, almost to invisibility even though they are vital for rural households and hold the key to sustainable development in Mozambique.

Here we discuss the development of a new Forest Policy Programme currently being designed in Mozambique that seeks to change this paradigm. Forest policy and legal frameworks need also to be revised to accommodate new global trends for organic products and green economies, climate mitigation and landscapes approaches for land use. In addition, demographic trends, increasing mobilization of people and goods, digital technologies and better communication suggest a need for approaches that are coordinated at jurisdictional or regional scales.

The National Forest Program creates a much needed platform for integrating all aspects of the forest sector into an action plan within a shared long-term vision for sustainable development. Participatory processes, however, imply extra challenges in time and cost, as well as on maintaining interest and commitment from all actors through the formulation, implementation and monitoring process of Mozambican forest development.

Key words: *forest policy, national forest program, shared vision.*

Impacts of certification on forest management - how do we know what we know? (FSC)

Organizers: Mathieu Auger-Schwartzenberg and Marion Karmann, Forest Stewardship Council (FSC)

Abstract: With this session we invite researchers and practitioners to present and discuss their research design and methodology aiming to identify effects and outcomes of forest management certification on African natural and plantation forestry. We want to discuss impacts of certification interventions on forest ecology, on silviculture and management decisions, on economic effects for forest owners as well as on other socio-economic effects for any stakeholder.

Is life for workers employed in certified forests operations different than in not certified operations? And if so, is it for better, and is such a difference due to certification requirements? And what is forest managers' perspective: is the market more open and paying fair for certified products? Are certified operations more compliant with legal requirements than others? Are local communities empowered through consultation processes related to standard development and certification processes of adjacent operations? Are RIL practices employed in certified forest management operations, and if so, is this because of certification?

Objectives of the side-event:

Forest management certification is a complex process, and it is challenging to precisely evaluating how certification schemes impact those various dimensions. The objective of this session is to give the floor to researchers and practitioners familiar with African forest management, to discuss their most recent research and other practical challenges and findings, and to point out further research needs to evaluate environmental and socio-economic and other impacts of FM certification in Africa.

Format of the event:

Introduction of the session (10 min.)

- Welcoming word (Mathieu Auger-Schwartzenberg, FSC Congo Basin Programme)
- Setting the targets of the session (Dr. Marion Karmann, FSC International)

Panelist 1. Current research and findings of impact of forest certification in Africa and needs for further research, *Guillaume Lescuyer, CIFOR* (20 min)

Panelist 2. Measuring FSC's impact: Methods, challenges, robustness. *Verina INGRAM, African Studies Centre Leiden, Netherlands* (20 min.)

Panelist 3. The complexity of sustainability notion: reflections from crisis within FSC certified sector in Cameroon and the need for research to demonstrate the sustainability of current forest management plans, *Alain KARSENTY, CIRAD (France)*. (20 min)

Key Reflections from Richard Eba'a Atyi (CIFOR, Cameroon), and the panelists regarding the main outcomes of the discussion.

Facilitation: Mathieu Auger-Schwartzenberg.