Country Experience
ETHIOPIA
Ethiopia, committed to shaping its scientific, technical, socio-economic and democratic advancements, has been adopting a strategy for sustainable economic development, which places agriculture as a driving force for industrialization. To achieve this, one of the strategy was the viable energy sector development that focuses among others on the “waste to energy conversion” options.
Moreover, there is a significant social impact arising from ugly mountain of waste, bad odor, dust particulates of windblown, and flies from open dumped wastes. The residents living in the vicinity of the open dump sites, like Repi in Addis Ababa, the open dumps of Adama, Awasa, Mekele, Diredawa, Bahirdar and Harar are socially stigmatized as well as they are not conscious for potentially dangerous transmitted diseases arised from the waste site.
Ethiopia has solid waste proclamation of Proclamation number 513/2007
The Relative Location of Repi Solid Waste Open Dumping
Addis Ababa

Area = 36.4 ha

Legend
- Repi
- Addis Ababa

Projection: WGS 1984, Zone 37N
Currently, the pilot project is underway since July 2009, as a result the first landfill gas was flared on 21st of July 2009 at Repi open dump fill in Addis Ababa. The experimental result showed that as there is a significant potential for energy generation and carbon finance; not only for Repi landfill but also for the other six cities in Ethiopia. Repi (figure 3) located 13 km away from the Addis Ababa city center is used to dump solid waste for Addis Ababa (2.96 million population). The site has been giving service since 1968, some 40 years ago where nearly about (851 tones per day) of the MSW generated, collected and transported dump site has an area of 36.40 ha, 14.56 million m3 and an average MSW depth of nearly about 40 meter.
Specific Objectives

- Demonstrating the practice of landfill gas recovery in the Municipalities of selected seven cities in Ethiopia;
- Demonstrating how trading emission reductions via the Kyoto protocol mechanisms could assist in making the practice of landfill gas recovery economically viable and promote sustainable development;
- Transferring the necessary technology and know-how to Ethiopia;
- Making available the required equipment via hands for waste consultancy organization from Netherlands;
- Development of local know-how by means of the involvement of Ethiopian expertise during the project implementation;
- To reduce GHG emissions through the extraction, collection and burning of the gases generated by the anaerobic decomposition of the waste in the Seven cities of Landfills.
Environmental benefits

Assist in mitigating uncontrolled GHG emission from the landfill by capturing 50% of the landfill gas emitted, reducing the risk of on-site fires by reducing the methane emissions and degassing the landfill, control the release of volatile organic compounds. Potentially avoid surface and ground water pollution from leachate surface run off and seepage.

Economical benefits

LFG as a new indigenous fuel source for Ethiopia; foreign expertise and training (consultants and staff from Handsforwaste, from the Netherlands for the initial stages of the project) to facilitate smooth technology transfer, and experience sharing. Significant amount of money will be accessed from CDM revenue and power generation. Avoid unnecessary expenses for access road maintenance emerged from an unplanned open dump site.

Social benefits

Improved health conditions due to reduction of gaseous emissions; jobs for locals and staff training to improve skills of locals. It is thought that this project will become a test case in Ethiopia will be closely monitored by other dumpsite/landfill owners.
The Major activities of the project includes:

- MSW collection
- LFG collection,
- LFG flaring and,
- Electricity generation.

Beneficiary

Local population: comprised of the local people in and around the Repi and the six bundled cities landfill areas
Expected outcomes

The projects will be the first in Ethiopia to extract and utilize LFG for electricity generation on a commercial basis. As a pioneering effort by the project proponent, the project will contribute significantly to the sustainable development of the country particular to the selected cities and towns where separate and a bundle of CDM project take place. The following environmental, economic, and social benefits

- Environmental benefits: assist in mitigating uncontrolled GHG emission from the landfills by capturing 50% of the LFG emitted, reducing the risk of on-site fires by reducing the methane emissions and degassing the landfill, control the release of volatile organic compounds;
LFG as a new indigenous fuel source for Ethiopia; foreign expertise and training (consultants and staff from hands for waste consultancy organization from Netherlands for the initial stages of the project) to facilitate smooth technology transfer; foreign capital inflow for CDM projects investment to maintain carbon financing;

Social benefits: improved health conditions due to reduction of gaseous emissions; jobs for locals and staff training to improve skills of the personnel