



## Carbon Trading for Africa – the potential of Clean Development Mechanism initiatives for Burkina Faso

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**The challenge of accessing carbon markets through the Clean Development Mechanism (CDM).** The rapidly expanding markets for carbon and ecosystem services offer much potential to increase the flow of finances and the transfer of sustainable technologies to the developing world. As one of three 'flexible mechanisms' of the Kyoto Protocol, the CDM was established as a market instrument to assist Annex I parties<sup>1</sup> in achieving compliance with their Kyoto Protocol emission reduction commitments whilst promoting sustainable development in the developing countries that host CDM projects.

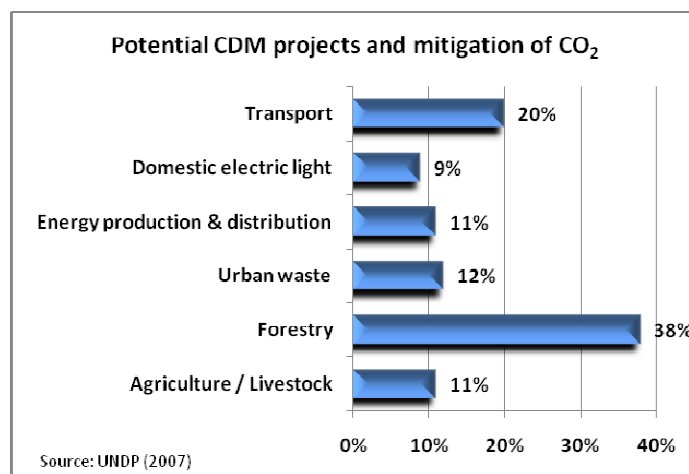
To date, the impact of the carbon market in Africa has been only marginal. According to UNFCCC registration statistics<sup>2</sup>, the African continent hosts only 29 CDM projects (about 2% of all projects globally), of which 19 fall in the Sub-Saharan Africa region. There are only two registered projects in West Africa, both in Nigeria. Several reasons have been put forward in explanation of this poor regional distribution. For example, lack of project finance, risk-related factors, constraints on project eligibility and complicated rules may be responsible for dampening the overall interest in CDM projects. Additionally, the requirement that emission reductions must be in addition to those that would have taken place without the CDM project, poses another constraint. At national level, limited institutional capability and lack of awareness about the potential of CDM can impede the development of CDM projects.

This policy brief focuses on CDM opportunities and constraints of particular relevance to Burkina Faso. It explores the mitigation potential of the use of *biochar* in agriculture and the role that sustainable forestry management could play in earning carbon credits and promoting adaptation measures to climate change in the country. It concludes by suggesting a common African approach to climate change negotiations to strengthen the region's participation in carbon markets.

**The experience of Burkina Faso.** Burkina Faso's economy is largely dominated by agriculture, livestock production and forestry. These three sectors occupy nearly 85% of the population and produce nearly two-thirds of its wealth. The main factors of production are land and human capital. GDP growth therefore depends predominantly on agricultural production which is largely linked to weather conditions, particularly given that mechanization and fertiliser use are relatively low. Agriculture is also the primary source of employment and income for nearly 85% of the population. Its contribution of more than 30% to GDP compares to that of livestock at 16%. However, the past decades have been marked by high and increasing pressures on land resources.

The protection of forestry and prevention of land degradation in order to maintain agriculture are therefore crucial for the population and are urgent issues to be addressed for the sustainable development of the country.

A scoping study launched by UNDP Burkina Faso in collaboration with the Designated National Authority<sup>3</sup> (DNA) of Burkina Faso in 2007 shows that the total CO<sub>2</sub> mitigation potential of the agriculture, forestry, waste, energy and transport sectors of the country is approximately 15 million tonnes of CO<sub>2</sub> between now and 2015, distributed among sectors as shown in the graph below. Crudely assuming a price of \$10 per tonne of CO<sub>2</sub>e, this represents a revenue potential of over \$150 million.



Despite this significant mitigation (and investment) potential, there are still no CDM projects registered in Burkina Faso. The country continues to face a number of challenges including: (i) institutional capacities, relationships, and practices to promote CDM projects are not sufficiently developed to create an enabling environment; (ii) limited knowledge of ways to access carbon finance amongst DNA members, the public sector, private companies, NGOs, local investment banks and business institutions; (iii) limited financing options to cover up-front project capacity needs; (iv) lack of information and analysis relating to greenhouse gas reduction opportunities.

<sup>3</sup> The designated national authority is the domestic institutional body (often a relevant ministry) which is responsible for approving CDM projects in the host country.

<sup>1</sup> Largely industrial countries

<sup>2</sup> <http://cdm.unfccc.int/Statistics/index.html> (as of 9 February 2009)

It is, therefore, imperative that an enabling environment be created that favours the participation of not only foreign investors but, most importantly, national and local actors so that the population itself becomes a beneficiary of carbon credits.

**Agriculture and the CDM potential of biochar.** In Burkina Faso, agricultural residues that remain after harvesting crops such as corn, sugarcane, and sorghum are often burned, resulting in emissions of CO<sub>2</sub>. However, a UN Convention to Combat Desertification (UNCCD) project called biochar, offers carbon-negative (but energy positive) ways of transforming these residues through pyrolysis into a type of charcoal, thereby sequestering CO<sub>2</sub> virtually permanently. Biochar can also be used to fertilize soils and can contribute to the attenuation of deforestation. As in many least developing countries, wood is the primary source of energy for the vast population of Burkina Faso. The bio-based charcoal would also reduce dependency on wood used as a primary source of energy for cooking in the household where added versatility could come from biochar producing kitchen stoves. Furthermore, the project shows that residues of biochar replenish the soil carbon pool and restore soil fertility. As a CDM project, this method would also have the potential of producing large financial flows to developing countries for both mitigation of, and adaptation to, climate change. Returns from biochar are particularly high in developing countries which are often plagued by high losses in soil organic carbon.

It is therefore crucial that African countries negotiate the inclusion of biochar techniques as approved methodologies in the CDM so that biochar can be implemented as 'bio-carbon' projects along with afforestation and reforestation (AR). Submissions to this effect by UNCCD and Micronesia to the Ad-hoc Working Group on Long-term Cooperative Action (AWG-LCA-4) in Poznan last December, requesting that biochar be included into the agenda of UNFCCC deliberations leading up to a framework agreement this December in Copenhagen, represent a first step.

**In the domain of forestry.** The scoping study of Burkina Faso also highlighted the importance of afforestation and reforestation CDM (AR CDM), which would account for 38% of potential projects. However, the complexity of the AR CDM methodologies and the high transaction costs are disincentives, particularly for low income countries such as Burkina Faso. In fact, globally, AR CDM projects represent only two of 1,390 registered projects under CDM. It is evident, as mentioned at COP 13 in Bali and reiterated at COP 14 in Poznan, that Africa must continue to negotiate for a simplified set of methodologies that would make investments in AR CDM projects more accessible and improve their regional distribution.

**Lessons drawn from Burkina Faso for adaption projects.** According to the 4<sup>th</sup> Assessment report by the International Panel on Climate Change (IPCC), Sub-Saharan Africa is considered to be extremely vulnerable to the effects of climate change. For instance for Burkina Faso, climate models suggest that its mean temperature may increase by 0.8°C by 2025 and 1.7°C by 2050, and annual rainfall could decline by 3.4% in 2025 and 7.3% in 2050. In 2025, forecasts indicate a reduction in the annual volume of rain water of Comoé and Mouhoun provinces as compared to the period from 1961 to 1990.

Burkina Faso will face consequences of climate change, along the lines of the scenarios described above. Droughts and ensuing desiccation

leading to land degradation pose serious threats to the livelihood and food security of much of the country's population. The sustainable management of forests, for example, could help stabilise degraded land as desiccation sets in. If avoided deforestation were recognized as an eligible CDM project activity, African countries would have far greater opportunities for hosting CDM projects, earning Certified Emission Reductions (CERs) through mitigation that could also simultaneously contribute positive benefits to adaptation.

At present, the CDM addresses adaptation to climate change only through the Adaptation Fund. Two percent of CERs issued for CDM projects finance the Adaptation Fund for adaptation projects and programmes in developing countries. But the CDM – and the carbon market in general – could play a far greater role in mobilizing resources for adaptation. The dual advantages of this would be a predictable flow of finance for adaptation and the establishment of a link between the source of the problem and a partial solution.

**Proposed issues for an African common position.** Strengthening the capacity of African countries to participate in the carbon market is crucial and must form an essential part of the negotiation strategy for Copenhagen later this year and in the run up to global agreement on climate change. In particular, African countries must take common positions to ensure that negotiations address the following:

- seek to lower the transaction costs of CDM projects;
- stress the critical needs of institutional capacity development, including CDM capacity building;
- aim at diversifying the CDM, to opening it up more fully to bio-carbon projects such as forestry, avoided deforestation, agriculture, soil sequestration and agro-forestry in order to maximize the participation of African countries;
- facilitate evaluation of the potential opportunities for CDM projects by sectors and analyze the socio-economic impact on African countries.

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