

# How relevant to sub-Saharan Africa is the Kyoto Protocol?

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**A B Sebitosi**

*Department of Electrical Engineering, University of Cape Town*

## **Abstract**

*The African Recovery Journal once referred to it as, 'an opportunity for African countries to attract new financing for their own sustainable development'. It was indeed waited for with much anticipation. In fact, today, it is readily observable that the international Clean Development Mechanism (CDM) market is becoming increasingly dynamic and projected to grow exponentially. However, judging from hard facts on the ground, the reality in sub-Saharan Africa is grim. Moreover, analysts are forecasting a convergence in the market; towards a focus on a few project types in a limited number of host countries. On this scale both, Kenya and Uganda are non-existent as are the rest of their sub-Saharan African compatriots.*

*This paper briefly looks at the history of the CDM and what could have gone wrong for an instrument that had so much promise for sub-Saharan Africa.*

*Keywords: sub-Saharan Africa, Kyoto Protocol, clean development mechanism*

## **1. Introduction**

The African Recovery Journal (Ukabiala, 2002) once referred to it as, 'an opportunity for African countries to attract new financing for their own sustainable development'. It was indeed waited for with much anticipation (RISO, 1999; SCEE 1998; Sokona et al 1998). In fact, today, the international Clean Development Mechanism (CDM) market is becoming increasingly dynamic (The Carbon Market Analyst, April 2004) and projected to grow exponentially. However, judging from hard facts on the ground (Thomas, 2003; Editorial, 2003; Pembleton, 2003; Tippmann, et al 2003) the reality in sub-Saharan Africa is grim. Moreover, analysts (The Carbon Market Analyst (Oct 2004); The Carbon Market Analyst (March 2004)) are forecasting a convergence in the market, towards a focus on a few project types in a limited number of host countries.

In the January 2005, CDM rankings for host countries (Point Carbon, CDM/JI Monitor Jan 2005) (see Appendix), even the leading continental industrial giant, South Africa, came in a poor 9<sup>th</sup> position out of 12. Moreover, it had a B rating which is described as having, 'to a limited extent', established a CDM/Joint Implementation (JI)-related organisational apparatus; has limited CDM/JI project experience; and (most importantly) 'the investment climate is only barely acceptable.' This ranking was subsequently downgraded to a rating, CCC at 11<sup>th</sup> position by May 2005. On this scale, both Kenya and Uganda are non-existent as are the rest of their sub-Saharan African compatriots.

It would therefore appear that the state-of-the-art Clean Development Mechanism (CDM) is neither the panacea for African problems that it was touted to be nor does it really (in its present format) have much (if anything) to do with the continent's development goals. It could in fact be argued that its creation could be doing more harm than good by distracting sub-Saharan Africa from its main focus namely attracting serious foreign investors.

Looking at the history of events up-to-date UNFCCC (2005) there is in fact reason to suggest that politics rather than science has advised international environmental policies and decisions. This paper briefly looks at the history of the CDM and what could have gone wrong for an instrument that had so much promise for sub-Saharan Africa.

## **2. Background**

Briefly, in the mid 20<sup>th</sup> century, a broad environment movement developed largely out of concerns about environmental pollution (Hays, 2000). Despite original misgivings, their thinking is now mainstream and has formed the cornerstone of a number of major international agreements.

The original model (Hollinshead, 2003) was based on a carbon dioxide filled atmosphere (as result of human activity, notably after the beginning of the industrial revolution) normally letting in the sun's energy but trapping in infrared radiation from escaping and resulting in a net gain in atmospheric temperature. Hence, the term *global warming*.

Subsequently developments led to the 1987 Brundtland Report: 'Our common future' by the UN World Commission on Environment and Development. This, in turn, gave birth to (among others) the ubiquitous term *sustainability*, which it defined as, 'Meeting the needs of the present generation without compromising the ability for future generations to meet theirs.'

This seemingly benign statement has, however, turned out to have much deeper implications than perhaps even the author of the document had anticipated. It has unearthed a host of economic, political and ethical issues. Eighteen years on and the world is still grappling with how (and at times whether) to begin implementing what Brundtland meant.

In the meantime, the United Nations mooted the UNFCCC (a Framework Convention on Climate Change) (UNFCCC, 2005) to coordinate international activities and treaties to address issues mainly raised by the Brundtland Commission.

The latest of these treaties is known as the Kyoto Protocol (KP) (Mustafa Babiker et al, 2000; Climate Change Secretariat, 2002; A User's guide to the CDM 2nd Edition) which (after satisfying the relevant political provisions) entered into force on the 16th of February 2005. It aims to set targets for the reduction of emissions of carbon dioxide (CO<sub>2</sub>) and all other greenhouse gases (GHG). To achieve this, it sets up the so-called Kyoto Mechanisms.

These are three market-based instruments that allow industrialised countries to meet their GHG reduction targets. They are the Joint Implementation (JI), the International Emissions Trading (IET) and the Clean Development Mechanism (CDM).

The fundamental model used by these instruments is based on the concept that a ton of carbon dioxide produced anywhere on earth has the same degradation impact on the environment. However, the cost of mitigating the production of that ton varies depending on which part of the world you are in. Therefore, through collaboration, countries that are unable to achieve their emission targets at home can go across their borders or abroad and earn the shortfalls in their targets.

The first two instruments (JI and IET) are only applicable in the industrialized world and only the CDM is available to the Third World. It states in part (A User's guide to the CDM 2nd Edition):

The purpose of the CDM shall be to assist Parties not included in Annex I (the have-nots) in achieving sustainable development and in contributing to the ultimate objective of the Convention' and the Annex I Parties (the haves) in 'achieving compliance with their quantified emission limitation and reduction commitments'.

JI and IET transactions are carried out through a reasonably straightforward barter-like system. Moreover, the modes of business transactions as well as political objectives are often similar and an inevitable atmosphere of mutual respect is bound to prevail.

The CDM on the other hand, involves mismatched developed/Third World dealers and is riddled with seemingly endless controversies (VIEWPOINT, 2004). Firstly, the dissimilarity means that some form of foreign exchange currency: in this case certifiable emission credits (CERS) must be used. Thus, CO<sub>2</sub> becomes the international currency of tomorrow. One CER is equivalent to the mitigation of 1 ton of CO<sub>2</sub> or its equivalent.

This then leads to how much value the commodity being discussed is and the criteria that must be used in this evaluation. Then the 'principles, modalities, rules and guidelines' emerge and their interpretation is a major point of contention. A lot of 'gray' areas and ground for haggling still pose major challenges. This is especially so for the Third World 'partner' for whom, as it most often turns out, the number of available alternatives are far less than his/her First World counterpart. Therefore, an inevitable atmosphere of unequal partners (benefactor/beneficiary) often prevails. Even in those countries that have gone some way in developing their administrative infrastructure like Malaysia, complaints abound of the absence of the 'equity spirit embodied in the original KP' from the would be investors (Boyee Veronique 2004).

### **3. How do the circumstances compare between the two worlds?**

In this case, an illustration will be made by a simple comparison between, Canada (as a typical First World country) and Kenya (as a typical sub-Sahara African country).

Canada ratified the Kyoto Protocol in December 2002 and committed itself to reducing its emissions of greenhouse gases to 6% below 1990 levels (the figure of 6% varies from country to country and the criteria appears to be quite arbitrary. 1990 is the standard base year but even this is different for some so-called economies in transition, like Russia.). The emission targets are to be met in the time frame between 2008 to 2012.

As a preamble, the Canadian government had drawn up a climate change plan on the 21<sup>st</sup> November 2002 (Climate Change Plan for Canada, 2002). The industries would be expected to take a share of responsibility to meet the national target. 'The Plan was the result of intensive consultation with the provinces and territories, as well as with stakeholders and individual Canadians to ensure uninterrupted competitiveness and growth.'

The targets would be met through a range of mechanisms locally and abroad. The Canadian

government created a CDM office to develop and disseminate information to Canadian industries participating in these projects. It is, however, not mandatory for Canadian companies to operate through this office. Canadian industries can then look at and select proposals from Third World countries that are eligible and decide which ones best suit their interests at the most affordable rates.

Kenya (on the other hand) ratified the UNFCCC on the 30<sup>th</sup> August 1994, and is a willing participant as a non-annex 1 party of the Kyoto Protocol. Like all non-annex I members, it has no obligation to meet any emission targets but as a developing country, it is very keen to take advantage of any investment opportunities.

In order to be eligible for participation, Kenya must create a designated national authority (DNA) through which local stakeholders can carry out CDM transactions. The authority is responsible for, among other things, the identification of projects that meet the 'Rules and Procedures Governing CDM Projects'. These include that the project leads to 'real and measurable reduction (or absorption)'. The project must also reduce emissions to levels that would have occurred without it. The authority has an additional onus to prove that the project would not have been implemented without the CDM. In addition, the DNA must also publish a document by which it defines the term sustainability, in the context of that country. This document is then used as a future benchmark for CDM projects in the country.

Unlike Canada with adequate infrastructure and resources, Kenya must invest its meagre resources in order to meet these conditions. Moreover, unlike the Canadian stakeholders, there was hardly any involvement of Kenyan local entrepreneurs in any of the policy processes. This is despite the fact that the procedure is a requirement of the KP.

There is an international effort to address these institutional and manpower problems through mechanisms like capacity development for CDM (CD4CDM) (UNEP RISO Centre, <http://cd4cdm.org/>). This author has also subsequently learnt that during the period of reviewing this paper, further improvements in the approval process were effected. This includes approval via email ([cdm-info@unfccc.int](mailto:cdm-info@unfccc.int)).

In the meantime, ordinary life in Kenya goes on in a different plane. The bulk of economic activities in sub-Saharan Africa are small-scale individual concerns. But like most sub-Saharan African countries, Kenya treats most of these economic activities by its ordinary citizens as informal: apparently meaning that they are inconsequential.

Ironically the incomes from some of these 'informal' transactions often rival and sometimes exceed official activity. For example, banks in Dakar, Senegal, estimate that Senegalese traders and

workers abroad send back \$40 million a month, equivalent to 60 per cent of the country's economy (ESRC, 2004).

Similar figures could be quoted for Zambia, Uganda or Kenya where large percentages of stocks of automotive spare parts, for example, have for many years been recovered from (mainly) Japanese automobile dumpsites (Agumba et al, 2000). The cellular communications industry in Africa is booming; thanks to fashion trend driven First-World consumers, whose discarded old sets have found ready markets in Uganda, Kenya and elsewhere. These governments continually plead ignorance of such issues even as the imports are properly documented and duly taxed. One plausible explanation could be that Africa governments are ashamed to acknowledge that the informal sectors do in fact outperform them.

Consequently, many international negotiations and treaties signed by African governments are devoid of issues that have relevance to (or complement) grassroots development. For example, one could argue that such activities do, in fact, mitigate carbon dioxide emissions and should therefore earn some 'carbon credits'. In fact, these countries literally spend their meagre incomes to clean up the west. However, recipient communities would stand to benefit from the relevant UNFCCC provisions only if their governments had the insight to argue for such cases in New York, as the UN only recognises sovereign states as legitimate entities.

Additionally, the largely hydropower supported Kenyan national grid from which its industry runs (for example) has a meagre capacity of just over 1000 megawatts (Agumba et al (2000); Hankins, (2001), even as Kenya is the regional 'industrial giant'. This is when compared to Uganda, for example, whose capacity is less than 30% of Kenya. Moreover, the bulk (75%) of Kenyans (like the majority of sub-Saharan Africans) live in the rural areas where the main activity namely, agriculture, is largely human and animal powered. The main fuel for thermal energy requirements (90%) is biomass, which contrary to popular belief, is zero emission rated: meaning that the process of extracting energy out of it does not constitute additional greenhouse gases to the environment. Thus, no serious viability can be expected in any cleanup investment as, clearly, no pollution does occur in the first place.

This massive use of biomass in sub-Saharan Africa however, has well documented sustainability issues. For example, the East African sub-region continues to grapple with chronic droughts resulting in massive power and food shortages and the threat of desertification looms large. This affects the environment hosting vulnerable communities and should be clearly the concern of the KP implementers.

There is therefore urgent need for reforestation

and afforestation. These along with agricultural activities result in the so-called emission removal units (ERU) by land use (or carbon sinks) under Article 3 of the Protocol. Clearly these are areas that should attract substantial CDM investments, and reap massive benefits for both sub-Saharan Africa and the environment. In fact, with massive tracts of marginal lands that should be afforested, ERUs are not only necessary but constitute Africa's *only* credible capacity to participate (meaningfully) in the international CDM market.

Unfortunately, for sub-Saharan Africa, Canadian companies are currently only allowed to participate in such projects under very unattractive conditions. Initially excluded altogether, carbon sinks are only allowed to clear up to a maximum of 1% of an investor's emission target allotment while the ceiling for industrial activities has been set at 100%. In addition, while industrial credits can be banked for future use, ERUs cannot. Thus, rendering the option a non-starter! Not surprisingly, therefore, there is widespread suspicion in Africa that politics rather than science has advised the issues of the KP.

#### 4. Concluding remarks

From the above, it would appear that the spirit of the KP, and in particular, the CDM may have aimed to promote sustainability and equity. However, by seeking to exclusively use market forces to achieve these goals, a fundamental flaw in the solution may have been (perhaps inadvertently) inserted right from the start.

Secondly, the treatment of carbon dioxide emission as the *de facto* benchmark for development is a sad anomaly. By contrast, many ordinary Africans engage in activities that sink rather than emit CO<sub>2</sub> and, hence, replenish rather than degrade the environment. In return, they continue to experience deteriorating climatic conditions and desertification, which are evidently the result of industrial activity in the developed world.

The reality is that Africa is yet to realize its industrial revolution. Not surprisingly, therefore, these countries grapple with confusion as to how to apply post industrial revolution remedies to their circumstances.

Solutions to African development, however, need not follow the same path as that of the developed world and the yardstick for African development should not be how accurately they mimic the West. Instead, relevant technical solutions for advanced applications in the developed world could be used to leapfrog intermediate technologies and applied directly, with benefit to the developing countries and the environment. Currently, as well as the foreseeable future, biomass is decidedly the thermal fuel of choice in rural sub-Saharan Africa. This should be the area to focus on in terms of research and investment.

Additionally, if equity was considered then concerted efforts would be made to invest in renewables for rural lighting in sub-Saharan Africa. With kerosene as the dominant lighting fuel, this choice is a matter of life and death for many African children (Mumford, 1987).

All may not be lost as many of these issues are in fact still being negotiated. However, a lot of ground would be gained if Africans themselves pressed for their case with vigour. Given the history of events, it would be naïve for Africa to expect that outsiders will volunteer on their behalf.

#### Appendix

Country	Rating	Last (3 May 2005)
1. India	BBB	(1, BBB)
2. Chile	BBB-	(2, BB+)
3. Brazil	BB	(3, BB+)
4. China	BB-	(6, B+)
5. Mexico	BB-	(5, B)
6. Korea	B+	(4, B+)
7. Peru	B	(7, B)
8. Morocco	B	(8, B)
9. Malaysia	B	(9, B)
10. Vietnam	CCC+	(10, CCC)
11. South Africa	CCC	(11, CCC)
12. Thailand	CCC	(13, CCC-)
13. Indonesia	CCC-	(12, CCC-)

*Afforestation:* This is the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the promotion of natural seed sources. Agroforestry projects that fulfil the specified requirements are included.

*Land Restoration:* This is the direct human-induced conversion of non-forested land to forested land occurring on lands that did not contain forest on 31 December 1989. Agroforestry projects that fulfil the specified requirements are included. Rehabilitation is the reestablishment of natural forest on existing degraded forest land.

*Carbon-Storage-Enhancement:* All projects based on Forest Management options according to Article 3.4 – Kyoto Protocol leading to biomass enrichment.

*Forest Conservation:* All projects based on protection and the promotion of 'wood energy' will be an important part of this. A further extension of the concept of switching from fossil fuels to sustainably grown fuel wood largely depends on solving the sustainable wood supply problem. The potential

demand and market for fuel-switch investments especially in the new EU member states is immense. For example, in Poland small district heating systems supply heat to more than 50% of private households. About 6 000 district heating systems in Poland – without taking into account industrial systems – run on outdated and inefficient coal-fired generation. Fuel wood afforestation of marginal agricultural areas could provide wood at prices that make wood energy competitive with fossil fuels and, at the same time, create job opportunities in rural areas.

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