

Forestry-related input into relevant policies at the regional and global levels: an African perspective on climate change

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SUMMARY

This paper describes regional forestry and forestry-related policies of the Sub-Saharan Region of Africa, with a view to reveal and discuss their influence on both regional cooperation, national programmes and the participation of women, children and the vulnerable in forestry practice. All Regional Economic Commissions (RECs) of Sub-Saharan Africa have regional forestry policies which are reflected in Forest Convergence Plans (Central and West Africa), special commissions such as COMIFAC of Central Africa, policies and protocols (East and Southern Africa). The Great Green Wall of the Sahara and Sahel Initiative (GGWSSI) is also relevant. Despite promising developments in Central Africa, through programmes promoted under COMIFAC and those promoted in southern Africa by SADC, the influence of regional policies on the development of national actions still remains weak and should be strengthened by increased national actions. Linking forestry to climate change adaptation and mitigation in addition to traditional economic activities associated efforts would seem to offer new opportunities. Recommendations on how to improve the influence of these policies and promote the gainful participation of women, children and the vulnerable in forestry are suggested.

Keywords: forest policies, REDD+, adaptation, mitigation, climate change

Contributions d'idées liées à la foresterie dans des politiques appropriées aux niveaux régionaux et global: une perspective africaine du changement climatique

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Ce papier décrit les politiques de foresterie régionale et celles liées à la foresterie dans la région subsaharienne de l'Afrique, et vise à révéler et examiner leur influence sur la coopération régionale, les programmes nationaux et la participation des femmes, des enfants et des personnes vulnérables dans la pratique de la foresterie. Toutes les Commissions économiques régionales (RECs) de l'Afrique subsaharienne ont des politiques de foresterie régionales qui sont reflétées dans les Plans de convergence forestiers (Afrique centrale et de l'ouest), dans des commissions spéciales, telles que le COMIFAC de l'Afrique centrale, des politiques et des protocoles (Afrique de l'est et du sud). L'initiative du Grand mur vert du Sahara et du Sahel (GGWSSI) est également pertinente. Malgré des développements prometteurs en Afrique centrale, au travers des programmes promus sous l'égide du COMIFAC et ceux promus dans le sud du continent par le SADC, l'influence des politiques régionales sur le développement d'actions au niveau national demeure faible et devrait être renforcée par un accroissement des actions nationales. Il semblerait qu'une association de la foresterie à l'adaptation au changement climatique et à son atténuation, ajoutée aux efforts traditionnels d'activités économiques y étant associés, pourrait offrir de nouvelles opportunités. Des recommandations pour améliorer l'influence de ces politiques et promouvoir la participation rémunératrice en foresterie des femmes, des enfants et des personnes vulnérables sont suggérées.

Insumos forestales en las políticas relevantes a nivel regional y mundial: una perspectiva africana sobre el cambio climático

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Este artículo describe las políticas forestales regionales y otras relacionadas con el sector forestal de la región subsahariana de África, con el fin de dar a conocer y debatir su influencia tanto en la cooperación regional, los programas nacionales y la participación de las mujeres, los niños y las personas vulnerables en la práctica forestal. Todas las Comisiones Económicas Regionales (CER) del África subsahariana tienen políticas forestales regionales que se reflejan en los Planes de Convergencia Forestales (África Central y Occidental), las comisiones especiales, como la COMIFAC de África Central, y las políticas y protocolos (África Oriental y del Sur). La Iniciativa de la Gran Muralla Verde para el Sáhara y el Sahel (GMVSS) es también relevante. A pesar de avances prometedoros en el África Central, gracias a los programas promovidos

por la COMIFAC y los promovidos en el sur de África por la Comunidad de África Meridional para el Desarrollo (SADC), la influencia de las políticas regionales en el desarrollo de acciones a nivel nacional sigue siendo débil y se debe fortalecer con el aumento de acciones nacionales. La vinculación de la silvicultura a la adaptación al cambio climático y su mitigación, además de las labores asociadas a las actividades económicas tradicionales parece ofrecer nuevas oportunidades. Se sugieren recomendaciones sobre cómo mejorar la influencia de estas políticas y promover la participación beneficiosa de las mujeres, los niños y las personas vulnerables en el sector forestal.

INTRODUCTION

The forests of Sub-Saharan Africa occur in broad eco-regions namely; tropical moist rain forests, woodlands and savannas, montane forests and the parklands in the Sahel (Timberlake *et al.* 2010, FAO 2003). The woodlands and savannas are further subdivided into bio-geographical zones or domains; namely the Zambezian (Miombo), Sudanian, and semi-arid woodlands. The total forest cover in Africa is an estimated 650 million ha, which constitutes 16.8% of global forest cover. The classification of forested or wooded eco-regions in Sub-Saharan Africa cited here is largely based on the floristic regions recognized and described by White (1983). Mean annual rainfall in ecoregions in sub-Saharan Africa range from 100 – 400 mm per year in the Sahel to over 1600 mm per year in the tropical moist forests, with the dry forests and woodlands receiving between 400 mm to 1600 mm per year. Tropical moist forests occur at low altitudes under rainfall regimes of over 1600 mm per year. These forests cover an extensive area of West and Central Africa, and occur in 14 countries in the West African and Central African sub-regions (Okali 2011, Timberlake *et al.* 2010). At higher altitudes of above 900m, low land moist forests give way to Afromontane forests that have a discontinuous distribution from West Africa and the Sudan in the north through, east in the Albertine Rift and Eastern Arc Mountains in Tanzania, to southern Africa where they are confined to highlands. Viewed in the context of climate change mitigation and adaptation, one has to contend with the fact that Africa's forest cover in all its types and forms has been reduced over time and mostly as a result of human activities. In this regard, the combined losses of forest cover between 1990 and 2000 in Africa, was about 56% of the global total and of that, 44% was shared between DRC, Sudan and Zambia (FAO 2003), and Africa's share of biomass based GHG emissions is about 35% of the global total, despite hosting only 14% of global forest cover (Houghton 2003, Williams *et al.* 2007). In much of the continent, the drivers of deforestation and forest degradation (Geist and Lambin 2001) are mainly agricultural expansion, wood energy harvesting, overgrazing and more recently, mining; including oil and gas. Ironically, the relatively high rates of deforestation provide an opportunity for rehabilitation of degraded areas and creation of new forest cover under schemes to reduce emissions from deforestation and forest degradation and sustainable forest management (REDD+).

The regional forestry and forestry-related policies and initiatives in the different regions of sub-Saharan Africa, have become important areas of policy development for a number of reasons. One compelling reason is that natural forests

straddle political boundaries and are better managed as ecosystems. The regions of Africa have various initiatives such as the ECOWAS and Central Africa Forest Convergence Plans and Southern Africa's SADC Protocol on Forestry (SADC 2002). Even though the public forest services in many African countries appear to have weakened capacity in terms of technical skills to manage and monitor deforestation and forest degradation, there are still expectations from the forest sectors of many countries in economic and environmental aspects (FAO 2007, Kojwang 2004, Kojwang and Ulloa 2012).

The paper describes regional policies, policy processes and key initiatives in the forest sectors of Sub-Saharan Africa. In this regard reference is made to Central Africa (ECCAS), East Africa (EAC) and IGAD, Southern Africa (SADC) and West Africa (ECOWAS) and regional initiatives associated with these regions. There is also a special focus on how those policies, processes and initiatives address the participation of women, youth and vulnerable groups, how they are being handled and ways in which their participation and beneficiation can be enhanced or are being enhanced.

REGIONAL FORESTRY- RELATED POLICIES AND STRATEGIES IN SUB-SAHARAN AFRICA

Of all the regional policies that are forest-related in Africa, one policy framework which is relevant to the entire continent, and that which all of sub-Saharan Africa subscribes to, is the African Union's (AU) *New Partnership for Africa's Development* (NEPAD). The NEPAD Process has elaborated a *Common African Agricultural Development Programme* (CAADP). To achieve its goals, the CAADP Process (CAADP 2005) has four main 'pillars' namely; (i) Sustainable Land and Water Management (SLM), (ii) Trade and Marketing Infrastructure, (iii) Food and Nutrition Security and (iv) Agricultural Research and Technology Adoption. The most crucial target of CAADP is to achieve 6% annual growth in agricultural output. Even though forestry is not strongly featured in the CAADP Framework, it is directly relevant to Pillar 1 of NEPAD, and arguably in all the other three pillars. In East and Southern Africa, the Common Market for East and Southern Africa (COMESA) works closely with NEPAD to plan and mobilize resources for the CAADP Process. Furthermore, a tripartite arrangement among three Regional Economic Commissions (RECs) is the COMESA-EAC-SADC Tripartite climate change programme whose aim is to rally African States to safeguard their interests in the post 2012 UNFCCC global agreement and to adopt strategies to unlock local and global funds to maintain Africa's land based production and adaptation in aid of livelihoods and sustainable development

in general (CAADP 2005, COMESA-EAC-SADC 2011). The arrangement has lent its support for the promotion of climate smart agriculture within their shared regions through national and donor funding.

In Central and Western Africa, the NEPAD-CAADP Process is relevant as is the COMIFAC which is supported by large projects such as the Central Africa Regional Programme on Environment (CARPE), the Congo Basin Forest Fund (CBFF), and more recently, the Great Green Wall Initiative which cuts across countries in Africa's Central, East West and the Sahel regions (Maisharou 2012). Table 1 provides an overview of the key forestry-related policy processes, initiatives and examples of large regional programmes; as well as a summary of the key regional policies and frameworks for forestry in the various regions of sub-Saharan Africa.

The Sahel region

The Great Green Wall for the Sahara and Sahel Initiative
The Great Green Wall for the Sahara and Sahel Initiative (GGWSSI) is an African initiative created and developed to fight environmental challenges facing the drought-prone

Sahel Region (Maisharou 2012), which is designed as an instrument of development of Sahel States and has the vision to create a forested belt from East to West Africa, through a set of integrated interventions on cross-cutting issues that affect the lives of the peoples of the Sahel and Saharan areas of Africa. Its global objective is to improve the livelihoods of local communities in the Sahel and Sahara regions through sound management of ecosystems between the isohyets of 100 mm North and 400 mm in the south. It has chosen to operate through six thematic areas covering conservation, enhancing carbon stocks, restoration, provision of goods, income generation. In order to implement it, was created in June, 2010 and agreed to be hosted in N'Djamena Chad, by the eleven (11) desert frontline countries (Maisharou 2002).

Central Africa

Central Africa initiated its regional commitment to collaboration in 1983 through a political agreement, which was later followed by a treaty in 1985 with its headquarters in Libreville, Gabon (Donfack 2013). The Economic Commission of Central African States (ECCAS) is composed of the states of

TABLE 1 *Regional policy processes relevant to forestry in Sub-Saharan Africa*

Region	Regional organizations, policies and/or forest-related planning frameworks	Relevant regional strategies/programmes/initiatives/funds
Central Africa	<p>NEPAD Comprehensive Agricultural Development Programme (CAADP)</p> <p>Central African Forestry Commission (COMIFAC)</p> <p>Economic Community of African States (ECCAS/CEEAC)</p> <p>YAOUNDE DECLARATION on the Congo Basin Forests</p>	<ul style="list-style-type: none"> • Central African Regional Programme on Environment (CARPE) • Congo Basin Forest Fund (CBFF) • UN-REDD Support for DRC • FC-PF Support for DRC, Congo Republic, Cameroon • African Adaptation Programme • Great Green Wall of Sahara-Sahel Initiative (GGWSSI)
Eastern Africa (including IGAD)	<p>NEPAD's Common African Agricultural Development Programme (CAADP)</p> <p>East African Community EAC LAKE VICTORIA BASIN TREATY</p> <p>COMESA Forestry Strategy 2009</p> <p>IGAD HoA-REC&N</p>	<ul style="list-style-type: none"> • UN Adaptation Fund • Lake Victoria Environmental Management Project • Saving the Eastern ARC Forests • African Bio Carbon Fund (COMESA)
Southern Africa	<p>NEPAD's Common African Agricultural Development Programme (CAADP)</p> <p>SADC Protocol on Forestry</p> <p>COMESA Forestry Strategy 2009</p>	<ul style="list-style-type: none"> • SADC Biodiversity Strategy • SADC Forestry Strategy 2010–2020 • SADC Projects on REDD+ MRV • SASSCAL • African Bio Carbon Fund (COMESA) • COMESA Forestry Action Plan
Western Africa and the SAHEL	<p>NEPAD's Common African Agricultural Development Programme (CAADP)</p> <p>ECOWAS Environmental Policy of 2008. ECOWAS Commission 2008, Abuja Nigeria.48pp www.ecowas.int</p>	<ul style="list-style-type: none"> • UN Adaptation Fund • African Adaptation Programme • Great Green Wall of Sahara-Sahel Initiative (GGWSSI) • The strategic programme for the reduction of vulnerability and adaptation to climate change in West Africa • Permanent Interstate Committee for Drought Control in the Sahel (CILSS)

Angola, Burundi, Cameroon, Central Africa, Chad, Congo Brazzaville, the DR Congo, Equatorial Guinea, Gabon and Sao Tome and Principe. It is a region which hosts the great Congo Basin forest ecosystem, which is the second largest block of tropical rain forest after the Amazon. The region is endowed with significant quantities of forest resources, oil and gas, minerals, water (freshwater and hydro-power) as well as biological diversity. The ECCAS Treaty focuses on human development, peace security, stability and regional integration on one hand, and physical, economic and monetary integration on the other. It is therefore, the highest regional policy which should guide issues, such as forests and environment, which require political cooperation among the member states.

While the ECCAS Region (<http://www.ceeac-eccas.org/>) does not have a regional climate change or formal forest policy, it has a Protocol on Cooperation in natural resources among member states and a number of forestry, climate change and biodiversity conservation initiatives which provide region-wide policy direction on forest management (Milimo 2013b). In addition, it has a programme known as PACEBCo of which the second component deals with forests and climate change (http://www.pacebco-ceeac.org/index.php?option=com_content&view=article&id=72&Itemid=137). In this regard, the ECCAS Protocol on Cooperation on Natural Resources is important since it led to the creation of the famous Central African Forest Commission (COMIFAC) or “*Commission des Forêts d’Afrique Centrale*”. Established in March 1999, by Presidents of Member States through the “Yaoundé Declaration”, it adopted Forest Convergence Plan in February 2005 for improved management and conservation of forests in Central Africa, making it the most important forest policy process in the region. Thereafter, a number of regional programmes on environment and forestry were initiated including the US-Funded Central African Regional Programme on Environment (CARPE), the Congo Basin Forest Funds (CBFF) and the Congo Basin Forest Partnership (CBFP). In addition, international conservation NGOs such as WWF have continued to fund initiatives, particularly in the Congo River Basin, including trans-frontier protected areas. In addition a Regional Plan to monitor the forests known as the “Observatoire des Forêts d’Afrique Centrale” (OFAC) Observatory (<http://www.observatoire-comifac.net/>) has been created by member states to the Congo Basin Forest Partnership.

East Africa and the Inter-Governmental Authority for Development (IGAD)

The region known as East Africa traditionally consisted of Kenya, Uganda and Tanzania, which had a political union known as the East African Community which was officially launched in 1967. It collapsed during the “cold war” era, and was revived in 2000 through a treaty for the Establishment of the East African Community (EAC 2007, Milimo 2013a). In 2007, the Republics of Burundi and Rwanda acceded to joining the EAC, and more recently the Republics of southern Sudan and Somalia have applied to join. While the overriding

objectives of the EAC was to enhance the region’s competitiveness through integration by way of a Custom Union, Common Market, Monetary Union and a Political Federation, its articles (article 2 chapter 5) also emphasize political cooperation for the promotion of sustainable utilization of natural resources of partner states and taking measures that effectively protect the natural environment of partner states. Chapter 19 (articles 11, 112 and 114) specifically deals with the joint management and utilization of natural resources for the mutual benefits of member states. This is where forest management fits in, together with those on climate change, energy and food security. The Secretariat of the East African Community in Arusha Tanzania, has developed three instruments; the East African Climate Change Policy (EAC 2011a, Table 2), the EAC Climate Change Strategy, 2011–2016 (EAC 2011b) and the EAC Climate Change Masterplan, 2011–2031 (EAC 2011c). In addition, policy frameworks which support forestry and climate change include the East Africa Protocol on Environment and Natural Resources (EAC 2005), the East African Protocol for the sustainable development of Lake Victoria Basin (EAC 2003) and EAC Trans-boundary Environmental Assessment Guidelines for Shared Ecosystems in East Africa (EAC 2005).

The area in Eastern Africa which falls under the Inter-governmental Authority for Development (IGAD) was created in 1996 (IGAD 1996) to replace the Inter-governmental Authority on Drought and Development (IGADD) which was established in 1986. The IGAD countries include Uganda and Kenya, who are also members of the EAC, and countries which constitute the Horn of Africa; Djibouti, Eritrea, Ethiopia, Somalia, Sudan and South Sudan. Unlike the EAC which was created by a formal and ratified treaty, IGAD was created by an agreement, whose legal mandate is weaker than a treaty. Hence, IGAD does not have a progressive agenda for political integration, a competent regional executive authority or its own legislative and judicial institutions. However, being a semi-arid to arid sub-region with a history of droughts and severe famines, it has a Climate Prediction and Application Centre Protocol (IGAD 2007a), a sub-regional disaster preparedness strategy and the IGAD Environment and natural resources strategy (IGAD 2007b).

Southern Africa

In southern Africa, the key policies and planning frameworks that are forestry-related include the *SADC Treaty of 1992* (SADC 1992) which calls for the sustainable utilization of natural resources and effective protection of the environment and the *SADC Protocol on Forestry of 2002* (SADC 2002) which specifically focuses on the social, economic and environmental aspects of forest management and collaboration to manage shared forest ecosystems and forests on key river catchment areas. These are further supported by the *SADC Biodiversity Strategy of 2006* (SADC 2006) and the *Forestry Strategy 2010–2020* (SADC 2010). Currently, SADC as a region has developed a support programme document on REDD+ to complement the national actions of its member states (SADC 2011). The programme document is largely

TABLE 2 *The EAC climate change policy pillars and their support areas and priority targets*

Pillars and support areas	Priority targets
Pillars	
1. adaptation;	1. strengthening meteorological services and improving early warning systems,
2. mitigation; and	2. disaster risk management through risk reduction, preparedness, mitigation and reconstruction,
3. research (monitoring, detection, attribution and prediction).	3. scaling up of efficient use of water and energy resources, irrigation;
Identified support areas to policy pillars	4. crop and livestock production, strengthening pre- and post-agricultural losses,
a) technology development,	5. protection of wildlife and key fragile ecosystems like wetlands, coastal, marine and forestry,
b) technology transfer,	6. improving land use, soil protection, tourism, climate proofing social infrastructure,
c) finance,	7. reducing climate sensitive vector and waste borne diseases.
d) knowledge management,	
e) education,	
f) public awareness,	
g) training and information.	

Source: Milimo 2013

consistent with the principles and articles of its Protocol on Forestry of 2002, which was later ratified in 2009.

The Common Market for East and Southern Africa (COMESA) which works closely with NEPAD on the CAADP Process also supports its member states as already described on matters of climate change ranging from international negotiations, implementing CAADP and trying to make an Africa Bio Carbon Initiative operational (COMESA 2009).

Western Africa

West Africa has a vision to achieve socio-economic development through regional economic and political cooperation using the Economic Commission of West African States (ECOWAS 1993) based in Abuja, Nigeria as the platform. One of the key regional policy frameworks for the management of forests in West Africa is the ECOWAS Environmental Policy of 2008, since the region does not have a regional policy framework specific to the forest sector. More recently, ECOWAS Ministers of Forestry and Wildlife in September, 2013 adopted an *ECOWAS Forest Convergence Plan* in Accra, which mirrors the one adopted by the Central Africa Forestry Commission (COMIFAC). The Inter-state Committee on Drought Control in the Sahel (CILSS) is another body that complements the ECOWAS Environmental Policy, particularly in environmental monitoring, disaster preparedness and adaptation to Climate Change. There is also an ECOWAS Sub-Regional Action Programme (SRAP) to Combating Desertification, an initiative which was adopted by ECOWAS Heads of State in June 1999. On another regional scale, the Great Green Wall for the Sahara and Sahel Initiative (GGWSSI), which has been described earlier, covers some ECOWAS member states such as Burkina Faso, Mali, Niger, Nigeria and Senegal.

In his analysis of ECOWAS, Milimo (2013b) observed that the ECOWAS states have ratified all the environmental conventions, but do not have a regional instrument to deal with climate change on a regional scale. In addition, translating other climate change-related policies and strategies

contained in documents into effective investment and action plans to reduce long-term vulnerability remains weak. However, it is hoped that the new Forest Convergence Plan will address this concern.

NATIONAL ACTIONS AND REGIONAL COLLABORATION ON CLIMATE-RELATED FORESTRY WORK IN THE REGIONS OF SUB-SAHARAN AFRICA

This section is based on the assumption that any regional policies, planning frameworks and initiatives are endorsed by member states are aligned to their national goals, visions and objectives; and are reflected in national policies, programmes and actions.

Central Africa

Unlike the countries in West Africa and the Sahel, the countries in Central Africa have the distinction of being the home of the Congo Basin Forests; the second largest formation of the Tropical Rain Forests in the world. The global significance of these forests and development needs of the member states of the Congo Basin is what led to the creation of COMIFAC (de Wasseige *et al.* 2010) to manage the forests through concerted and coordinated actions supported by a collaborative framework. Given the relatively high forest cover in each of the countries, international pressure has tended to steer the countries of Central Africa towards mitigation through REDD+ (Wasseige 2010) but the authors of this paper argue that the countries should also pursue their need for climate change adaptation programmes. Adaptation programs have been technically and financially supported in a number of Central African countries, namely CAR, DRC, Sao Tome & Principe, and Chad, through GEF and UNEP within the framework of NAPA programs. Countries not classified as least developed in Central Africa, namely Cameroon, Congo, Gabon and Equatorial Guinea have not received similar support to elaborate their NAPAs, but have

instead, benefitted from the special African Adaptation Programme (AAP) supported by the government of Japan (UNDP/Japan ODS 2010).

On nationally appropriate mitigation actions (NAMAs), Central African countries have concentrated on mitigation (Donfack 2013, Olufunso *et al.* 2011) as already stated and six countries namely, Cameroon, CAR, Congo, DRC, Equatorial Guinea and Gabon have elaborated forestry based NAMAs. Of these, the first five countries are participants of in the World Bank funded Forest Carbon Partnership Facility (FCPF), and Gabon, which has not joined the FCPF is developing its own programme on forest based mitigation, even though it has a very low rate of net deforestation (de Wasseige *et al.* 2010).

Eastern Africa and IGAD

In Eastern Africa, deforestation and forest degradation are well recognized problems and in addition to other land uses, are the key sources of GHG emissions, even though the forests of Kenya and Ethiopia, are reported to be net sinks of carbon (Milimo 2013a, Government of Kenya 2002, Federal Democratic Government of Ethiopia 2001). In addition, countries such as Uganda, Sudan and Tanzania have joined the World Bank FCPF and UN-REDD processes to develop national REDD+ Programmes as is the case for both Kenya and Ethiopia (Government of Ethiopia 2011, Government of Kenya 2010). In this regard, REDD+ remains the main climate change mitigation strategy in Eastern Africa and IGAD.

With respect to adaptation to climate change, East African countries with industrial plantations such as Ethiopia, Kenya, Sudan and Tanzania are concerned if climate change predictions are realized, which suggest increased aridity and changed rainfall patterns (Hulme *et al.* 2001) could be detrimental to their forest production based on their current provenances. In addition, forests and forestry can be used as mechanisms for adaptation to changing climates because of their resilience to climatic disturbances and amelioration of the environment for various species and other forms of production, including water.

Southern Africa

From the perspective of NAPAs, southern African countries such as Lesotho and South Africa have developed clear national papers on climate change adaptation and mitigation. On adaptation, South Africa offers an example of research geared to responding and adapting forestry practice through management of industrial plantations to expected changing climate scenarios (Kojwang 2010a). Lesotho promotes afforestation to rehabilitate degraded rangelands, often on steep slopes (Kojwang 2010b), as a result of its hilly terrain and fragile soils which are erosion prone. In its NAPA, forestry is its sixth priority project (https://unfccc.int/files/adaptation/application/pdf/lesotho_napa_proj.pdf).

On mitigation (NAMAS), countries such as Madagascar, Mozambique, and Zambia are developing their forest based mitigation through REDD+ and in so doing, have joined the World Bank, Forest Carbon Partnership Fund (FCPF) and UN-REDD respectively. South Africa, Lesotho, Namibia Swaziland have official policies on climate change adaptation policies that are not restricted to forestry. In Malawi, a number of community based afforestation and reforestation programmes serve both mitigation and adaptation purposes (Government of Malawi 2012, <http://www.adaptationlearning.net/project/integrating-climate-change-adaptation-and-mitigat...>) Mozambique is in the process of developing its national REDD+ strategy but even more interesting, Mozambique like its northern neighbour Tanzania has attracted one of Africa's largest investment in afforestation both for carbon offsets under CDM, but also for the production of wood (<http://www.greenresources.no>). In southern Africa, the tradition of *community based management of forests and wildlife* such as those in Botswana, Namibia, Zambia and Zimbabwe qualify as climate change adaptation mechanisms because they provide ecological connectivity between ecosystems and habitats, provide goods and services (http://cmsdata.iucn.org/downloads/cca_bchild.pdf).

West Africa and the Sahel

In West Africa, all the countries have ratified and are party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol and all, except Liberia, have submitted their initial or first communication to the UNFCCC; and 11 have followed with their second communications to the same (Okali 2013). With respect to preparing NAMAs and NAPAs, it is clear from the reports from the countries that they have a strong preference for climate change adaptation programmes through NAPAs and much less for mitigation actions (NAMAs) (Okali 2013). From a total of 18 countries who have prepared NAPAs, only 6 have prepared NAMAs (Okali 2013). However, afforestation and reforestation are strongly recognized in the NAPAs of countries of West Africa that fall within the Sahel (Locatelli *et al.* 2008); a situation that can be explained by the value of tree planting in environmental amelioration, supply of wood products such as fuel and others. The few countries that have prioritized forestry in both NAMAs and NAPAs include; the Gambia, Ghana, Ivory Coast, Nigeria, Sierra Leone and Senegal. Senegal has described in its second National Communication to the UNFCCC, an exemplary programme in a semi-arid environment, which provides both adaptation through environmental amelioration in a farmed landscape, and mitigation through carbon stock enhancement and should have lessons for such new initiatives such as the Great Green Wall of the Sahara (Maisharou 2012). The expected mitigation benefits, is an estimated 27,967, 500 tons of carbon over a 20-year period and a wood equivalent of 900,000 m³ or 30 m³ per hectare on land that has been previously bare; and by way of hedgerows as boundary plantings around its groundnut fields.

PARTICIPATION IN FORESTRY AND CLIMATE CHANGE RELATED WORK

The participation of women, youth and vulnerable groups in forest-related work in Africa

The participation of women, the youth and vulnerable groups in forestry work is an often overlooked aspect in forestry practice, despite the fact that they tend to dominate in aspects of forest regeneration through nursery work, plantation establishment through planting and also in the collection of non-wood products (Okali 2013). These facts alone justify programmes that specifically address their strengths and needs, with a view to enhancing their participation in production and share of benefits in the forest-related value chains.

In Eastern Africa and IGAD Regions, regional policies do give sufficient attention to the issue is evident in the EAC Gender Strategic Plan (EAC 2010) and IGAD's Gender Policy of 2004 followed by IGAD's effort to mainstream gender in its migration policies (IGAD 2010). In addition, COMESA has also partnered with IGAD to mainstream gender in climate change and the COMESA-SADC-EAC youth climate change Alliance (Milimo 2013a); is the case in the COMESA women's entrepreneurship fund (WEEF). Milimo (2013a and 2013b) further note that despite the recognition of gender issues in regional policies and their implementation at national levels is still not adequate. In SADC, the participation of women and youth is well recognized in the SADC Protocol on Forestry of 2009, Article 13 and subsequently in regional programme documents on cross-border fire management and REDD+ (Dlamini 2012). Importantly, SADC is a participant in the COMESA-EAC-SADC tripartite arrangement which calls for broad participation in global fora which gave rise to the COMESA-SADC-EAC Youth Climate Change Alliance. Other initiatives which have recognized the importance of the participation of women and youth include the African Climate Solution; a joint COMESA, EAC and SADC initiative, the CAADP Framework of NEPAD and COMESA, and also the NEPAD Environmental Action Plan. In practice, some member states in SADC such as Mozambique, South Africa, Tanzania and Zambia have programmes which target women and youth in forestry and climate change work (Dlamini 2012).

A focus on women, youth and vulnerable groups in forestry and climate change work

The role of women, children and vulnerable groups in forestry is a topical issue since they tend to participate in forest establishment activities such as seed collection, nursery operations and planting. In addition they also dominate in the collection and marketing of non-wood products (Okali 2013). Despite their role, they remain poor and do not benefit much in wood and non-wood product value chains and because they remain marginalized, they will also tend to be the ones that will be disproportionately affected by the ravages of climate change. As such, ways in which benefits accruing to them can

be increased is worthwhile. As a recommendation to increase the role and benefits to women, youth and vulnerable groups in EAC and IGAD, Milimo (2013a) cites the Forest Policy of 2005 which recognizes the role of local communities to manage and benefit from participatory forest management. Such a policy should be strengthened by the domestication of the Nagoya Protocol on Access to Genetic Resources and the fair and equitable sharing of benefits in the context of the Convention on Biological Diversity (<http://www.cbd.int/abs/>). Other mechanisms suggested by the author include co-management or participatory management arrangements with clear gender roles and support, targeted employment opportunities, easing access to non-wood resources such as grazing and collection of fruits, medicines from forest reserves, outcome-oriented capacity building programmes, with a focus to women, children and the poor.

The potential of NFTPs to reduce poverty remains high and benefits from products such as shea butter in West Africa and Marula Oil in southern Africa are encouraging (Phytotrade.com). In southern Africa, the harvesting and trade in non-wood forest products such as Marula Oil in Namibia and Botswana, Baobab in Zimbabwe and Mozambique and in other countries in southern Africa, tends to target women's groups and is heavily promoted by Phytotrade Africa (Phytotrade.com). Other tree based oils with potential include those from *Schinziophyton rautanenii* (Mugongo), *Ximenia caffra* and *X. africana* (sour plum) and *Trichilia hometica*. Clearly, policies supportive of genuine and increased benefits to producers of NFTPs, along their product value chains is a legitimate empowerment mechanism that should be pursued.

GENERAL CONCLUSIONS

The regional policies described in this paper were underpinned by region-wide political commitments by member states to support and revive forestry development in the regions, particularly in the call for collaboration between countries in forest management but their influence on national policies remains weaker than was intended. Notwithstanding, the regional policies of Central (ECCAS) and Southern Africa (SADC) seem to have done relatively better than the others in influencing national actions. Central and Southern Africa through COMIFAC and SADC, respectively represent relatively strong regional approaches since a number of forestry related programmes have been initiated as a result of their regional policy processes, with clear political backing from the member states. The SADC Protocol on Forestry and the SADC Forestry Strategy, the SADC Support Programme on REDD+ illustrates this through, regional Projects on MRV, Trans-boundary Fire Management and FLEGT. Similarly for COMIFAC which has laid the regional policy foundations for the Congo Basin Forest Fund, CARPE and other regional programmes supported by non-governmental organizations such as WWF and IUCN, among others.

International policies, personified by Multilateral Environmental Agreements seem to have influenced regional actions more than regional policies in most of sub-Saharan Africa; a situation which may be motivated by access to multilateral funds and international reporting obligations for member states.

On the participation of women and children, the reports from the regions suggest that women and children are generally involved in forestry work particularly in the collection and marketing of non-timber forestry products and nursery production. However, there is no indication that their participation has had significant effects on reducing poverty in rural areas. Thus, there is room to enhance their participation in organized and formal ways to enhance their capacity to produce and profit even more along the value-chains of the various forest products. In countries with industrial plantations, most forestry operations tend to favour young men. However, silvicultural operations such as nursery production have used women. This provides an avenue for support that can target them for greater levels of support from governments, industry and non-governmental organizations. There also seems to be huge potential in the largely unexplored value adding area of small-scale manufacturing of wood products. It is an area that can see growth in capacity and income generation, provided that both countries and the regional policies support technology transfers, intra-regional and international trade.

Enhancing the effectiveness of regional policies on forest management

In general, it seems that while forest management under REDD+ is readily recognized for its mitigation potential against climate change, this is not the case in the use and promotion of forests and forestry for climate change adaptation. Human populations in much of sub-Saharan Africa, is still on the increase and so will their associated land use activities. As such, adaptation to, and mitigation of climate change should necessarily inform Africa's land use policies and practices. This is an aspect of forest management that requires policy dialogue both within and between countries, particularly those that share forest ecosystems. Because of this anomaly, the following remedial measures could be considered:

- Regional organizations and processes with forestry related mandates such as the ECCAS ECOWAS, COMIFAC, COMESA, EAC, and SADC should promote the importance of maintaining forest cover and protecting forest ecosystems from unnecessary fragmentation, so that their resilience against long-term ecological disturbances are not reduced.
- In order to enhance the use of forests in adaptation, evidence on the importance of maintaining forest and woodland cover, as a safeguard mechanism that can support resilience against environmental disturbances should be provided as a vital tool in policy advocacy.

- Any schemes on adaptation and mitigation will require a good understanding of the drivers of deforestation and degradation. Thus, a focus on drivers of forest cover change and their relative importance can also be used to communicate policy messages to countries. Indeed any REDD programme will need to address the drivers and devise ways to address the underlying causes in nationally recognized and supported strategies.
- It is important that regions and member states conduct and publish vulnerability assessments of their forest and woodland types, taking into account predicted climate change scenarios, and design programmes that address the risks in formal forest management programmes. This is particularly crucial for threatened, large and shared forest ecosystems. Such vulnerability assessments also justify the monitoring of forest and woodland cover, the description of their current status and the recent changes in cover; including structure and diversity, which are important parameters that should be included in monitoring programmes, either for mitigation or adaptation.
- Since adaptation is often aimed at land production systems in the agricultural sector, forestry practice does not come naturally to practitioners and policy makers that develop the NAPAs. Whatever the reasons, it seems obvious that the forest sector itself and through its scientists and practitioners, must do more to articulate the maximum with respect to the current and potential contributions of the forest sector and forestry practice in climate change adaptation. In mitigation terms, REDD+ is now accepted internationally as a mitigation mechanism but in adaptation, much more work needs to be done. In this respect, this paper strongly recommends that the model used in Senegal, which combines both mitigation and adaptation aspects of forestry to climate change, and the Great Green Wall of the Sahel and Sahara Initiative, ought to be promoted for adoption by other countries and/regions.
- The Great Green Wall of the Sahel and Sahara Initiative (GGWSSI) is both a policy process in that it gives policy direction that is directly sanctioned by Sahelian States and the African Union and is also a practical initiative which is to be implemented by states. Even though it is still in its incipient stages of implementation, it seems to have a sound political framework that has a good potential for leveraging national actions. The main challenge that needs to be overcome is for member states within the Sahel, to individually and collectively marshal resources internally and from external sources to implement its objectives. As an ambitious and imaginative process, one of its attractions, is its potential it to make significant ecological impacts in the Sahelian Belt in the context of mitigation and adaptation.

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REFERENCES

- CAADP, 2005. Comprehensive Africa's Agricultural Development Programme (CAADP) Summary. NEPAD Secretariat, Southern Africa Regional Implementation Planning (RIP) Meeting in Maputo, Mozambique, February 15th–18th 2005.
- COMESA, 2009. Strategy on forestry development second forestry strategy validation workshop (28–29 August 2009). Common Market for Eastern and Southern Africa, Victoria Falls Town, Zimbabwe.
- COMESA-EAC-SADC. 2011. Programme on climate change adaptation and mitigation in the eastern and southern Africa COMESA-EAC-SADC Region.
- de WASSEIGE, C.P., DE MARCKEN, N. BAYOL, F. HIOLHIOL, P.H. MAYAUX, B. DESCLEE, R. NASI, A. BILLAND, P. DEFOURNY, R. EBA'AATYI. 2010. The Forests of the Congo Basin – State of the Forest 2010. European Union Publications Office 2012.
- DLAMINI, C.S. 2012. Policies, strategies and programmes in the SADC and COMESA regions. A report commissioned by the African Forest Forum. A platform for stakeholders in African forestry (Unpubl.).
- DONFACK, P. 2013. National plans and programs related to forests and climate change in central african countries. A report commissioned by the African Forest Forum. A platform for stakeholders in African forestry. (Unpubl.)
- EAC, 2003. Protocol for Sustainable Development of Lake Victoria Basin. EAC Secretariat, Arusha, Tanzania.
- EAC, 2005. Trans-boundary environmental assessment guidelines for shared ecosystems in East Africa. Draft Revised Guidelines for Trans-boundary Environmental Impact Assessment – May 2005. EAC Commission, Arusha, Tanzania.
- EAC, 2006. Agriculture and Rural Development strategy for the East African Community 2005–2030. EAC Secretariat, Arusha, Tanzania.
- EAC, 2006. Protocol on Environment and Natural Resources Management. EAC Secretariat, Arusha, Tanzania.
- EAC, 2007. Treaty for the Establishment of the East African Community. EAC Secretariat, Arusha, Tanzania.
- EAC, 2011a. East African Community Climate Change Policy. EAC Secretariat, Arusha, Tanzania.
- EAC, 2011b. Eastern Africa Climate Change Strategy (2011–2016). Final Draft. EAC Secretariat, Arusha, Tanzania.
- EAC, 2011c. East African Community Climate Change Master Plan 2011–2031. EAC Secretariat, Arusha, Tanzania.
- EAC, 2010. EAC Strategic plan for Gender, Youth, Children, Social Protection and Community Development 2011–2015. EAC Secretariat, Arusha, Tanzania.
- ECOWAS, 1993. Revised Treaty of the Economic Community of West African States (ECOWAS). Cotonou, 1993.
- FAO, 2001. Global Forest Resources Assessment 2000. Main Report. FAO Forestry Paper Report 140.
- FAO, 2003. Forestry Outlook Study for Africa. Regional Report – Opportunities and Challenges towards 2020.
- FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA, 2001. Initial National Communication of Ethiopia to the United Nations Framework Convention on Climate Change (UNFCCC). National Meteorological Services Agency.
- FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA, 2011. Ethiopia's Climate-Resilient Green Economy strategy.
- GEIST, H.J. and E.F. LAMBIN, 2001. What drives tropical deforestation? LUCC Report Series 4. 2001, Louvain-la-Neuve: LUCC International Project Office, University of Louvain. 116 p.
- GOVERNMENT OF ETHIOPIA, 2011. Readiness Preparation Proposal (RPP): Federal Democratic Republic of Ethiopia.
- GOVERNMENT OF KENYA, 2002. First National Communication of Kenya to the United Nations Framework Convention on Climate Change (UNFCCC), Ministry of Environment and Natural Resources, Nairobi Kenya.
- GOVERNMENT OF KENYA, 2010. REDD Readiness Preparation Proposal for Kenya, Submitted to the Forest Carbon Partnership Facility, June 2010.
- GOVERNMENT OF MALAWI, 2012. National Climate Change Response. Draft White Paper. Ministry of Environment and Climate Change Management.
- GOVERNMENT OF ZAMBIA, 2009. Zambia Quickstart Initiative. UN collaborative programme on reducing emissions from deforestation and forest degradation in developing countries national joint programme document.
- HULME, M., R. DOHERTY, T. NGARA, M. NEW and D. LITSER, 2001. Africa climate change: 1900–2100. *Climate Research* 17: 145–168.
- IGAD, 1996. Agreement Establishing the Inter-Governmental Authority on Development (IGAD). IGAD/SUM-96/AGRE-Doc.
- IGAD, 2007a. Protocol on the establishment of IGAD Climate prediction and applications centre (ICPAC). A specialized institution of IGAD. www.igad.org. 2020. *FAO Forestry Paper 141*.
- IGAD, 2007b. IGAD Environment and Natural Resource Strategy. IGAD Secretariat, Djibouti, Republic of Djibouti.
- IGAD, 2010. Together We Rise to Attain Gender Equality and Women's Empowerment. Addis Ababa, Ethiopia.
- IPCC, 2007. Climate Change Impacts, adaptation and vulnerability. Contribution to Working Group II to Fourth Assessment Report on the Intergovernmental Panel on Climate Change. Parry, M.L., Canziani, O.F., Palutikof, J.P.; van der Linden, P.J. and Hanson, C.E. (eds). Cambridge University Press, Cambridge, UK. 976 p.

- KOJWANG H. and G.ULLOA, 2012. A country needs assessment on REDD+ Readiness among UN-REDD and FCPF Member Countries.
- KOJWANG, H.O. 2010a. Forestry associations in southern Africa: time to rise to new challenges. Policy brief Vol. 1 No. 2, November 2010. African Forest Forum.
- KOJWANG, H.O. 2010b. Forestry associations in southern Africa: time to rise to new challenges. African Forest Forum. (Unpubl.)
- KOJWANG, H.O. 2004. Forest Science and Forest Policy Development: The challenges of southern Africa. *Scand. J. For. Res.* 19 (Suppl. 4) 116–122, 2004.
- LOCATELLI, B., M., KANNINEN, M., BROCKHAUS, C.J.P., COLFER, D. MURDIYARSO, H. SANTOSO. 2008. Facing an uncertain future: How forests can adapt to climate change. Forestry perspectives Number 5, CIFOR, Bogor, Indonesia.
- MAISHAROU, A. 2012. The Great Green Wall of Sahara and Sahel Initiative, climate change and gender issue. A report commissioned by the African Forest Forum. A platform for stakeholders in African forestry. (Unpubl.)
- MILIMO, P. 2013a. Forest and climate change policies, strategies and programmes in the EAC and IGAD sub-regions. A report commissioned by the African Forest Forum. A platform for stakeholders in African forestry. (Unpubl.)
- MILIMO, P. 2013b. Forest and climate change policies, strategies and programmes in the ECOWAS and ECCAS Sub-regions. A report commissioned by the African Forest Forum. A platform for stakeholders in African forestry. (Unpubl.)
- NAIR, C.T.S. and J. TIEGUHONG. 2004. African Forests and Forestry: an overview. A report prepared for the project. Lessons Learnt on Sustainable Forest Management in Africa. Royal Swedish Academy of Sciences, African Forest Research Network (AFORNET) and FAO.
- OKALI, D. 2013. Review of national plans and programmes related to people, forests and climate change in West Africa. A report commissioned by the African Forest Forum. A platform for stakeholders in African forestry (unpubl.)
- OKALI, D. 2011. Climate change and Africa moist forests. In Chidumayo, E., Kowero, G., and Larwanou (eds). 2011. Climate Change and African forest and wildlife resources. African Forest Forum, Nairobi, Kenya.
- OLUFUNSO, A.S., PEACH BROWN, H.C., VISSEREN-HAMAKERS, I., J. SONWA, D.J., ARTS, B., NKEM, J. 2011. The Congo Basin forests in a changing climate: Policy discourses on adaptation and mitigation (REDD+). *Global Environmental Change, G Model JGEC-922*; No. of Pages 11, journalhomepage: www.elsevier.com/locate/gloenvcha
- REPUBLIC OF KENYA, 2002. First National Communication of Kenya to the United Nations Framework Convention on Climate Change (UNFCCC), Ministry of Environment and Natural Resources, Nairobi Kenya.
- SADC, 2002. SADC Protocol on Forestry 2002.
- SADC, 2006. SADC Biodiversity Strategy. SADC Secretariat, Directorate of FANR. Gaborone, Botswana.
- SADC, 2010. Forestry strategy 2010–2020. Making forests work for the economic development of the region. SADC Secretariat, Directorate of FANR, Gaborone, Botswana.
- SADC, 2011. SADC support programme on Reducing Emissions from Deforestation and Forest Degradation (REDD). SADC Secretariat, Directorate of FANR. Gaborone, Botswana.
- TIMBERLAKE, J.E., CHIDUMAYO and SAWADOGO 2010. Distribution and characteristics of African Dry Forests. In Chidumayo and Gumbo (eds). The dry forests and woodlands of Africa; managing for products and services, pp 11–41.
- UNDP/JAPAN OFFICIALS DEVELOPMENT ASSISTANCE (ODA), 2010. Observation sur le programme d'Adaptation et description des projets nationaux: Programme d'Adaptation en Afrique. Appuis des mesures globales et intégrées d'adaptation aux changements climatiques en Afrique, 11 p.
- WHITE, F. 1983. The vegetation of Africa. A descriptive memoir to accompany the UNESCO/AETFAT/UNSO Vegetation Map of Africa, UNESCO Paris.
- WILLIAMS, C.A., N.P. HANAN, J.C. NEFF, R.J. SCHOLLES, J.A. BERRY, A.S. DENNING and D.F. BAKER, 2007. Africa and the global carbon cycle. *Carbon Balance and Management* 2(3): 1–13.

LIST OF ACRONYMS

AAP	African Adaptation Fund
AFF	African Forest Forum
AMCEN	African Ministerial Conference on Environment
CAADP	Common African Agricultural Development Programme
CARPE	Central African Regional Programme for the Environment
CBFF	Congo Basin Forest Fund
CILLS	Permanent Interstate Committee for Drought Control in the Sahel
COMESA	Common Market for East and Southern Africa
COMIFAC	Central African Forest Commission
EAC	East African Community
ECCAS	Economic Commission of Central African States
ECOWAS	Economic Commission of West African States
FAO	Food and Agricultural Organization of the United Nations
GGWSS	Great Green Wall for the Sahara and Sahel Initiative
GHG	Green House Gases
GIS	Geographic Information Systems
HoA-REC&N	Horn of Africa Regional Centre and Network
IGAD	Inter-governmental Authority for Development

IGADD	Inter-governmental Authority on Drought and Development	REDD+	Reducing Emissions from Deforestation and Forest Degradation, enhancement of carbon stocks and sustainable management of forests
IUCN	Inter-governmental Union for the Conservation of Nature		
MRV	Measurement Reporting and Verification	SADC	Southern African Development Commission
NAMAs	Nationally Appropriate Mitigation Actions	SASSCAL	Southern African Science Service Centre for Climate Change and Adaptive Land Management
NAPAs	National Adaptation Plans of Action		
NEPAD	New Partnership for Africa's Development	SLM	Sustainable Land Management
NFTPs	Non-timber Forest Products	UNFCC	United Nations Framework Convention on Climate Change
OFAC	Observatory for the Forests of Central Africa		
PAGGW	Pan-African Great Green Wall Agency	WEEF	Women's Entrepreneurship Fund of COMESA
RECs	Regional Economic Commissions	WWF	World Wide Fund for Nature
REDD	Reducing Emissions from Deforestation and Forest Degradation		