World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

06

Policybrief

IN COLLABORATION WITH THE COMMON MARKET FOR EASTERN AND SOUTHERN AFRICA (COMESA)

Africa's biocarbon experience

Lessons for improving performance in the African carbon markets

Photo ©V Meadu

Carbon stored in trees, soils, vegetation and leaf litter offers great promise for African countries to participate in global carbon markets. However, compared to other regions, Africa has made little progress in benefiting from such opportunities.

Key messages

1. Africa has more than 100 biocarbon projects, ranging from forest conservation to agroforestry, as well as many sustainable land management programmes

2. Most projects are at an infant stage, with less than 5% generating financial benefits to local communities.

3. An inventory carried out by ASB confirms that Africa is seriously lagging behind other continents in terms of participation in the Clean Development Mechanism (CDM), REDD, and voluntary carbon markets.

4. The development of biocarbon projects in Africa is constrained by barriers including complex rules set by buyers, high costs and poor governance. If these barriers are not addressed, Africa will remain marginalized from mainstream carbon markets despite the continent being the most vulnerable to climate change.

The way forward

1. Africa should influence international climate change negotiations so that favorable and realistic international modalities and procedures are put in place for global biocarbon mechanisms. This includes supporting Clean Development Mechanism reform, ensuring that current negotiations adequately include emissions from agriculture, forestry and other land uses (AFOLU), and embracing Nationally Appropriate Mitigation Actions (NAMAs).

2. African governments should develop enabling national policy frameworks for investment, financing and development of biocarbon initiatives.

3. Investors should support learning-by-doing, by proactively funding and developing REDD demonstration projects to build capacity.

4. African governments should promote sub-regional efforts to pool resources, knowledge and skills in technical aspects of biocarbon project development.

Background

Biocarbon is the carbon absorbed by trees and plants, through photosynthesis, and which is stored in their biomass and soils. Carbon storage in trees and soils occurs in forests, agroforests, and through soil conservation and sustainable land management practices. The storage of carbon slows down the increase in carbon dioxide in the atmosphere, therefore slowing climate change. External support, through incentives provided to local communities for carbon storage projects can increase local incomes, reduce peoples' vulnerability to climate change and conserve biodiversity. Investors in such projects can claim carbon credits through the rapidly growing international carbon market, which grew from USD $32 billion in 2006 to $126 billion in 2008. Africa lags behind Asia and Latin America in benefiting from these opportunities. This policy brief takes stock of Africa's attempts to develop biocarbon projects for carbon markets and draws some lessons and recommendations for enhancing biocarbon markets in Africa.

1. Africa has more than 100 biocarbon projects

ASB research indicates that Eastern Africa has the largest share of biocarbon projects (**Figure 1**), although there is no clear boundary in their classification and they may overlap with other project activities. Most of the projects are forestry related and include: forestation (afforestation and reforestation); reduced/avoided deforestation; and other aspects of sustainable forest management. Countries in Eastern Africa have well developed forestry sectors responsible for implementing forest legislation and policies (1) which may explain this regions greater uptake of biocarbon projects.

At the country level, Madagascar has the highest number and most diverse of biocarbon projects, not only in the forestry sector/ biodiversity corridors but also in agroforestry and conservation agriculture (**Table 1**).

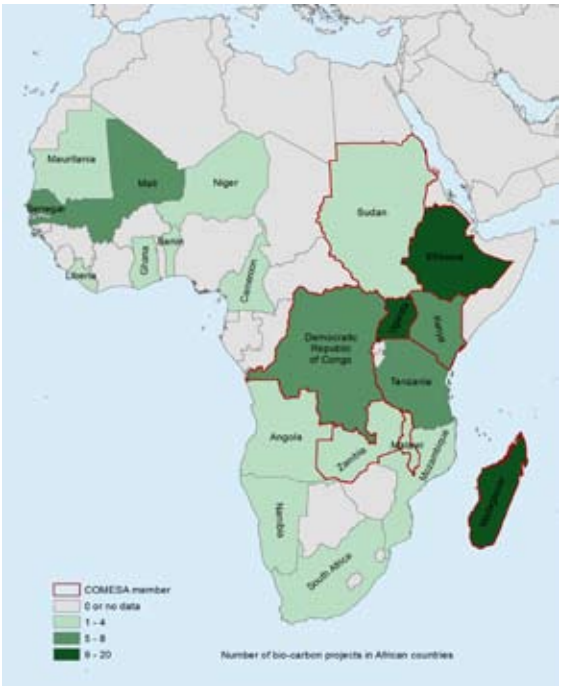


Figure 1: Distribution of biocarbon projects in Africa.

Table 1: Distribution of biocarbon projects in Africa.

Country	Number of projects
Madagascar	20
Uganda	15
Ethiopia	13
Kenya	8
Tanzania	7
Senegal	7
DRC	5
Mali	5
South Africa	4
Mozambique	4

Photo: V. Meadu

A REDD demonstration project near Morogoro, Tanzania, involves the local community in measurement, reporting and verification.

2. Most projects are at an infant stage

Although the total number of biocarbon projects in Africa is over 100, most projects are in their formative stage with less than 5 % of projects actually selling carbon and paying farmers. Among the projects paying farmers are: the Plan vivo project in Uganda; Nhambita community carbon project in Mozambique; and the International Small Group and Tree planting (TIST) projects in Kenya, Uganda and Tanzania.

Most biocarbon projects are selling their carbon at voluntary markets including Chicago Climate Exchange (CCX) and Over the Counters (OTC) which have less restrictive rules. Voluntary markets nearly doubled in 2008 compared with 2007, reaching 123.4 $MtCO_2e$ (2). In 2008, carbon sink projects comprised 11% of the voluntary markets and only 1% of CDM market (3).

The price paid to farmers per tonne of CO_2 varies from project to project but reflects the lowest price on the CCX (equivalent to USD $4 or 1/5 of the average EU market) (see **Box 1**: case study on Nhambita project in Mozambique). The price of carbon at international markets in 2009 varied from USD $3.50 at the CCX to an average of $20 in EU trading

Acronyms

ASB Alternatives to Slash and Burn Partnership for the Tropical Forest Margins

AWG-LCA Ad-hoc Working Group on Long Term Cooperation

AWG-KP Ad-hoc Working Group on the Kyoto Protocol

CDM Clean Development Mechanism of the United Nations Framework Convention on Climate Change

CERs Certified Emission Reduction credits

MRV Measurement, Reporting and Verification of carbon stocks and changes

NAMAs Nationally Appropriate Mitigation Actions

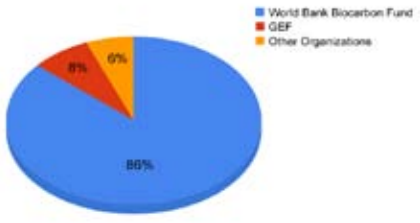
REDD Reduced Emissions from Deforestation and Degradation in developing countries

REDD+ REDD plus conservation, sustainable management of forests and enhancement of forest carbon stocks

USAID United States Agency for International Development

scheme. The average price of a voluntary carbon credit transacted on the OTC market has been increasing over the years. In 2008, the average price of carbon was USD \$7.34/t CO_2e, up by 22% from \$6.10/t CO_2e in 2007 and 79% above the 2006 value of \$4.10/t CO_2e. This compares to an average price of \$4.43/t CO_2e on the CCX.

Figure 3: The main investors in biocarbon in Africa



The leading investor in biocarbon projects studied by ASB is the World Bank Biocarbon Fund followed by the Global Environmental Facility (GEF) (**Figure 3**). Other small contributors include USAID and the FACE foundation.

3. Africa is seriously lagging behind other continents

The World Bank in 2008 estimated that the energy sector alone under CDM in Africa had the potential to be involved in over 3,200 low carbon energy projects and 361 programmes of activity (4). By September 2009, the continent had 111 projects in all sectors in the CDM pipeline (just 2.4% of the estimated potential). Of these, only 14 were A/R projects. A total of just 33 projects have passed registration and only one A/R project is from Africa. Even though economies of scale in China, India and Brazil give these countries a natural advantage within CDM, if Africa could improve on the policy and institutional support needed (as China and India have done), the continent's share of projects could grow significantly. See **Figure 4** for the distribution of CDM projects.

Similarly, under REDD, carbon investments have failed to effectively involve Africa (See **Figure 5** and **ASB Policy Brief 12 – Global Survey of REDD Projects: What Implications for Global Climate Objectives?**). Africa is losing forests faster than any other continent (5), and countries such as Angola, Cameroon, Democratic Republic of Congo, Nigeria, Sudan, Tanzania, Zambia and Zimbabwe top the list of nations with the highest deforestation rates. The potential for mitigation from avoided deforestation in Africa is high (1160 $MtCO_2$ per year) compared to afforestation (665 $MtCO_2$ per year) or forest management (100 $MtCO_2$ per year), but unfortunately policy implementation and law enforcement in most of these countries remains weak.

Figure 4: CDM project distribution

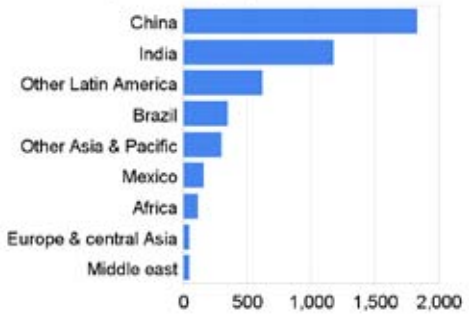
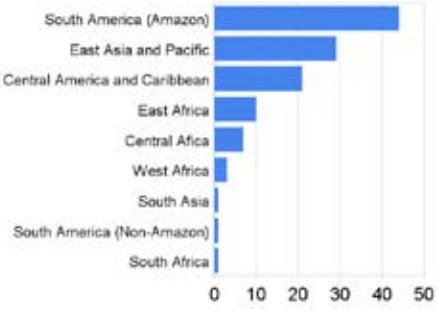


Figure 5: REDD projects and readiness activities



4. The development of biocarbon projects in Africa is constrained by a complex set of barriers

A number of reasons have been put forward to explain Africa's poor performance in carbon projects, including the complexity of rules and requirements as well as poor governance, high costs, weak capacity and perceived risks of non-performance by potential buyers (7, 6, 1).

Establishing CDM A/R projects in Africa has been hindered by high transaction costs, estimated to be as much as USD \$200,000 per project. So far, two proposals have been presented to IPCC to reduce transaction costs under CDM: i) simplify administrative processes for small-scale projects, most notably through predefined and simplified methodologies and the bundling of discrete project activities; and ii) adopt a 'programmatic' CDM which bundles together small-scale projects to help them overcome size limitations.

Capacity for carbon project development, in terms of knowledge, skills and experience, remain low in most African countries. The capacity to carry out carbon assessments in accordance with IPCC guidelines depends on a country's level of technological advancement. Poor countries with low levels of literacy will also have low human, technological and institutional capacities to plan and implement the proposed MRV projects.

Weak governance constitutes a significant barrier to biocarbon development in Africa. Political instability increases the risks associated with investing in CDM projects in Africa compared to other more stable regions. Poor natural resource governance - such as unclear and insecure property rights, including rights to carbon and revenues accruing from it - contribute to uncertainty in the gains local communities will receive from biocarbon.

It is imperative that countries in Africa have a climate change policy that includes the biocarbon sector. If these barriers to this are not addressed, Africa risks continued marginalization from mainstream carbon markets, despite being the most vulnerable continent to climate change.

Case Study: The Nhambita community carbon project, Mozambique

Initiated in 2003, the project pays 1000 smallholder farmers in the buffer zone of the Gorongosa National Park in Sofala Province for sequestering carbon through adoption of agroforestry practices and for reduced emissions from deforestation and degradation (REDD) of miombo woodlands.

Farmers are contracted to sequester carbon on their *machambas* (farmlands) through adoption of agroforestry practices from a 'menu' that includes horticultural tree species, woodlots, intercropping food crops with *Faidherbia albida*, planting native hardwoods around the boundary of the *machambas*, and planting fruit trees within the homestead

In all, different project activities yield carbon offsets equal to 24,117 tCO_2e per annum over an area of about 20,000 hectares . Farmers receive carbon payments at a rate of US\$ 4.5 per tCO_2 or in the range of US\$433/ha to \$808/ha over seven years (6).

The project shows that carbon sequestration through land use, land use change and forestry (LULUCF) can both promote sustainable rural livelihoods as well as generate verifiable carbon emissions reductions for the international community

The way forward

Africa should influence international negotiations so that favorable and realistic international modalities and procedures are put in place for global biocarbon mechanisms.

Africa should support national and regional policy frameworks and implementation through:

Supporting and engaging in active negotiations for CDM reforms. These are essential if Africa's potential in the afforestation and reforestation sector is to be realized. The reforms could include:

a) Requesting the CDM executive board to increase the emission threshold for small-scale projects to above 60 000tonnes of CO_2e annually. Amend CDM rules to create a 'premium' carbon market for Africa. This could be achieved by mandating that a certain percentage of all CERs issued must come from projects in Africa.

b) Amend A/R procedures and modalities and shorten the time required to work through the project cycle.

Ensuring that current negotiations adequately include emissions from agriculture, forestry and other land uses (AFOLU) in all negotiating tracks (i.e. REDD+, NAMAs, AWG KP) and in sectoral approaches in the AWG LCA

REDD, as currently discussed, might not provide optimal opportunities for countries without intact rainforests such as is the case for the majority of sub-Saharan Africa. Africa has the most diverse ecosystems of any continent and therefore African governments must unite to ensure that REDD, AFOLU and A/R stay on the agenda.

Supporting and actively planning for NAMAs

NAMAs remain largely undefined at the international level but they could provide excellent opportunities for energy development in Africa. So far, African countries have advocated for voluntary mechanisms and supported NAMAS in negotiations. Given the uncertain nature of discussions on NAMAs, African countries might be better placed to plan ahead, particularly in areas with high potential for carbon investments such as forestry and agriculture.

Encouraging national governments to develop enabling policy frameworks for investment, financing and development of biocarbon

Few, if any, countries in Africa have developed national policy frameworks for biocarbon development. Biocarbon projects require investments long before credits can be generated and traded on the market. It is therefore important for governments to formulate relevant policies. A biocarbon policy framework needs to be consistent with relevant existing national policies, such as forestry, agriculture, poverty alleviation and other development goals.

Promoting sub-regional efforts to pool resources, knowledge and skills in technical aspects of biocarbon project development.

Pooling of resources is required to promote biocarbon development since most countries in Africa experience similar climate change related challenges. Regional initiatives such as the Common Market for Eastern and Southern Africa (COMESA)'s proposed carbon market and the Congo Basin Forest Partnership (CBFP)'s regional approach on methodologies offer economies of scale.

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The Africa Biocarbon Initiative was launched in 2008 and is endorsed by the heads of state of the countries of East and Southern Africa. The Africa Biocarbon Initiative is being promoted by the Common Market for East and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC). The Government of Norway and the Rockefeller Foundation are providing financial support. The World Agroforestry Centre and partners are providing technical support. The content of this policy brief is based on research coordinated by the World Agroforestry Centre and the ASB Partnership for the Tropical Forest Margins.

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