

CHAPTER 6

FOREST AND CLIMATE CHANGE IN CENTRAL AFRICA: SYNERGY BETWEEN MITIGATION AND ADAPTATION

Richard Eba'a Atyi¹, Eugene Loh Chia¹, Félicien Kengoum¹, Alba Saray Pérez-Terán¹, Richard Sufo Kankeu¹

¹CIFOR

1.Introduction

The notion of designing and implementing climate change response policies and projects that produce simultaneous positive outcomes for mitigation and adaptation is gaining grounds in the national and international research and decision making agendas (Elias *et al.*, 2014). The Central African region is not left out in this growing quest for synergy between mitigation and adaptation. The IPCC (2007) mentions synergy as the “intersection of adaptation and mitigation so that their combined effect is greater than the sum effects if implemented separately”. Literally, synergy stands for “working together”, meaning that there is importance to look at processes and dimensions where opportunities can be identified for mitigation and adaptation to work together. In this case, two inter-relationships could emerge between mitigation and adaptation. Firstly, a relationship in which adaptation actions has consequences (+/-) for mitigation. And secondly, a relationship in which mitigation actions has consequences for adaptation (+/-). These two relationships indicate that there is always a need to minimize negative consequences and maximize positive consequences between mitigation and adaptation.

In the Congo Basin countries, there is urgency for both mitigation and adaptation. First, the forest ecosystems of the Congo Basin are pertinent for the global carbon balance through their huge carbon sequestration and storing potential. Second, the forests and forest dependent communities are vulnerable to climate change. In

this light the design and implementation of adaptation policies and projects cannot be avoided. Nonetheless, in the land use and forestry sectors, efforts to keep trees standing for carbon and the strategies to enable forests and communities to enhance their adaptive capacity might demand and compete for the same type of land use activities, and other institutional and governance arrangements and inputs. Thus, planning to design and use the same strategy and policy package for positive mitigation and adaptation outcomes is critical for the region.

Photo 6.1: Village or log-yard? In this case, the overlap in space does not allow the distinction



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Currently, it is important to note that the dynamics and evolution of synergy is being shaded by different terminologies in research and policy. Some of the terms include: integration between, links between, complementarity

between, harmonizing and combining, mitigation and adaptation. Generally, synergy has been stressed from different angles depending on the ecosystem, the sector and the policy agenda (Figure 6.1) (Illman *et al.*, 2013).

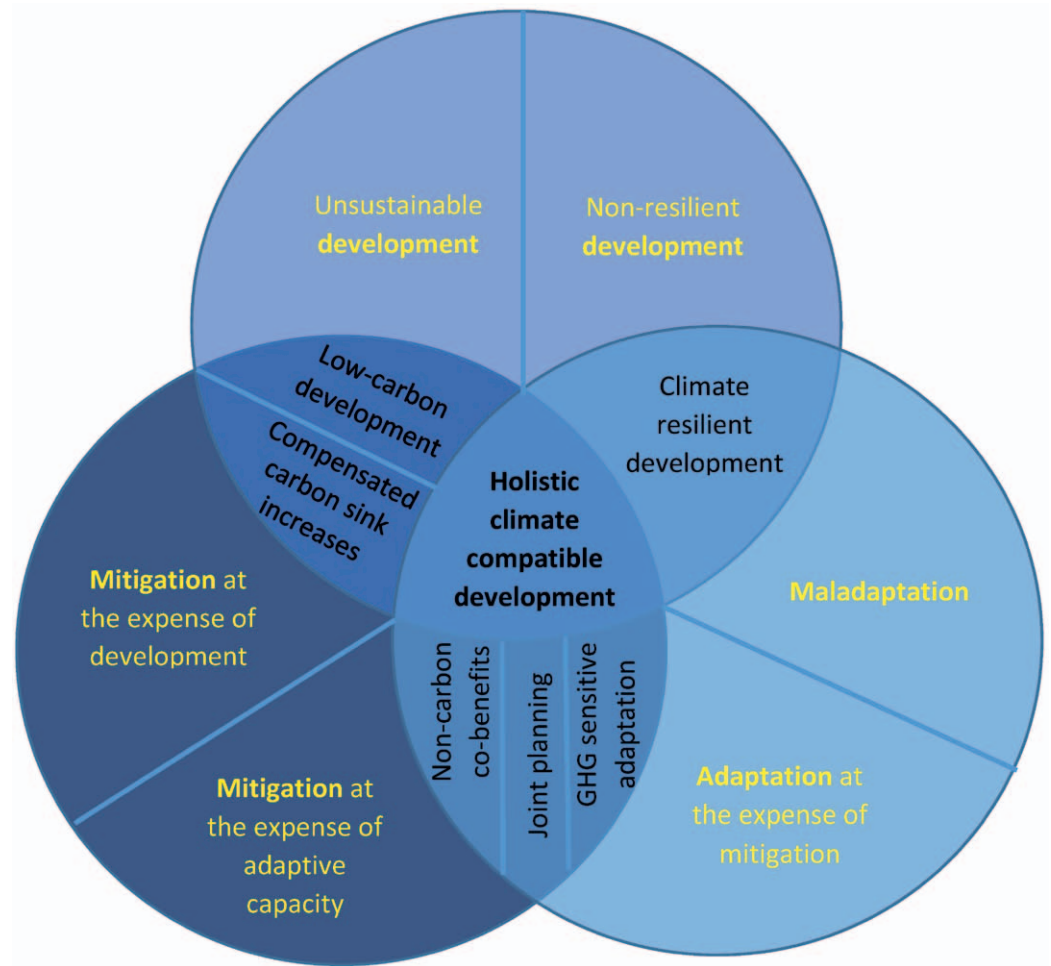


Figure 6.1: Synergies and trade-offs between mitigation, adaptation and development interventions. Adapted from Illman *et al.*, 2013.

2. Potential benefits of synergies between adaptation and mitigation

The climate change response process in Central Africa is progressing with mitigation through forest carbon dominating the process. Linking mitigation and adaptation has potential benefits for the development of a viable, balance, efficient and effective policy response. Climate change response in the region is experiencing

limited financing, especially adaptation. In this case, by linking mitigation and adaptation in synergy, adaptation will benefit from the financial flows targeting mitigation activities. This means that adaptation projects that integrate mitigation activities may be able to benefit from carbon funding and capacity building opportunities and

donors may go in for adaptation projects that produce global mitigation benefits. Technically, mitigation and adaptation activities overlap in forest landscapes in the region, and the overlap if well planned can yield benefits for adaptation and mitigation efforts. First, carbon storage through avoided deforestation and forest degradation is more likely to be permanent if it integrates the adaptation needs of communities and forest ecosystems. Second, integrating

adaptation needs is an incentive and motivation for local people to accept carbon projects, thus a guarantee of sustainability. Integrated activities are likely certain to avoid duplication and waste of financial, technical and material resources, and reducing transaction cost in the design and implementation of adaptation and mitigation is vital for the countries of the region with limited financial resources (Chia *et al.*, 2014).

3. Different levels for pursuing the integrated mitigation and adaptation agenda for Central African countries

Currently, the design and implementation of climate change projects and programs at the national and local levels originate from international regimes. COMIFAC have been instrumental in shaping and providing orientation to the construction of the international climate change response regime, that take into account

the needs and aspirations of the people and ecosystems of Central Africa. This section presents the different level of opportunities and context that COMIFAC countries and partners need to pursue and strengthen their position on synergy approaches.

3.1. International level policy frameworks

International policy frameworks on climate change and related issues have explicit and implicit provisions which provide foundation for exploring the opportunities for enhancing the synergy between adaptation and mitigation. Article 2 of the UNFCCC describes its ultimate objective as “stabilizing GHGs concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”. The objective further states that such a level “should be achieved within a

time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner” (UNFCCC, 1992). These objectives show that both adaptation and mitigation are relevant to the international climate policy framework. Furthermore, a number of subsequent decisions made under the UNFCCC are also relevant for integrating adaptation in forest carbon mechanisms (Box 6.1).

Box 6.1: *Mitigation and adaptation complementarity in international policy processes*

Under the UNFCCC, Decision 1/CP.16 highlights clearly that Parties must address adaptation with the same priority as mitigation. The safeguards of the Cancun agreements which were accepted by all the Parties to the UNFCCC should be protected and promoted when undertaking activities related to avoided deforestation and forest degradation. These safeguards include protecting and conserving biodiversity and ecosystem services, and enhancing other social and environmental benefits. Furthermore, Decision 9/CP.19 encourages entities financing REDD+ to provide financial resources for joint adaptation and mitigation approaches for the integral and sustainable management of forests. The Decision also recognizes the importance of promoting the delivery of non-carbon benefits which is relevant for guaranteeing the long-term sustainability of REDD+ activities. The non-carbon benefits, and the ecosystem services and the social and environmental benefits mentioned in the different decisions could be relevant for climate change adaptation.

Source: Munroe and Mant, 2014



Photo 6.2: *Competition between species is sometimes rough in the heart of tropical forests*

Under the UNFCCC the only mechanism that explicitly links mitigation and adaptation is the Clean Development Mechanism (CDM). Projects in this mechanism generate carbon offsets called Certified Emission Reductions (CERs) tradable in the carbon market. A levy (share of proceed) of 2% of CERs issued is taken to finance the Adaptation Fund. The fund is currently financing projects allowing for adaptation

to climate change in developing countries. This implies, the more effective mitigation is (i.e., the CDM), the greater the funds can be expected for adaptation. An opportunity to promote the synergy between mitigation and adaptation is to oblige projects under the CDM and adaptation funds to produce both adaptation and mitigation benefits.

3.2. National policy frameworks

National policies, both climatic and non-climatic can facilitate or hinder the integration of mitigation and adaptation. Currently, there is no policy framework for mitigation and adaptation synergy in the region, though actors at the national level are aware of integrated approach for mitigation and adaptation (Box 6.2). In the COMIFAC countries, mitigation and adaptation are rarely linked in national policies although in theory, national climate change mitigation policies can benefit adaptation and vice-versa. For example, under the CDM, the host country is ultimately responsible for deciding which projects are accepted. Thus, the approval of forest carbon mitigation projects with clear adaptation benefits could reduce vulnerability to climate change. Furthermore, countries in the region

preparing Emission Reduction Programs for the Carbon Fund, could as well introduce the need for programs to yield adaptation benefits. On the adaptation side, national adaptation strategies could benefit mitigation through the NAPAs and Adaptation Fund projects promoting forest activities.

In terms of non-climatic policies, improving national policies regarding governance, land tenure and rights could benefit both mitigation and adaptation. For example, unclear tenure and rights indirectly contributes to deforestation (Angelsen and Kaimowitz, 1999); and at the same time tenure and rights are determinants of adaptive capacity (Adger, 2006).

Box 6.2: *Policy discourse on the links between mitigation and adaptation in the Congo Basin region.*

Integrated policy for mitigation and adaptation is one of the three main discourses on climate change in the Congo Basin. Actors in the region already had arguments for integrated strategies between adaptation and mitigation options in terms of shared meaning, ideas, interest.

Table 6.1: *Main arguments for integrated adaptation and mitigation strategies*

Discourse	Main actors	Perception
Integrated policy of adaptation and mitigation	<ol style="list-style-type: none"> 1. Intergovernmental organizations 2. Advocacy groups 3. Civil society groups 4. Regional governments 5. Research institutes 	<ol style="list-style-type: none"> 1. Many windows of opportunity for synergy 2. Possibility of designing each to integrate the other 3. Seemingly similar institutional and legal framework for design and implementation 4. Shared policy outcome of poverty reduction, biodiversity conservation and development

Source: Somorin et al., 2012

3.3. Local/project level context

At the project level, synergy is based on the outcome of mitigation and adaptation projects where, carbon sequestration and conservation activities have potentials to produce adaptation benefits (Box 6.3), and adaptation activities also have potentials to sequester and guarantee the sustainability of forest carbon projects (Figure 6.2). In tropical forest countries the development of mitigation forest projects will most likely affect local communities whose livelihoods depend on forest goods and services. These mitigation activities can thus have positive (such as diversified incomes and economic activities, increased infrastructure or social services, strengthened local governance and institutions) and/or negative impacts (such as land or right deprivation, dependence on external funding) on the sustainable development of the rural poor and thus on their capacity to adapt to climate change (Murdiyarso *et al.*, 2005 ; Lawlord *et al.*, 2009).

The forest ecosystems in Central Africa has huge potentials for Ecosystem based Adaptation (EbA) ; and through EbA adaptation, projects can also directly benefit climate change mitigation, through either increasing or maintaining forests carbon stocks (Munang *et al.*, 2013). EbA includes the sustainable management, conservation and restoration of ecosystems that help people adapt to both current and future climate variability and change (Colls *et al.*, 2009).



Photo 6.3: Despite the arrival of electricity in villages the traditional cooking is perpetuated on firewood

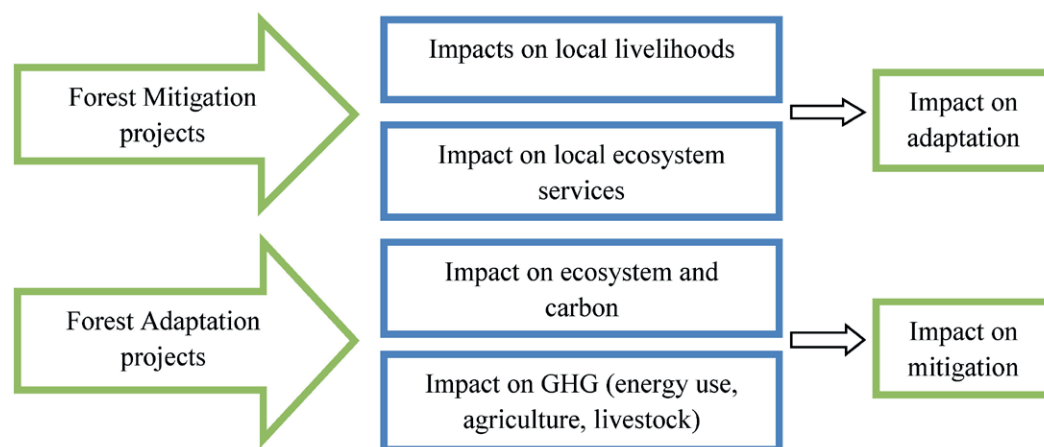


Figure 6.2: Links between mitigation and adaptation in projects

Box 6.3: *The potentials of mitigation and adaptation outcomes in Carbon Payments for Ecosystem Services (PES) projects – Case study of two community forests in Cameroon.*

The community forests, located in the Nomedjoh (Eastern Cameroon) and Nkolenyeng (Southern Cameroon) were part of a PES scheme facilitated by the Center for Environment and Development (CED). The project had as objective to generate Plan Vivo carbon certificates for the voluntary carbon markets. Although unintended, they also had potentials to provide adaptation benefits as shown in the table below.

The forests area was experiencing both deforestation and climate variability risks. Main drivers of deforestation in the project areas included the cutting down of forest to establish mixed agriculture fields for subsistence and commercial purposes. In addition, households in the project areas were also experiencing temperature changes, rainfall variability and changes in seasonal patterns.

The table 6.2 below shows how the activities and practices in project areas were evaluated in terms of their potential to enhance both carbon offsets and adaptation to climate change.

Table 6.2: *the potential of various activities and practices for adaptation and mitigation*

Activities and practices	Adaptation potential	Mitigation potential
Forest protection and regeneration - Forest reserve zoning - Patrolling and monitoring	++	++
Sustainable forest management - Increasing tree cover and enrichment planting in new, old fallows and fields - Reduced tree felling	++	++
Sustainable agriculture - Agriculture intensification; crop mixtures, new crop varieties, green manure, improve tillage and plantain propagation - Improve cocoa production; improve drying and storing techniques, introducing high yielding and disease resistant species - Improve agro-forestry; fruit trees, nitrogen fixers, community nursery for citrus and forest trees	+++	++
Alternative income and livelihood activities - Beekeeping - Livestock - Fish farming - Mushroom growing - Improve collection and marketing of NTFPs	+++	+
Knowledge and capacity building - Beekeeping and hive construction training - Training in the marketing of NTFPs - Training in sustainable agriculture practices - Training in fire management - Community awareness and training in forest protection - Knowledge in local climate variability	+++	+++
Improve governance process and institutional building - Tenure rights - Equity in access to resources - Equity in benefit sharing - Equity in decision making procedures	++	+++
Key: +: Low importance/relevance ++: Medium importance/relevance +++: High importance/relevance		

Source: Chia et al., 2014

4. Political and institutional prerequisites for synergy in Central Africa

In Central Africa, it is prudent for countries of the region to lay down ground works to take advantage of integrated mitigation and adaptation opportunities that will emerge in the near future. In this context, there is need to build institutional setups, financial mechanisms and programs and projects that will simultaneously deliver positive outcomes for mitigation and

adaptation. This should consider the cross-sectorial and multi-level nature of adaptation and mitigation strategies. However, analyzing the ways to realize synergy outcomes at the policy level is about making decisions under great uncertainties (Polasky *et al.*, 2011). Kengoum *et al.* (2015) highlighted factors that support this complex uncertainty (Figure 6.3).

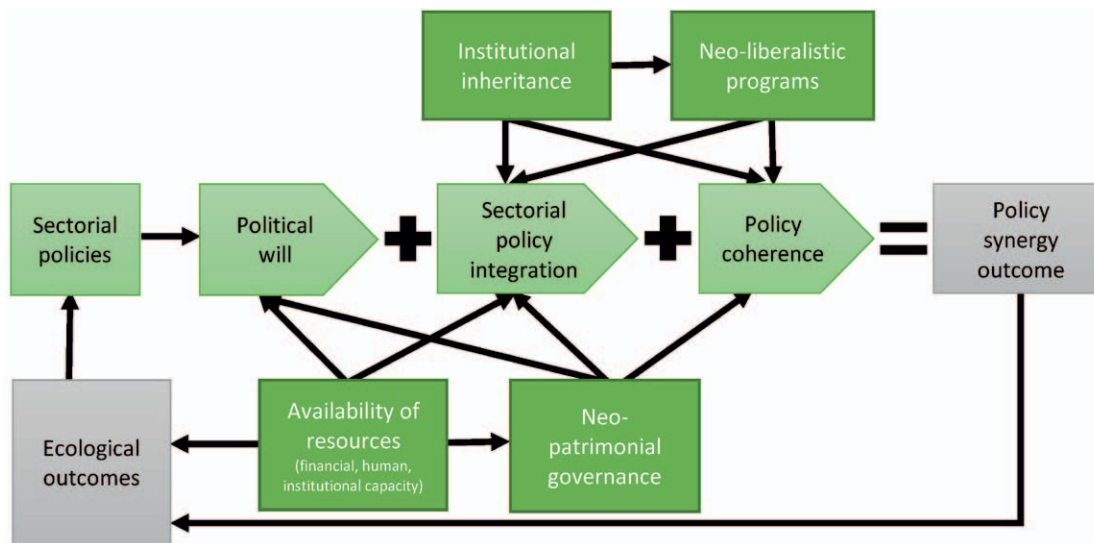


Figure 6.3: Dependency relations among key factors and conditions in the policy process to realize synergy policy outcomes

Source: Kengoum *et al.*, 2015

According to the dependency relations highlighted in Figure 6.3, ecological outcomes are, or need to be implemented via specific sectorial policies within the overall development framework. Assessing how integration and coherence of these sectorial policies and the role of political

will contributes in overcoming structural and conjectural problems. This is of vital importance to determine the factors that hinder or enable the achievement of synergy policy outcomes, and the design of appropriate pathways for overcoming these problems (Kengoum *et al.*, 2015).

4.1. Looking beyond the forest sector for adaptation and mitigation synergy

Many policy sectors are involved as far as mitigation and adaptation are concerned. Two perspectives can be used to identify those policy sectors. The first is to take into account all the sectors contributing to GHG emissions and vulnerable to climate change. The second is to consider all the sectors that cover activities that can contribute in reducing vulnerability to

climate change. Designing integrated mitigation and adaptation policies requires coordination of actions and equitable and efficient redistribution of resources among actors from the national to the local levels (Howden *et al.*, 2007; Challinor *et al.*, 2007). However, sufficient finance and an environment free cognitive bias due to structural or conjecture reasons is required to cover



Photo 6.4: In Burundi the natural forest, forest plantations and agriculture, often mingle

all aspects of the policy (Moser, 2012). Achieving synergy between mitigation and adaptation also requires the integration and coherence of climate policies with development policies, before attempts to delivering integrated mitigation and adaptation policy outcomes.

As far as coordination is concerned, Congo Basin countries show three patterns of politico-administrative models. First, the technical expertise principally remains within the responsibilities of governmental specialized bodies. Secondly, public and private sectors still remain separated, with no or weak collaboration. Thirdly, each aspect of the administrative machinery is exclusively attached to a specific body of the government or administration. Furthermore, overlapping mandates and multiplicity of actors across sectors and scales hamper coordination (Dkamela, 2011).

The Congo Basin countries are implementing strategies to be emergent in the short, medium and long term. Cameroon targets 2035; DRC 2030; Burundi, CAR, Chad, Republic of Congo, Gabon and Sao Tomé & Príncipe 2025; Equatorial Guinea and Rwanda in 2020. The strategic documents related to these development visions build on specific development sectors such as agriculture, logging, development of the mining sector, road infrastructures and hydro-energy to help promote the national economy

and market development. These mostly target spaces located in forested areas, mainly the non-permanent forest estate, and could translate into shifts in land use and more GHG emissions if not managed sustainably. Thus, ongoing development paradigms place pressure on forest, and require significant policy reforms including the use of incentives such as the REDD+ mechanism.

The absence of a consistent climate change policy framework in the Congo Basin countries explains the difficulty to integrate them into the existing development frameworks of these countries as a prerequisite for synergy between mitigation and adaptation within climate policies themselves (Kengoum *et al.*, 2015). However, in the DRC climate change issues have been integrated into the national agricultural programs (PNIA). And another document drafted by both the national REDD+ committee and the ministry of agriculture provides guidance on how to reduce the impact of agriculture on forested areas. The rationale behind integration of climate concerns into agriculture policies vary from one country to another. While it is new in many of the countries in the region and mostly in relation to ongoing climate change negotiations, it is an old concern in other countries such as Cameroon where policies for a climate resilient agriculture started as early as in the 1970s, though in the non-humid forest region of the country.

4.2. Role of actors in planning and promoting synergy between mitigation and adaptation in Central Africa

Group of actors in the different countries in Central Africa have particular roles to play in order to respond to the broad policy initiative which is required for better anticipation, planning and coordination of synergy intentions. State actors are responsible for developing the government's agenda on climate change response. They have to ensure the mainstreaming and integration of mitigation and adaptation into national policies. They have to lead and increase the mobilization of financial resources to support integrated mitigation and adaptation initiatives. In addition, governments of the region through COMIFAC need to continue to influence the course of action at the international level by ensuring that negotiations stress the importance

and practical approaches for integrating adaptation and mitigation.

Development partners, international and national NGOs and research institutions are actively involved in forest management in the Congo Basin forest region. They provide support to the policy process in relation to research, capacity building, advocacy, and financial assistance. With the emerging complex relationship between forest and climate change, these institutions would need to multiply their efforts. Their interventions and support could include: awareness and mobilization of efforts within the decision and policy making circle and the promotion of inter-ministerial dialogue, collaboration and networking.



Photo 6.5: The sale of charcoal is an additional income to agriculture (Rwanda)

Forest activities related to adaptation and mitigation takes place at the local level with communities as dominant players. Communities should be given the opportunity to participate in

project design and implementation. This permits the identification of project activities that minimize trade-offs and enhance positive outcomes for adaptation and mitigation.

5. Emerging opportunities for Central Africa to promote mitigation and adaptation synergies within the UNFCCC

Despite the fact that current submissions to the SBSTA are not showing direct, clear and enough experience related to synergy between mitigation and adaptation, and with negotiations continuing, it is important to highlight possible entry points for mitigation and adaptation synergy, which ties with the context in Central Africa. They include the Non-Carbon Benefits

and the Joint Mitigation and Adaptation Mechanism for the Integral and Sustainable Management of Forests. These two options fit into the synergy context because both mitigation and adaptation are planned and taken into consideration at the level of project and program conception, design and implementation.

5.1. Non-Carbon Benefits (NCBs)

Draft decisions for consideration and adoption by COP21 on NCBs have been recommended by SBSTA 42. Prior to the recommendation, submissions by parties and observers including the COMIFAC group of countries underscored the delivery of NCBs as important to the sustainability of REDD+ initiatives. NCBs refer to benefits which are considered part of the outcomes of REDD+ activities and associated costs and are specifically included in REDD+ design and implementation phases. Climate change adaptation has been highlighted as one of the categories of NCBs (Katerere *et al.*,

2015). This implies REDD+ projects and programs defining climate change adaptation as an NCB has to make plans for the adaptation of communities and forest ecosystems to climate risks. COMIFAC group of countries in one of their submissions proposed the need to develop a composite approach to REDD+ payments that integrates NCBs payments (Elias *et al.*, 2014). In the composite approach, NCBs (e.g. adaptation) are fully integrated into the conceptualization, design and implementation of REDD+ rather than treating them as co-benefits. It is a bottom-up approach and also falls within the UNFCCC



Photo 6.6: *Tali is a species widely exploited in the forests of Central Africa*

obligations. Additional payments for NCBs are expected to be made as part of the combined results that include carbon emission reductions. MRV and payment for performance are therefore considered not only for carbon but also for non-carbon objectives and outcomes. Carbon and non-carbon objectives are treated equally at all the 3 stages of the REDD+ process. This method of making payments and incentivizing NCBs could benefit from the financial mechanisms

within the UNFCCC such as the Green Climate Fund (Katerere *et al.*, 2015). It should be noted that identification and definition of NCBs might be regional and country specific and with the gap related to methodologies, COMIFAC countries need to swiftly prepare to lead in developing and proposing simple methodological guidelines and indicators of priority NCBs specific to their context.

5.2. Joint Mitigation and Adaptation (JMA) Mechanism for the Integral and Sustainable Management of Forests

It is an approach which is being proposed as an alternative (non-market based) to REDD+. This approach opposes the current UNFCCC framework which handles mitigation and adaptation separately, without fully considering the possibilities to embrace the integral management of forests as systems of life in order to generate sustainable conditions for the climate, people and the forests (Box 6.4). The proponent (the Plurinational State of Bolivia) of this approach argues that supporting joint mitigation and adaptation can make contributions to foster the evolution of developing countries towards pathways of social and environmental sound rural

development by strengthening local resource use and management practices of forests and other land uses in forests landscapes (such as in community forests management, agroforestry, forest gardens, smallholder tree planting, etc) without compromising the role of the forest in the provision of multiple ecosystem services and livelihood support for forest-dependent communities.

This approach is appealing for Central Africa because it builds on the principles of Sustainable Forest Management (SFM), which is a management system already being practiced in forests and land use in Central Africa.

Box 6.4: *Looking at mitigation and adaptation as inseparable through JMA*

JMA is argued to lead to the following. First, it will strengthen forest governance; improve integrated management of forest and biodiversity, sustainable use of forests, agriculture and livestock production systems. Second, it will create conditions to minimize risk and the vulnerability of ecosystems and peoples to take advantage of opportunities with implications for adaptation. Third, the JMA approach is oriented to maintain environmental functions of forests which include carbon emission reductions, which can only be generated in a sustainable manner through the adaptation of forests and peoples living in forests. In this light, mitigation and adaptation are seen as integrated efforts resulting from the integral and sustainable management of forests.

Source: UNFCCC, 2015a.

The JMA implementation framework takes into consideration the following steps. Firstly, it considers the preparation of national proposals which includes the potential role of forests for mitigation and the assessment of vulnerability at the forest sector and territorial levels. And the identification of financial needs to address adaptation options in the JMA process. Secondly, it proposes *ex ante* financial agreements, which is an agreement between the UNFCCC through the Green Climate Fund, and the national body in charge of operationalizing the JMA regarding

the objectives to be achieved for both adaptation and mitigation. Thirdly, at the level of implementation proper, the JMA proposes the financing of multiple activities related to SFM. Lastly, the framework proposes monitoring and evaluation of mitigation and adaptation, in which the monitoring of mitigation is undertaken considering proxies for assessing tons of carbon absorbed or emitted by forest and adaptation is monitored using existing vulnerability assessment methods (UNFCCC, 2015b).



Photo 6.7: Order prevails in the logyard of the company SIFCO Congo

Conceptually the JMA appears alluring, though extra effort might be required to develop a detailed clear and technical framework in relation to the operationalization, coordination and

financing at the international and national levels. Progress in these aspects should consider the national strategies, priorities and capacities of developing countries.

6. Challenges and way forward for synergy between adaptation and mitigation in Central Africa

There is a growing interest of the international community to support joint mitigation and adaptation efforts. There are also a growing number of actors, encouraging and promoting mitigation and adaptation efforts in the Congo Basin in different contexts. For example, the African Development Bank (AfDB), the COMIFAC via the PACEBCo, research institutions such as CIFOR via the COBAM and GCS projects, and others such as the African Network of Model Forests (RAFM), UEFA in DRC, the ROSE in Cameroon, ARECO in Rwanda, and INDEFOR in Equatorial Guinea. However, despite initiating activities that promote joint mitigation and adaptation outcomes, these projects do not always fit into clear national climate policy frameworks.

Challenges in integrating mitigation and adaptation policies in the Congo Basin are mostly governance based. Climate and forest matters are cross-sectorial and this is in contrast with the ongoing sectorial approach in their governance as observed in Cameroon and DRC. In the current state of governance fragmentation, integrating mitigation and adaptation is more challenging and resource intensive, than just implementing both mechanisms separately (Kengoum *et al.*, 2015). However, resource wise, mitigation and adaptation are mostly financed by international organizations, with a very low contribution from local governments and there seem to be no existing finance for producing joint mitigation and adaptation policy outcomes despite the urgent need.



Photo 6.8: The umbrella trees are scattered along the forest road between Enyelé and Bétou in Congo

Congo Basin countries are still experiencing neo-patrimonial governance that hinders coordination across sectorial ministries could be a stumbling block for climate change response. Furthermore, the cumbersome nature of governmental procedures observed in some countries in the Congo Basin could also be a challenge for progress in climate response e.g. in Cameroon and DRC (Kengoum *et al.*, 2015).

As an opportunity for COMIFAC countries, options for exploring the synergy between adaptation and mitigation need to be explicitly introduced into ongoing and future market and non-market climate change mechanisms. In this light, present and post 2015 negotiations should continuously give space for dialogue on how best synergy options can be pursued. There is need to speed-up efforts in terms of governance, methodological and technical issues, to fill the gap of the current lack of experience on integrated mitigation and adaptation activities. Sourcing finance and funding holistic and sustainable pilot initiatives in the region may be useful to experience and generate lessons learned.