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REVIEW OF THE POLICY AND LEGAL FRAMEWORK FOR IMPLEMENTING CLEAN
DEVELOPMENT MECHANISM PROJECTS IN UGANDA AND ITS IMPLICATIONS
FOR CLIMATE CHANGE MITIGATION

Mabasi Thadeus

COMMENT



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1

INTRODUCTION

Climate Change refers to an increase in average global temperatures. Records of surface temperatures over the last century show that there has been a gradual increase in average temperatures around the world. Although some of this is due to natural causes, it has also been argued that human activities that produce greenhouse gases and that alter the earth's surface may be accelerating the warming process.¹

Notwithstanding the fact that least developed countries' contribution to the total global emissions of Green House Gas (GHG)² is negligible, they are considered as the most exposed to the impact of climate change. For instance, Africa is already warmer by 0.5 degrees centigrade than it was 100 years ago. Temperature increase over many areas of Africa will be double the global average increase, and drought patterns stand to worsen catastrophically.³ Unlike developed countries with high adaptive capacities, developing countries have low adaptive capacities and are therefore identified as being the most vulnerable to the adverse effects of climate change.

The global response to climate change saw over 180 States sign and ratify the United Nations Framework Convention on Climate Change (UNFCCC). This paper sets out to examine the legal regime on climate change mitigation specifically the UNFCCC and the Kyoto Protocol. The paper also reviews the policy and legal framework for implementing Clean

Development Mechanism (CDM) projects in Uganda and the general challenges of implementing CDM projects in Uganda. The paper gives recommendations and a conclusion in the last section.

2

BACKGROUND TO CLIMATE CHANGE IN UGANDA AND THE INTERNATIONAL LEGAL REGIME FOR CLIMATE CHANGE MITIGATION

Uganda's Department of Meteorology releases regular reports on the impacts of climate change in Uganda.⁴ In 2002, it was established that the snow on the Rwenzori Mountains in western Uganda is retreating fast. Globally, the frequency of extreme weather events is expected to increase with climate change, which is also a trend seen in Uganda.⁵ Between 1991 and 2000, Uganda experienced seven droughts in a period of 10 years compared with eight droughts recorded over the 80-year period between 1911 and 1990. Towards the end of this period, there was an increase in the intensity and frequency of heavy rains, floods, landslides and droughts.⁶ In 1993/94 the country experienced drought and famine and in 1997/98 the phenomenon known as El Niño hit Uganda, resulting in heavy floods and landslides.⁷

Uganda's economy almost entirely depends on the exploitation of its natural resources and will remain so for the foreseeable future. Climate change in

1 UNIDO, *Negotiating the Transfer and Acquisition of Project-based Carbon Credits under the Kyoto Protocol*, (Vienna: UNIDO, 2007).

2 Green House Gases are defined under Article 1, para. 5 of the UNFCCC as 'those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation'. Under Annex A of the Kyoto Protocol these gases include: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride for the industrialised and transition.

3 Met Office Hadley Centre, *Informing Government Policy into the Future* (London: Met Office Hadley Centre, 2007).

4 P. Gwage, *Briefing Document on the UNFCCC and its Kyoto Protocol* (Kampala: Department of Meteorology, Ministry of Water, Lands and Environment, Uganda, 2004).

5 K.H. Olsen, *National Ownership in the Implementation of Global Climate Policy in Uganda* (Roskilde: Centre on Energy, Climate and Sustainable Development, 2006).

6 *Id.*

7 A. Bwango et al., *Reconciling National and Global Priorities in Adaptation to Climate Change: With an Illustration from Uganda* 61, 145-159 (Kampala: Environmental Monitoring and Assessment, 2000).

Uganda can largely be attributed to unsustainable utilisation of natural resources which has led to over exploitation and total loss.⁸ The demand and consumption for biomass energy is steadily increasing due to population pressure, absence of alternative cheap sources of energy, lack of awareness of energy efficient technologies, growing influx of refugees, increased biomass harvesting and poverty. Some industries also rely to some extent on biomass derived energy.⁹

2.1 Review of the International Legal Regime for Climate Change and its Significance for Climate Change Mitigation in Uganda

2.1.1 *The United Nations Framework Convention on Climate Change and the Kyoto Protocol*

The UNFCCC aims at stabilising concentration of greenhouse gases in the atmosphere.¹⁰ As one of the means to monitor climate change, the parties to the Convention undertake to periodically update, publish and make available to the Conference of Parties national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of Parties.¹¹

One of the major principles in the Convention is the precautionary principle.¹² Controversially, regulatory action is not necessarily the first required action of states when applying the precautionary principle.¹³ The first option of states is to carry out more research to collect more and new types of data

and to monitor the status of the stocks. The rationale for this is to reduce the uncertainties and consequently the risks before adopting regulations.¹⁴

Under the UNFCCC, a party's developmental status determines the nature of their involvement in the regime. Thus, in accordance with the principles of common but differentiated responsibilities and the precautionary principle explained above, Uganda carried out a National Inventory of Sources and Sinks of Greenhouse gases in 1993 and was partly updated in 1995.¹⁵ The GHG inventory was based on the 1994 emissions and the IPCC guidelines were used to enable comparisons. The emission categories covered in this inventory are energy, industrial processes, agriculture, solvents, land-use change and forestry as well as waste. The gases addressed from these sectors are: Carbon dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O), Nitrogen Oxides (NO_x), Sulphur dioxide (SO₂) and Non-Methane Volatile Organic Compounds (NMVOC).¹⁶

The inventory gives a comprehensive list of emission of greenhouse gases by source and removals by sinks in Uganda. It also contains a number of recommendations, including enhancement of legal, regulatory and policy framework. The recommendations are however of a general nature, they do not contain any specific details on the modalities of such a framework.¹⁷ In terms of greenhouse gas emissions and removals, the key GHG is CO₂. Agricultural activities are the biggest contributor to all the other GHG emissions.¹⁸

With respect to mitigation measures, Uganda has put emphasis on no-regrets mitigation option measures through the Uganda Enabling Project and the East African power study which carried out a GHG mitigation assessment in the energy sector.¹⁹ Four measures were considered by the studies, and these

8 Magezi Akiiki, *Overview of Climate Change and its Impacts on Socio-economic Development in Uganda – Exploring the Past, Present and Future Trends* (Entebbe: Department of Meteorology, 2002).

9 *Id.*

10 Article 2, United Nations Framework Convention on Climate Change, New York, 9 May 1992 [hereafter UNFCCC].

11 *Id.* Articles 4(1)(a) and 12.

12 *Id.* Article 3.

13 Nicolas de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (Oxford: Oxford University Press 2002).

14 *Id.*

15 Department of Meteorology, Uganda Initial National Communication to the United Nations Framework Convention on Climate Change (Kampala: Department of Meteorology, Ministry of Water, Lands and Environment, 2002).

16 See Department of Meteorology, note 15 above.

17 See Gwage, note 4 above.

18 *Id.*

19 *Id.*

are: petrol/ethanol blending, elimination of Residual/fuel oil in industry, hydropower based mitigation options, and photovoltaic-based mitigation options for reduction of GHG in East Africa, a hydropower export strategy has been proposed under the East African power study. Studies on a number of sites have been completed. One of these studies is the Vulnerability, Adaptation and Mitigation Assessment study carried out in 1995. It looked at the sectors of water resources, crops, forestry as well as livestock and rangelands. Mitigation analysis was done for the energy sector. Although climate change impacts upon Uganda are difficult to quantify due to uncertainty about the rate of climate change and its magnitude, the Uganda country study identified many specific impacts, which might be anticipated in agriculture, livestock and rangelands, forestry and water resources. The study also identified and recommended a range of adaptation measures which could be implemented to counter the identified impacts.²⁰

With regard to technology innovations and transfer, in accordance with the principle of common but differentiated responsibility,²¹ Uganda is in the process of putting in place plans of assessing its technology needs and technology transfer barriers under the Enabling Activities Project Phase II.²²

In terms of Systematic Observations,²³ Uganda has carried out research in the following areas: El Nino and Southern Oscillation Studies; Climate change studies including the: - Inventory of GHGs; - Vulnerability and adaptation assessments; - Policy implications of implementing the UNFCCC; - CDM Studies; Temperature and rainfall trends; Hydroclimatic studies; and Rainfall variability.²⁴

The UNFCCC is not specific insofar as reduction targets are concerned. Under the Convention, industrialised nations committed themselves to reduce their greenhouse gas emissions to 1990 levels,²⁵ but there was no specified time period for

fulfilling this commitment. This commitment does not compel the industrialised countries to take swift action for the immediate realisation of the Convention objectives. However, the Kyoto Protocol to the UNFCCC addressed these shortcomings by *inter alia* imposing specific mitigation commitments on the parties to the UNFCCC.

The UNFCCC is supplemented by the Kyoto Protocol, which imposes more specific mitigation commitments.²⁶ It sets binding numerical targets for the limitation and reduction of greenhouse gas emissions during the period 2008-2012.²⁷ The Kyoto Protocol enjoins Annex I parties, to implement elaborate policies and measures, in accordance with their national circumstances, to achieve their quantified emission limitation and reduction commitments.²⁸ These measures include enhancement of energy efficiency, enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol, promotion of sustainable forest management practices, afforestation and reforestation; research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies.²⁹

In terms of promotion of sustainable forest management practices envisaged by the Kyoto Protocol, the United Nations Framework Convention on Climate Change at its meeting in Bali in December 2007 culminated in a key decision on Reducing Emissions from Deforestation in Developing Countries (REDD). The Bali Conference enjoins countries to recognise the

²⁰ *Id.*

²¹ See Article 4(1) (c) of the UNFCCC.

²² See Department of Meteorology, note 15 above.

²³ See Article 4.1 (g) of the UNFCCC.

²⁴ *Id.*

²⁵ See Article 4(2) (b) of the UNFCCC.

²⁶ The Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 11 December 1997, UN Doc FCCC/CP/1997/L.7/add.1.

²⁷ *Id.* Article 3 read together with Annex A to the Protocol.

²⁸ Article 3 of the Kyoto Protocol requires Parties included in Annex I which are mostly developed countries, to individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B.

²⁹ *Id.* Article 2 (1).

contribution from deforestation to global anthropogenic greenhouse gas emission and to strengthen and support ongoing efforts to address deforestation and forest degradation.³⁰ The REDD scheme provides a promising option for reducing deforestation as well as promoting carbon credit as an alternative income-generating activity within forest countries. The Kyoto protocol provides for three market mechanisms to increase the cost-effectiveness of the GHG emission reductions. Clean Development Mechanism is the only one applicable to developing countries like Uganda and it is examined below:

2.1.2 Clean Development Mechanism

In addition to domestic mitigation efforts, Annex I parties can utilise three market mechanisms to increase the cost-effectiveness of their GHG emission reductions.³¹ The only one of the three that involves developing countries is the Clean Development Mechanism. The CDM is a mutually beneficial mechanism under which Annex I parties invest in clean development projects in non-Annex I countries. The CDM benefits developing countries by giving them access to technology and investment that they would be unlikely to get otherwise, which helps them to develop sustainably, and thereby contributes to the ultimate objective of the UNFCCC.³² Annex I countries also benefit because certified clean development projects generate 'Certified Emission Reductions' (CERs) which they can use towards meeting their emission reduction targets.³³ Another benefit for developing countries is that a share of the proceeds from CDM projects goes into an adaptation fund for parties that are particularly vulnerable to the effects of climate change.³⁴ The three eligibility criteria for countries

to participate in CDM are: voluntary participation in the CDM; the establishment of a national CDM authority; and, ratification of the Kyoto Protocol.³⁵ Uganda meets the eligibility criteria for applying CDM. CDM has played an important role in climate change mitigation in Uganda. The next subsection examines the role of CDM in climate change mitigation in Uganda by making a review of various CDM projects that have been implemented in Uganda.

2.1.2.1 The Role of CDM in Climate Change Mitigation in Uganda

The role of CDM in climate mitigation can be demonstrated by examining the CDM projects in Uganda. Since 2000, mitigation issues are increasingly being dealt with separately from the Climate Convention under the CDM agreed upon in the Kyoto Protocol 1997. Various projects have been put in place to address the CDM. Key projects are: the first one is the Forest Absorbing Carbon-dioxide Emissions (FACE) project. This project started in 1994 and was carried out under the Joint Implementation programme prior to the CDM. The FACE project is still ongoing in Mt. Elgon in Eastern Uganda and the Kibale National Parks in Western Uganda and is run by the Uganda Wildlife Authority (UWA). Apart from storing carbon, the project has played an important role in rehabilitating degraded forest areas.³⁶

The second carbon project is the CDM component of the West Nile Electrification project, where the credits were bought by the World Bank Prototype Carbon Fund. Project activities are to install and operate a 3.5 MW hydroelectric power plant and an HFO-fired 1.5 MW generator in three rural municipalities of north-western Uganda. Some of the spin-offs are to promote socio-economic development and reduce emissions of GHGs by

30 See UNFCCC COP-13 Decision on Reducing Emissions from Deforestation in Developing Countries, available at http://unfccc.int/files/meetings/cop_13/application/pdf/cp_redd.pdf.

31 The market mechanisms are: joint implementation (Article 4), emissions trading (Articles 6 and 17), and the clean development mechanism (Article 12).

32 See Kyoto Protocol, note 26 above, Article 12(2).

33 *Id.* Article 12(3).

34 *Id.* Article 12(8).

35 *Id.* Article 5.

36 Chris Lang and Timothy Byakola, 'A Funny Place to Store Carbon': UWA-FACE Foundation's Tree Planting Project in Mount Elgon National Park, Uganda (Kampala: Climate and Development Initiatives, 2006).

replacing existing diesel and petrol-based electricity generators and fuel trucks from Kenya.³⁷

The third project, Uganda Plan Vivo Project on Carbon Trading, supports small farmers in planting trees in the Bushenyi and Kasese districts of western Uganda. The carbon credits generated are bought by the UK-based company TetraPak, and the pilot project is being implemented by two Non Government Organisations (NGOs): Care Uganda and EcoTrust. They act as brokers and facilitate the organisation of the small farmers. Among the four projects supporting the establishment of a Designated National Authority (DNA) for the CDM, the first two projects have been completed. The CDM Susac project funded by the EU/UK aimed at identifying investments in key sectors, primarily energy, and at identifying market players and developing operational secretariats to coordinate national and international CDM activities. The UNCTAD/Earth Council project had similar aims. It wanted to engage national stakeholders in taking steps to designate a CDM National Authority, to establish a DNA and to develop a CDM project portfolio.

The foregoing discussion illustrates that CDM has played an important role in climate change mitigation in Uganda. The CDM projects in climate change mitigation have resulted in building technical capacity in key, mainly government, institutions and raising public awareness about the climate change; assessing national capacity building needs to implement the CDM, supporting the investment promotion agencies in Uganda in their efforts to attract CDM investments, developing skills on carbon finance and developing a portfolio of potential CDM projects and rehabilitating degraded forests.

Uganda's UNFCCC/Kyoto Protocol implementation strategy involves putting in place policies and laws for the relevant policies. The next section makes a review of these policies and laws and examines their

significance for the implementation of CDM Projects in Uganda.

3

POLICY AND LEGAL FRAMEWORK FOR THE IMPLEMENTATION OF THE CLEAN DEVELOPMENT MECHANISM IN UGANDA

A number of policies have been adopted for the implementation of the clean development mechanism in Uganda. The following subsection makes a review of key policies and projects in various sectors that have been adopted for the implementation of the clean development mechanism in Uganda and their impact on climate change mitigation.

3.1 The Policy Framework for the Implementation of Clean Development Mechanism in the Forestry Sector

Uganda's forest cover is estimated to be about 49,500 km² of which 99 per cent are tropical high forests and savannah woodlands and one per cent plantations. The western region of the country; Kibale, Kabarole and Bundibugyo districts have more than 60 per cent of the country's closed forests, while the central region has a little more than 20 per cent. The forest and woodland resources of Uganda are found both within and outside protected areas.³⁸ Apart from few large blocks of intact forests, the rest of the forest and woodland estate consist of small, scattered patches and are therefore difficult to manage centrally.³⁹ As regards climate change mitigation, the focus in the forest sector has been on enhancing the management of forests. The

³⁷ For details, see CDM Executive Board, Clean Development Mechanism Simplified Project Design Document for Small Scale Project Activities (Version 2), available at <http://cdm.unfccc.int/UserManagement/FileStorage/QQMIYUT47K73D9CVAETZNDT7G5DQZI>.

³⁸ See National Environment Management Authority (NEMA), National State of Environment Report 2000/2001 (Kampala: National Environment Management Authority, 2000/01).

³⁹ *Id.*

importance of forests in climate change mitigation lies in the fact that forests trap and store carbon dioxide thereby acting as carbon sinks. It is estimated that forests currently store more than one trillion tons of carbon twice the amount found floating free in the atmosphere.⁴⁰ Various policies and laws have been enacted with a view to realising the potential of forests in carbon sequestration. The next subsection makes a review of the policies that are relevant to the implementation of CDM in the forestry sector.

3.1.1 The Vision 2025

The Government's Vision 2025 is a long-term national development perspective, whose aim is to achieve a Uganda with a 'prosperous people, harmonious nation and beautiful country'.⁴¹ Among its main objectives are sustainability, conservation and regeneration of both man-made and natural capital.⁴² Deforestation is identified under the vision as one of the major causes of soil degradation and as a result, the Vision dedicates a full section on forest resources and it identifies deforestation as one of the key issues in forest management which is a major form of land degradation. The vision advocates employing cleaner energy sources and technologies to reduce emissions of carbon dioxide and pollutants that cause acid rain and other environmental problems.

The significance of the vision in terms of CDM projects lies in the fact that it calls for improving forest management, expanding forest areas and encouraging tree planting to increase the size of carbon sink in the country and adopting agricultural practices which reduce emissions of methane and nitrous oxide.⁴³

3.1.2 The Uganda Forestry Policy 2001

The policy has as its main objective the establishment of an integrated forest sector that achieves sustainable increases in the economic, social and environmental benefits from forests and trees by the people of Uganda, especially the poor and vulnerable.⁴⁴

The policy makes provision for the protection of Permanent Forest Estate (PRE) under government trusteeship and the development and sustainable management of natural forest on private land. The rationale for this provision is to maximise benefits from forests. Stakeholders envisaged by the policy in the management of forests include local government, the private sector, local communities and farmers in the conservation and sustainable use of forest biodiversity. As guiding principles to forest management in Uganda, the policy requires that forests should be managed to meet the needs of this generation without compromising the rights of future generations and forest sector development should safeguard the nation's biodiversity and environmental services through effective conservation strategies.

The policy liberalises forestry management by stating that the central government should withdraw from activities that can be carried out more effectively by the private sector or other stakeholders, but develop core functions of policy development and regulation; more forest resources should be managed through devolved responsibility wherever practical and advisable; the public's participation in the management of the country's forests should be actively encouraged. It also affords a place for the civil society in the management of forests.

40 FAO Newsroom, Forests and Climate Change: Better Forest Management has Key Role to Play in Dealing with Climate Change, available at <http://www.fao.org/newsroom/en/focus/2006/1000247/index.html>.

41 Ministry of Finance, Planning and Economic Development, *Uganda Vision 2025, A Strategic Framework for National Development* (Kampala: Ministry of Finance, Planning and Economic Development, 1998).
42 *Id.*

43 *Id.* at 283.

44 Republic of Uganda, Ministry of Water, Land and Environment, *The Uganda Forestry Policy, 2001*, available at <http://www.sawlog.ug/downloads/The%20Uganda%20Forestry%20policy.pdf> and Republic of Uganda, Ministry of Water, Lands and Environment, *The National Forest Plan, 2002*, available at http://www.nfa.org.ug/docs/national_forest_plan.pdf.

The policy enjoins government to promote the sustainable management of natural forests on private lands. This will promote sustainable production of forest resources in light of integrated land use and expanding agricultural need.⁴⁵ The policy lays down comprehensive implementation strategies including raising awareness of the ownership of forests and trees on private land; encouraging owners to set aside private forests as permanent forest land; investigating options for economic, social and cultural incentives to encourage private owners to maintain and manage natural forests; develop capacity of institutions such as local governments, traditional institutions and user groups and to sustainably manage private forests.

In terms of implementing CDM projects the policy promotes public participation and partnership between governments and foreign companies in climate change issues. CDM projects under this policy aim to promote forest conservation through the promotion of reforestation and reforestation and controlling deforestation. However, this policy does not have specific provisions for climate change and the implementation of CDM projects. Therefore, it is not very significant for the implementation of CDM projects in Uganda.

3.1.3 The National Environment Management Policy (NEMP) 1994

The NEMP is a result of the National Environment Action Plan (NEAP) process.⁴⁶ Consequently, the NEMP led to the enactment of the National Environment Act. As its main policy goal, NEMP aims to establish sustainable social and economic development, which maintains or enhances environmental quality and resource productivity on a long-term basis that meets the needs of the present generations without compromising the ability of future generations to meet their own needs.⁴⁷

The objectives of the policy in relation to forestry management are: to manage sustainably forest resources in protected areas, public and private land; and to promote increased production by the private sector and the communities. The policy underscores the role of the Forestry Department as a supervisory and regulatory body. It also recognises the importance of local communities' involvement in the planning and management of Protected Areas and in the sharing of benefits and conservation of forest resources. Collaboration on a multi-sectoral basis is also encouraged. These principles are reflected in the National Forestry and Tree Planting Act.

This policy however does not have clear and pointed provisions on climate change and the implementation of CDM projects. The only reasonable inference that can be drawn in relation to climate change mitigation is that the economic incentives under the policy may include financial support from CDM supporting countries.⁴⁸

3.2 The Policy Framework for the Implementation of the CDM in the Energy Sector

The energy sector is one of the most important sectors for climate change mitigation. It should be recalled that carbon dioxide is a major contributor to climate change. Wood fuels, petroleum and hydroelectricity characterise energy use in Uganda. It has been estimated that wood fuels alone account for over 94 per cent of the total energy consumption in Uganda, petroleum accounts for about five per cent, while hydroelectricity accounts for only about one per cent.⁴⁹ Uganda imports all its petroleum products.⁵⁰ In the final analysis, over reliance on wood fuels and petroleum products leads to more emission of carbon dioxide than it is the case with hydroelectricity. Policies, laws and projects therefore

⁴⁵ See Uganda Forestry Policy, note 44 above.

⁴⁶ The Republic of Uganda, Ministry of Water, Lands and Environment, *The National Environment Management Policy for Uganda*, 1994.

⁴⁷ Ministry of Finance, Planning and Economic Development (MoFPED), *Vision 2025: A Strategic Framework for National Development*, Volume 1 (Kampala: Ministry of Finance, 1999).

⁴⁸ Peter A. Minang et al., 'National Forest Policy as a Platform for Biosphere Carbon Management: The Case of Community Forestry in Cameroon', 10 (3) *Environmental Science & Policy* 204 (2007).

⁴⁹ The Republic of Uganda, Ministry of Water, Lands and Environment, *The National Environment Action Plan*, 1995.

⁵⁰ *Id.*

need to target reduction in the use of wood fuels and petroleum products in favour of hydroelectricity. The next subsection makes a review of some of the policies that have implications for the implementation of CDM projects in the energy sector.

3.2.1 *The National Energy Policy, 2002*

The National Energy Policy is the main policy that deals with energy use in Uganda. The overall policy goal is to increase the use of modern renewable energy, from the current four per cent to 61 per cent of the total energy consumption by the year 2017.⁵¹ The policy aims to; establish the availability, potential and demand of the various energy resources in the country; to increase access to modern, affordable and reliable energy services; to improve energy governance and administration; and to stimulate economic development and manage energy-related environmental impacts.⁵² The policy focuses on the development and use of renewable energy resources such as solar energy.⁵³

Under the policy, modern renewable energy means renewable energy resources that are transformed into modern energy services like electricity, which can be generated from water power, wind power, solar energy, geothermal energy and biomass cogeneration. It also refers to clean fuels derived from renewable energy resources like biogas, ethanol, methanol, hydrogen or solar water heating as well as biomass utilised in efficient biomass technologies, like improved charcoal stoves and improved firewood stoves.⁵⁴ Renewable sources of energy are those sources that are replenished continuously by natural processes. These include solar energy, hydropower, biomass, wind and geothermal among others. Uganda is richly endowed with renewable energy resources for energy production and the provision of energy services. The total estimated electrical power potential is about 5300 MW. These resources however, remain largely

unexploited, mainly due to the perceived technical and financial risks.

The main focus for this policy with respect to renewable energy resources is solar energy owing to the fact that Uganda has plenty of sunshine, giving solar radiation of about 4-5 kWh/m²/day.⁵⁵ This level of insulation is quite favourable for all solar technology application. Solar energy applications in Uganda include solar photovoltaic (PV), water heating, cooling and crop drying.⁵⁶

One of the specific objectives for the exploitation of Uganda's renewable energy resources which is relevant to the implementation of CDM projects in Uganda's commitment to greenhouse gas emissions reductions under the Kyoto Protocol. In particular, Government aims to provide the necessary framework for private sector investors in renewable energy projects to benefit from the available facilities in emissions trading. Solar Energy Uganda limited has obtained Global Environment Facility (GEF) funds to install 72,000 solar household systems in rural Uganda. This is expected to reduce household kerosene use by 28,630 tons by 2010. This is associated with carbon dioxide emission reduction of 18,000 tons per annum worth approximately US\$ 50,000 when 72,000 systems are in place.⁵⁷

3.2.2 *The National Environment Management Policy*⁵⁸

One of the objectives of the NEMP is to meet the national energy needs through increased use of hydropower, improved efficiency of energy use, increased use of alternative energy sources, increased production of (plantation and on-farm) trees and promotion of exploration and production of fossil

51 The Republic of Uganda, Ministry of Energy and Mineral Development, *The Energy Policy for Uganda, 2002*.

52 *Id.* Part 3.2.

53 *Id.* Part 1.2.4.

54 *Id.*

55 *Id.*

56 *Id.*

57 Emmanuel Kasimbazi, 'In the Defence of Prosperity: Challenges of Implementing Clean Development Mechanisms in Uganda', *16 Year Book of International Environmental Law* 285 (2005).

58 See The National Environment Management Policy, note 46 above.

fuels.⁵⁹ The policy lays down guiding principles for the energy sector that are relevant for the implementation of the CDM. The policy, for instance, calls for promotion of private woodlots, especially in wood deficit areas, and for private sector involvement in energy exploration, development and distribution, including hydroelectric power and fuel wood (including peri-urban) plantations.⁶⁰ This widens the range of potential participants in CDM projects to include sectors that may be more efficient in this regard than the government. The policy also calls for the de-centralisation of energy planning to district and local levels to take into account local needs and opportunities.⁶¹ This ensures public participation in the implementation of CDM projects at all levels of development.

The policy lays down strategies for the energy sector in order to realise its objectives. Those relevant to the CDM are: encouraging the private sector to generate and distribute hydro-electricity by removing the monopoly in generating, transmitting and distributing electricity by the Uganda Electricity Distribution Company Limited (UEDCL).⁶² It is thought that this will increase the amount of power generated, thereby reducing the level of reliance on fossil fuels and pressure on the forest resources. However, CDM and climate change is not specifically articulated in this policy.

59 The objective of the policy can be viewed as possessing a weakness when it seeks promotion of exploration and production of fossil fuels. Climate change is occurring as a result of human activity having caused higher concentrations of greenhouse gases (like Carbon dioxide) in the earth's atmosphere leading to increased trapping of infrared radiation. As a result the lower atmosphere has warmed and continues to warm, changing weather and climate. Most of the increase in carbon dioxide comes from burning of fossil fuels such as oil, coal and gas (See Michael Kerr, Tort Based Climate Change Litigation in Australia (Melbourne: Discussion Paper Prepared for the Climate Change Litigation Forum, hosted by Friends of the Earth International in London on March 2002, available at http://www.acfonline.org.au/uploads/res_climate_change_litigation.pdf). The policy therefore by promoting the exploration of fossil fuels is bound to reverse the benefits of carbon reduction derived from the implementation of various CDM projects under the energy sector.

60 See The National Environment Management Policy, note 46 above.

61 *Id.*

62 *Id.*

3.3 The Policy Framework for the Implementation of CDM under the Wetlands Sector

With an estimated coverage of 30,000 square kilometers (thirteen per cent) of Uganda's land surface,⁶³ wetland ecosystems constitute an important natural resource in Uganda, both from ecological and from social and economic point of view.⁶⁴ Wetlands affect the levels of atmospheric carbon in two ways. First, many wetlands are carbon reservoirs. Carbon is contained in the standing crops, trees and other vegetation and in litter, peats, organic soils and sediments which have been built up, in some instances, over thousands of years. It has been estimated that wetlands hold 35 per cent of the total terrestrial carbon.⁶⁵ The magnitude of storage depends upon wetland type and size, vegetation, the depth of wetland soils, ground water levels, nutrient levels and other factors.⁶⁶ Such carbon reservoirs may supply large amounts of carbon to the atmosphere if water levels are lowered or land management practices result in the oxidation of soils. Second, many wetlands also continue to sequester carbon from the atmosphere through photosynthesis by wetland plants; many also act as sediment traps for carbon-rich sediments from watershed sources.⁶⁷ The wetlands sector has considerable potential for the CDM. A number of policies, laws and programmes are in place for the protection and sustainable management of wetlands. Those relevant for the implementation of CDM are reviewed below:

3.3.1 National Policy for the Conservation and Management of Wetland Resources (1995)

The overall aim of this policy is to promote the conservation of Uganda's wetlands in order to sustain

63 *Id.*

64 R.J. Bakema and L. Iyango, Engaging Local Users in the Management of Wetland Resources: The Case of The National Wetlands Programme, Uganda (Nairobi: IUCN-Eastern Africa Programme, Forest and Social Perspectives in Conservation, Working Paper No.3, 1999).

65 Jon Kusler, Climate Change in Wetland Areas Part II: Carbon Cycle Implications (Berne, NY: Institute for Wetland Science and Public policy, 1999), available at <http://www.usgcrp.gov/usgcrp/Library/nationalassessment/newsletter/1999.08/Wet.html>.

66 *Id.*

67 *Id.*

their ecological and socio-economic functions for the present and future wellbeing of the people.⁶⁸ One of the goals of the policy is to maintain the functions and values of wetlands throughout Uganda and to promote the recognition and integration of wetlands functions in resource management and economic decision making with regard to sector policies and programmes in other areas such as forestry, agriculture and environmental management.⁶⁹

One of the strategies of the policy is to ensure that there is no drainage of wetlands unless justified by the most important environmental management requirements. It is only those uses that have been proved to be non-destructive to wetlands that can be allowed or encouraged and any decisions to use wetlands must consider the requirements of all other users in the community.⁷⁰ All wetlands are a public resource, controlled by the government on behalf of the public. Therefore, no leasing of any wetland to any person in Uganda at any moment and for whatever reason is allowed.⁷¹ It is submitted that the trust obligation imposed on the state ensures quick implementation and sustenance of CDM projects in the wetlands sector.

The policy makes provision for recovery of previously drained wetlands, otherwise referred to as restoration.⁷² Many wetlands have been drained or modified especially in south-west and eastern Uganda. As a strategy therefore, government may require that some wetlands which have already been drained, should be allowed to regenerate.⁷³ One of the weaknesses of this policy in relation to climate change is that it does not specifically make provision for the implementation of CDM projects in the wetland sector.

3.3.2 *The National Environment Management Policy*

The main objective of the NEMP in relation to wetlands is to promote the conservation of wetlands to sustain their ecological and socio-economic

functions for the present and future well-being of the people.⁷⁴ The policy recognises that wetlands are important and productive natural resource systems which should be sustainably managed.⁷⁵ It also calls for the involvement of the local authorities/users in wetland resource planning and management.⁷⁶ This ensures participation in the CDM projects at all levels. Public participation is important as it cuts implementation costs and promotes awareness and creates a sense of responsibility among members of the public regarding environmental conservation and climate change.

The policy also lays down strategies for the management of wetlands resources. It requires the carrying out of a full inventory of major wetlands to determine their location, status, ecological and socio-economic values, as well as their capacity to perform their various functions on a sustainable basis.⁷⁷ It can be inferred that through this inventory, it is possible to identify wetlands that may be appropriate subjects for CDM projects. However, the policies (already discussed above), lack specific provisions on climate change and particularly CDM. Therefore, its significance for the implementation of CDM projects is minimal.

3.3.3 *The Wetland Sector Strategic Plan 2001-2010*

The overall goal for the Wetland Sector Strategic Plan is to increase the contribution of Uganda's wetlands to human welfare and the health of the environment.⁷⁸ The strategic objectives of the plan include the development and maintenance of an institutional framework for the management of wetlands.⁷⁹ Key actions to be undertaken here include ensuring allocation from the Government recurrent budget of sufficient monies to cover the recurrent costs of the national lead agency which is

68 The Republic of Uganda, National Policy for the Conservation and Management of Wetland Resources, 1995.

69 *Id.*

70 *Id.* Part 7.2.

71 *Id.* Part 7.6.

72 *Id.* Part 7.7.

73 *Id.*

74 See The National Environment Management Policy, note 46 above.

75 *Id.*

76 *Id.*

77 *Id.*

78 The Republic of Uganda, The Wetland Sector Strategic Plan 2001-2010 (Kampala: Ministry of Water, Lands and Environment, 2001).

79 *Id.*

the Wetland Inspection Division (W.I.D); training and equipping District Environment Officers to carry out wetlands management functions; supporting the formation and operation of District and Local Environment Committees; and establishing and maintaining a National Wetland Inter-Agency Co-ordination Committee.⁸⁰ A strong institutional framework under the plan has a big part to play in the implementation and success of CDM projects in the wetlands sector. Institutions established under this plan do not specifically deal with the implementation of CDM projects. Therefore, this plan has little significance for the implementation of CDM projects in Uganda.

3.4 Legal Framework for the Implementation of the CDM in the Forestry Sector

3.4.1 Constitution of the Republic of Uganda, 1995

The Constitution of the Republic of Uganda which is the supreme law of the land empowers Parliament to enact laws to protect and preserve the environment from abuse, pollution and degradation and also to promote measures intended to manage the environment for sustainable development and to promote environmental awareness.⁸¹ The constitution enjoins the state to protect important resources, including land, water, wetlands, oil, minerals, fauna and flora on behalf of the people of Uganda.⁸² The Constitution empowers the Government or (where appropriate local government) to hold in trust for the people and protect natural forest reserves and any land to be reserved for ecological and tourism purposes for the common good of all citizens.⁸³

The trust obligation imposed on the state promotes the implementation of the CDM in two ways. First, CDM projects can be more easily implemented by the government than would have been the case if

the forestry resources were subject to private ownership, which would involve a lengthy process of land acquisition for the implementation of the projects. Second, the trust obligation bars the government from leasing out or otherwise alienating the forests referred to.⁸⁴ This ensures subsistence of CDM forest projects. It should however be noted that the constitution does not make specific provision for climate change and CDM. Therefore its significance for climate change can only be inferred under the public trust doctrine.

3.4.2 The National Environment Act⁸⁵

The main objective of the National Environment Act is to provide for the sustainable management of the environment. The Act establishes the National Environment Management Authority (NEMA) as a coordinating, monitoring and supervisory body. NEMA is the main institution responsible for the operation of the Environmental Impact Assessment (EIA) regime.⁸⁶ Projects which must undergo the EIA process include forestry related activities such as reforestation and afforestation.⁸⁷

Under the Act, NEMA is required, in consultation with the lead agency which is the National Forestry Authority (NFA) to issue guidelines and prescribe measures for the management of all forests in Uganda.⁸⁸ These guidelines have to take into account forests in protected areas, including forest reserves, national parks and game reserves; and forests on lands subject to interests held by private persons.⁸⁹ NEMA, in consultation with the National Forestry Authority, is given powers to expressly exclude human activities in any forest area by declaring it a specially protected forest.⁹⁰

⁸⁰ *Id.*

⁸¹ The Constitution of the Republic of Uganda, 1995, Article 245.

⁸² *Id.* Principle XIII.

⁸³ *Id.* Article 237 (2) (b).

⁸⁴ This position is fortified by Section 44 (4) of the Land Act, Cap 227 of Laws of Uganda, 2000.

⁸⁵ The National Environment Act, Cap 153 of Laws of Uganda, 2000.

⁸⁶ *Id.* Section 6 (1) (f).

⁸⁷ *Id.* Third Schedule. The detailed EIA process is regulated by the Environmental Impact Assessment Regulations, 1998.

⁸⁸ *Id.* Section 45 (1).

⁸⁹ *Id.* Section 45 (2).

⁹⁰ *Id.* Section 45.

The main challenge of this Act in relation to the implementation of CDM projects is that it does not independently and specifically address climate change and CDM projects. It is however submitted that the establishment of NEMA and the obligations imposed on it in relation to forest management has the effect of ensuring that the implementation of CDM projects is integrated into the overall environmental legal framework of Uganda. This is advantageous to the extent that such integration guarantees facilitation of the implementation process by making provision for it in the government's recurrent budget.

3.4.3 The National Forestry and Tree Planting Act, 2003

The National Forestry and Tree Planting Act is the main Act dealing with forestry resources management in Uganda. The objective of this Act is to promote the conservation, sustainable management and development of forests for the benefit of the people of Uganda. The Act promotes tree planting and management of forest produce. This provision is relevant for afforestation for CDM purposes. The Act also provides a legal framework for the declaration of forest reserves for purposes of protection and management of forests and forest produce provides for the sustainable use of forest resources and promotes enhancement of the productive capacity of forests.⁹¹ A key provision of the Act requires that every project or activity which may, or is likely to have a significant impact on a forest shall undergo EIA.⁹² The Act further makes provisions for collaborative management of forests whereby a responsible body may enter into a collaborative forest management arrangement with a forest user group for the purposes of managing a central forest or a local forest reserve.⁹³ The provision allowing ordinary citizens to own private forest plantations encourages investment in the forestry sector for the implementation of CDM projects.

A number of CDM projects have been implemented in the forestry sector. These include major projects accounting for emission offsets such as that from 27,000h of regenerated forest in Kibale and Mount Elgon National Parks amounting 15,00,000 tonnes of carbon dioxide worth US\$ 45 million; and that from 7100h in Bukabaleba forests and the adjoining Norwegian managed forest amounting to 4 million tons of carbon dioxide worth about US\$ 12 million.⁹⁴ In addition, the Institute Fur Umwelt Und Entwicklung (IUE) is being promoted by a German investor, targeting commercial forests and planning a project at the Kikondwa Forest Reserve. The Bakojja Wood Country Ltd a locally funded firm which is interested in the commercial forestry in Mubende District in central Uganda is undertaking ground work for the implementation of the CDM.

It can be observed that while majority of the CDM projects have been implemented in the forestry sector, the law has not played a major role in their implementation. For all purposes and intent the law does not adequately provide for CDM projects. All that the law does is give general guidelines for the conservation of forests in Uganda. There is an urgent need to make specific provision for CDM projects under the Act.

3.5 Legal Framework for the Implementation of the CDM in the Energy Sector

3.5.1 Constitution of the Republic of Uganda, 1995

The Constitution contains provisions that have implications for the implementation of CDM projects in the energy sector. Under the National Objectives and Directive Principles of State Policy, it is provided that the state shall promote and implement energy policies that will ensure that people's basic needs and those of environmental preservation are met.⁹⁵

91 The National Forestry and Tree Planting Act, 2003, Section 6.

92 *Id.* Section 38.

93 *Id.* Section 15.

94 Bwangu Apuuli, 'Assessment of the Potential Economic Benefit of Carbon Trade to Uganda (Maastricht: Maastricht School of Management, 2004).

95 The Constitution of Uganda, 1995, Principle XXVII (iii).

However, the Constitution is silent on climate change issues in the energy sector. The Constitution just makes a general provision on environmental preservation in the energy sector. However, a reasonable inference can be made that the fulfilment of the environmental preservation obligation under the energy sector may require government to take a number of steps including the implementation of CDM projects on solar energy and enhanced hydropower generation.

3.5.2 The Electricity Act⁹⁶

The Electricity Act provides for the establishment of the Electricity Regulatory Authority (ERA)⁹⁷ whose functions include: issuing licenses for the generation, transmission, distribution or sale of electricity; controlling activities in the electricity sector; and liberalising and bringing competition in the electricity sector.⁹⁸ The Act makes provision for rural electrification. Section 62 provides that the Government shall undertake to promote, support and provide rural electrification programmes through public and private sector participation in order to achieve equitable regional distribution and access to electricity; maximise the economic, social and environmental benefits of rural electrification subsidies; promote expansion of the grid and development of off-grid electrification; and stimulate innovations within suppliers.

A number of rural electrification projects under CDM have been implemented in Uganda. For instance, the West Nile Electrification Project in Uganda, with financial support from the Prototype Carbon Fund (PCF), is part of the Government of Uganda's Energy for Rural Transformation (ERT) Scheme, supported by the World Bank and various bilateral partners. The project involves the construction of two small hydropower stations, efficient diesel backup facilities, and the rehabilitation of the mini-grid in the region. The initiative will tackle emissions from highly inefficient diesel and petrol-fuelled generators and engines in the district of Arua and Nebbi in north-western Uganda.⁹⁹

Another significant project is the Kilembe Grid Extension Project. The objective of this project is to extend the transmission and Low Voltage (LV) distribution lines from a current hydro facility (originally built to provide power to a now-closed copper mine) to nearby villages and trading centres that are not connected to the grid.¹⁰⁰ The result would be a more reliable supply of electricity that will help spur local economic development at the same time displacing polluting and expensive diesel fuel, as well as kerosene and fuel wood use. The provisions of this Act have far reaching implications for the implementation of CDM projects in the energy sector because it provides for rural electrification, under which most of the CDM projects in Uganda are being implemented.

3.6 Legal Framework for the Implementation of CDM in the Wetlands Sector

3.6.1 The National Environment Act¹⁰¹

The National Environment Act prohibits activities that are harmful to the environment in wetland. It requires acquisition of permission in writing from NEMA following the carrying out of an EIA to determine the effects of that activity on wetlands and the environment in general¹⁰² before an activity is undertaken in a wetland.¹⁰³ Under the Act, NEMA is required to establish guidelines for the identification and sustainable management of all wetlands in Uganda. NEMA is required to identify wetlands of local, national and international importance as ecosystems and habitats of species of fauna and flora and to compile a national register of wetlands. NEMA is also given discretion, in consultation with the lead agency and the District Environment Committee to declare any wetland to be a protected wetland thereby excluding or limiting human activities in that wetland.¹⁰⁴ Controlled

⁹⁶ The Electricity Act, 1999, Cap 145 of the Laws of Uganda.

⁹⁷ *Id.* Section 4.

⁹⁸ *Id.* Section 10.

⁹⁹ See Kasimbazi note 57 above.

¹⁰⁰ *Id.*

¹⁰¹ See The National Environment Act, note 85 above.

¹⁰² EIA is required under Section 19 of NEA in respect of projects described in the Third Schedule. Under the third schedule activities in wetlands are among the projects that are to be subject to EIA.

¹⁰³ See The National Environment Act, note 85 above.

¹⁰⁴ *Id.* Section 37.

human activity in wetlands is inter alia aimed at promoting climate change mitigation. Part II the regulations made under this Act on the management of wetlands requires the Government or a local government to hold in trust for the people and protect wetlands for the common good of the citizens of Uganda.¹⁰⁵ The implication of this Act for the implementation of CDM projects in the wetland sector is limited the lack of clear and specific provisions for CDM projects in the wetland sector.

4

THE CHALLENGES OF IMPLEMENTING CDM PROJECTS IN UGANDA

Although Uganda has comprehensive environmental policies and laws, these policies and laws were not designed to address climate change issues. In many ways climate change is downplayed and is thought of in the face of disaster. CDM does not feature in the policy framework of the Ministry of Water and Environment as an independent policy area. National climate concerns and CDM are not formulated in policies such as the Uganda Forestry Policy, nor is CDM covered by a law or regulation and neither are they addressed in a plan like the Wetland Sector Strategic Plan. This has hindered direct foreign investment in CDM in Uganda.

In addition, policies such as the National Environmental Policy lack financial facilitation and skilled manpower. Whereas it is now largely accepted that climate is an important resource and worth protecting, and whereas implementation of the Kyoto Protocol is expected to be done through a hierarchy of enforcement from the Ministry of Water and Environment, through NEMA and local government, down to community level, the enforcement capacity available at all these levels does not appear to be commensurate with the widespread

nature of the problem. In particular administration at district and local environment committee levels lack adequate manpower and financial resources to implement and monitor all the CDM projects.¹⁰⁶ As a result, enforcement of the Kyoto implementation mechanisms under the national policy and legal framework is weak.¹⁰⁷

5

CONCLUSIONS AND RECOMMENDATIONS

The UNFCCC and the Kyoto Protocol have been implemented in Uganda in accordance with the principles of common but differentiated responsibilities and the precautionary principle. Uganda carried out a National Inventory of Sources and Sinks of Greenhouse gases in 1993. While Uganda has formulated comprehensive policies and laws, these policies and laws do not adequately address CDM.

Therefore, there is an urgent need to enact CDM regulations and formulate policies which specifically address CDM. This will facilitate successful implementation of CDM projects. For instance the enactment of CDM regulations in China in 2004 attracted direct foreign investment and this explains why China is one of the countries with the highest concentration of CDM projects in the world.

Further, there is need for financial facilitation in the areas of enforcing the policy and legal framework, capacity building at the national and local levels, preparing and updating a national communication. To achieve this, climate change has to be given priority by government and donor funding in the area of climate change should be increased.¹⁰⁸

¹⁰⁵ See Regulation 3 of the National Environment (Wetlands, Riverbanks and Lakeshores Management) Regulations, 2000, available at <http://faolex.fao.org/docs/pdf/uga36500.pdf>.

¹⁰⁶ See National Environment Management Authority, note 38 above.

¹⁰⁷ Gregory Rose, 'A Compliance System for the Kyoto Protocol', 24(2) *University of New South Wales Law Journal* 588 (2001).

¹⁰⁸ See Akiiki, note 8 above.

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