Session Number: 3331

Session Title: Forest landscape management to create resilience in the face of climate change in West and Central Africa

Session Convener(s): Denis J. Sonwa (CIFOR, Yaounde, Cameroon), Deborah Goffner (CNRS, Marseille, France), Gilles Boetsch (CNRS, Dakar, Senegal); Guissé A. Aliou (Cheikh Anta Diop University, Dakar, Senegal)

Name of rapporteur: Denis J. Sonwa

Email of contact in case of questions (a convener or the rapporteur): d.sonwa@cgiar.org; deborah.goffner@gmail.com

1. What are the session key findings? What are the new Lesson(s) learned / Scientific progress (since AR5 release, if relevant)?

(Please specify the degree of certainty when appropriate)

Ecosystem-Based Adaptation (EBA) responses offer opportunities for livelihood diversification to address climate change risks. Promotion of natural land reforestation in the West Africa Sahel provides better diversification opportunity, less gender imbalance and more resilience to climate change compared to other options such as Eucalyptus plantation and fruit tree plantations (Developed as responses to adaptation to climate change as it was the case in Burkina-Faso).

As an example, the Great Green Wall for the Sahara and Sahel Initiative, a pan-African ecosystem restoration program, relies upon a set of multi-sectorial actions to achieve environmental and human well-being. Towards this end, ‘re-greening the Sahel’ is not only about tree planting, but involves other activities like community vegetable gardens, farmer-managed natural regeneration, bee-keeping, etc. and will rely on a landscape approach to achieve its objectives.

In the Humid forest zone of central Africa, responses to climate change is dominated by Mitigation activities. Climate is not seen as a risk factor and adaptation activities are not a priority for governments or the private sector. In national plans for responding to climate change, forest is not usually considered in political options.

This widespread complacency about climate change in the region is concerning because analyses show that new trends have been emerging over the past four decades. Between 1940 and 1970, rainfall was relatively constant and punctuated with only one significant low rainfall years. Since 1970, rainfall across the equatorial region has decreased and become more variable.
Rainfall decreases are primarily associated with the first rainy season of the year and the frequency of low rainfall years has increased significantly since 2000. Increased variability is associated with greater variability of rainfall during the second rainy season and in particular with. This poses challenges to economic activities that depend on seasonal rainfall.

2. **What are the major knowledge Gaps and Research Needs identified in the session?**

Need of more research on factors (Internal and external) affecting the climate of the Congo Basin. In addition, research is needed to understand the teleconnection between West and central Africa in relation to bigger initiative such as the Great Green Wall for the Sahel. Such teleconnection, if well understood, could help better formulate policies for the re-greening of the Sahel. Teleconnection research is also required to understand how variations in sea surface temperature can predict low and high rainfall probability for better adaptation. In Central Africa, the research needs are in term of understanding the evolution of precipitations during the months of March-April-May (MAM) and the livelihood impact in the Congo Basin.

Another important knowledge gap is related to how to consider time-scale need of each component (Adaptation and Mitigation) when planning synergy between Adaptation in Mitigation.

Finally, in West Africa Sahel, additional studies are also needed to understand the overall socio environmental impacts at the landscape level of restoration actions. For example, together with the full range of stakeholders, the Green Wall Human-Environment Observatory (CNRS “Observatoire Hommes-Milieux Tessékéré”), a 'research space' (France and Senegal) that joins together researchers focusing on the Green Wall from all scientific disciplines, is extremely well-suited for first identifying the most important knowledge gaps and then to subsequently perform the appropriate research to bridge these gaps. It functions on the concept of ‘One Health’ which is defined as "the collaborative effort of multiple disciplines — working locally, nationally, and globally — to attain optimal health for people, animals and the environment”.

3. **Did the session discuss/identify promising approaches in the fields of Adaptation and Mitigation, or both?**

In the perspective of EBA (Ecosystem Based Adaptation), strategy involving Forest land restoration appears as more resilient when compared to strategy involving eucalyptus trees plantations in the dry area as responses to climate change.

Re-greening of the Sahel with different activities was also presented during the session. Landscape approach appears as important response in these particular ecosystems. Local populations in the Sahel must be full partners in determining the best adaptation and mitigation strategies employed in future interventions.

Synergy between Adaptation and Mitigation appears as future potential to face climate change in the sub-Saharan Africa.
4. **Are there take-home messages from the session?**

(When relevant, please specify targeted group of stakeholders. For example, policy-makers / COP21 negotiators, practitioners (experts, etc.)/NGOs, private sector, citizens, media, etc.)

EBA (Ecosystem Based Adaptation) needs to give priority to natural forest land restoration because of its proven potential to increasing the adaptive capacity of communities and individuals, thus their resilience to climate change. Practitioners should help promote such adequate strategy in tackling climate change.

In Sub-Saharan Africa, integrated landscape approach that helps bringing together experts of different disciplines, sectors, and institutions is to be fostered in policies.

Responses to climate change in the Congo Basin need to go beyond mitigation and consider also adaptation and the synergy.

Preliminary research reveal slow reduction of precipitation in the Congo Basin with the last decade (2000-2012) characterized by inter-annual variation. Further researches are still needed to understand which part of seasonal cycle is more affected and the impact on livelihood of farmers.

5. **Are there Important Quotes from the session?**

The “Green Wall” is a unique opportunity (there is national and international political and financial backing) to provide solutions for an urgent Pan African (and even global) socio-ecological challenge. However in order for the “Green Wall” to be a game-changer in the region, it must (i) incorporate knowledge co-design involving more bottom-up communication from local to national political levels, ii) implement slower, research-based strategies aimed towards long term objectives that accompany fast track, top-down reforestation action, and iii) densify networks between research and development efforts (in a similar way as the CNRS Tessékéré Green Wall Observatory) (Deborah Goffner, CNRS).

In the Congo Basin, Long time-series are needed for climate trend analysis. The shorter period shown previously (2000-2014) shows decrease in vegetation indices and no consistent precipitation trend, whereas a longer time series show less significant vegetation trends, but better agreement with precipitation trends in the northern sector. (Louis Verchot, CIFOR)