

**The niche of charcoal in climate change
initiatives (REDD+ & CDM):
A case of Tanzania**

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INTRODUCTION

- About 95% of the country's energy supply is met by fuelwood.
- In rural area: use firewood from deadwood or wood cut for other purposes
- In urban areas charcoal:
 - is preferred due to easy transportation and storage
 - come from fresh cut wood with - negative environmental impact
- Most of the charcoal comes from natural woodlands
- The present traditional charcoal kilns are very inefficient (19%).
- In eastern Tanzania
 - 25% of the degradation of the natural woodlands is due to charcoal,
 - deforestation caused by shifting cultivation (with charcoaling) is 20%



CDM OF THE KYOTO PROTOCOL

- Global climate change due to emissions of greenhouse gases (GHGs) is widely recognized
- Forests and climate change are linked, as forests acts as sources and sinks in the global carbon cycle.
- Under KP: Annex 1 countries can meet their reduction targets:
 - through improved energy efficiency,
 - by substituting fuels that produce less CO₂,
 - by using renewable energy sources
 - Also reforestation and afforestation
- To be registered, a proposed CDM project must use an approved baseline and monitoring methodology;
- As of June 1st 2011, there are 3159 registered CDM projects
- Energy Demand Registered CDM Project 29, 3 in Africa, 1 Related to Woodfuel



EXAMPLE OF A REGISTERED CDM ENERGY PROJECT

Efficient Fuel Wood Stoves for Nigeria

- Project purpose: dissemination of up to 12,500 efficient fuel wood stoves (SAVE80) and heat retaining polypropylene boxes in different states of Nigeria, at subsidized prices.
- Users are households who previously used inefficient, traditional fireplaces.
- The SAVE80 system saves up to 80% of fuel wood. By reducing the fuel wood consumption, the project activity hence reduces green house gas emissions stemming from the use of non-renewable biomass.
- A single SAVE80 system will save 2.72 t of CO₂e per year. The whole project activity is expected to prevent the emission of 300,000 tonnes of CO₂e until 2019.
- The project is implemented by the Nigerian Developmental Association for Renewable Energies (DARE), the German Non-Governmental Organisation Lernen-Helfen-Leben e.V. (LHL e.V.) and the German carbon offset organisation Atmosfair gGmbH.



The heat retaining box (left) and the SAVE80

AFFORESTATION/REFORESTATION CDM PROJECTS

- Out of the 3159 registered CDM projects only 28 focus on afforestation and reforestation.
- There are 4 in African countries:
- Uganda (2), DRC (1) and Kenya (1)
- Uganda Nile Basin Reforestation Project: Is for commercial Timber Production Project
- Kachung Forest Project: Afforestation on Degraded Lands: Is also for commercial timber production
- Aberdare Range/ Mt. Kenya Small Scale Reforestation Initiative
Kamae-Kipipiri Small Scale A/R Project: Is conservation in nature
- **Ibi Batéké degraded savannah afforestation project for fuelwood production (Democratic Republic of Congo)**



AFFORESTATION/REFORESTATION CDM PROJECTS

Ibi Batéké degraded savannah afforestation project for fuelwood production (DRC)

- Objectives:
 - sequester CO₂ through fast growing forest plantations on savannah grassland
 - supply the capital city of Kinshasa (8-10 million inhabitants) with charcoal through sustainable fuelwood production;
 - reduce soil erosion and water loss through runoff;
 - reduce degradation and deforestation of remaining forest galleries;
 - alleviate poverty through the introduction of long term income enhancement mechanisms for local communities.
- To achieve these objectives, four silvicultural models are used:
 1. Plots to be harvested: *Acacia sp*, *Eucalyptus sp.* and *Pinus sp.* intercropped with cassava (3106.33 ha);
 2. Plots not to be harvested: mixture of local and exotic species intercropped with cassava (465.60 ha);
 3. Plots not to be harvested: various local and exotic species (421.80 ha);
 4. Enhancement of natural regeneration through fire control (232.80 ha)



TRIED ENERGY CDM PROJECTS IN TANZANIA

Maseyu Eco-Charcoal project

- aims at transforming traditional to sustainable charcoal production
- The project strategies are:
- **Tree nursing and woodland management:** trees are being nursed continuously to replace the wood used for charcoal. 330 ha in harvesting coupes of 30 ha
- **Efficient production:** improves wood-charcoal conversion efficiency using the Half Orange brick kiln (efficiency 20%).
- **Marketing:** sustainable Eco-Charcoal will be sold directly to big consumers and in special places (e.g. hotels, supermarkets),
- **Limitations:**
 - high cost of raising the trees in the nursery against natural regeneration,
 - water shortage,
 - land preparation, and
 - protection against fire.



BARRIER & CHALLENGES FACING FORESTRY CDM PROJECTS IN TANZANIA

- There has been a lack of supply of high quality biomass offsets for CDM.
- Challenges:
 - High upfront costs, slow generation of credits
 - Need for substantial capacity-building on carbon markets and carbon accounting
 - Diversity and great amount of stakeholders to manage - local communities, NGOs, forestry agencies as well as government representatives. Gaining consensus among all of these stakeholders can often be a lengthy process that can deter investors;
 - Challenges towards proving additionality of projects
 - Complex methodologies and data requirements
 - Lack of laws and regulations governing critical areas such as land tenure and carbon rights.
 - Institutional barriers – lack of efficient communication between deferent players such as DNA, projects developers, international negotiators, communities.

Introduction to REDD

- CDM that serves the first commitment period till 2012 is limited to energy efficient projects and afforestation and reforestation projects only
- This is despite the fact that 20-25% of current annual carbon emissions are the result of loss of tropical forest
- This evidence prompted re-negotiation of climate change policy for the post 2012 to include REDD
- REDD: a developing country which is experiencing deforestation may, on a voluntary basis, receive compensation if it reduces its national deforestation rate, in proportion to the amount of carbon emissions that are reduced.
- REDD is quite different from CDM, in which carbon credits are issued at a project level.

REDD and Situation

- Tanzania has a total area of about 94.5 million ha out of which 88.6 million ha is covered by landmass and the rest is inland water.
- The country has a total forestland of 34 million hectares of which:
 - 16 million are reserved forests,
 - 2 million hectares are forests in national parks and
 - 16 million hectares (47% of all forestland) are unprotected forests in general lands.
- Deforestation in Tanzania, which is estimated at between 400,000 hectares per annum occur in the unprotected forests.
- REDD policy addresses Deforestation & Degradation
- Tanzania is embarking on this new policy

THE NATIONAL REDD STRATEGY

- Started in 2008, where A National REDD Task Force was formed to initiate strategy development,
- In early 2009, a stakeholder workshop was convened to develop the first draft of a framework which was finalized in Sept 2009.
- As an interim measure, the Institute of Resource Assessment is independently facilitate the Task Force for REDD strategy development.
- It is expected that the National REDD Strategy will be finalised by 2012.

DRIVERS OF D&D IN TANZANIA

- Settlement and agricultural expansion,
- overgrazing,
- **firewood and charcoal production,**
- uncontrolled fires,
- timber extraction,
- development of infrastructure/industry,
- refugees and
- introduction of large scale agriculture of bio-fuel production.

These direct causes of uncontrolled D&D are driven by:

- market and policy failures,
- rapid (and uncontrolled) population growth
- rural poverty, and
- the state of economy”.

The National REDD strategy develops strategic options for addressing drivers of deforestation and forest degradation.

CONCLUSION

- In developing countries like Tanzania, the use of fuelwood has a role to play in CC and therefore on CDM and REDD
- However, there is generally lack of CDM projects due to a number of challenges
- It is envisaged that most of the CDM challenges will be overcome under REDD