

***The Huruma Village Project – Improving Sanitation in Informal Settlement and Promoting Carbon-Neutral Programme of UNEP***

Huruma Village is a slum about 2 km from the United Nations Offices in Nairobi, at Gigiri and contiguous to Karura Forest and Ruaka River.

The Huruma Village Project comprises two parts: Bio-latrines and Tree-planting for degraded forest.

- Currently, UNEP, UNDP and HABITAT, working as ‘One UN’ team, are planning to build a bio-latrines for the Huruma Village community to improve sanitation at the informal settlement level.
- As part of Kenya Forest Service’s (KFS) strategy of participatory forest management by neighboring communities, KFS has allocated to UNEP 60 hectares of degraded Karura Forest near Huruma village and an additional 50 hectares at the Ngong Road Forest for planting indigenous trees. This will help to reforest the degraded forest and benefit the UNEP Carbon-Neutral initiative as well as to off-set carbon emissions from staff official travel.

This Project is a multi-purpose pilot project which combines sanitation improvement, renewable energy promotion, carbon sequestration and income-generation together. If the pilot works, the successful experience of the project could be shared with other informal settlements or communities in Kenya and will benefit a large population of people living in poor conditions.

*Sanitation improvement:* According to the census carried out by UNEP and Huruma Community, 78% of the families in Huruma village use the bush or forest as toilet. It suggests a clear need to improve the sanitation in this village. The construction of a Bio-latrines consisting of pit latrines and showering places will first satisfy the need of the community and also alleviate the negative impacts on environment caused by human waste. The land-use permit has been approved by the City Council of Nairobi for the construction of the proposed Biolatrines.

*Renewable energy promotion:* Bio-latrines comprises a bio-digester underground in which the bacteria in the urine and faecal sludge could break down the pathogens in an airless process and produce methane-based biogas. The biogas could be collected and led out for cooking or heating water. The census in Huruma village showed that 66% of the households in the village use firewood as source of fuel for cooking with a daily consumption of 11 Kg. Most of the firewoods were fetched from the nearby Karura forest. The application of Biogas as a community cooker will reduce the time and labor for collecting firewood in the forest, avoid deforestation and improve the energy utilization efficiency.

*Carbon sequestration:* KFS has allocated to UNEP 60 hectares of Karura Forest and 50 hectares of Ngong Road Forest for tree planting activities. As approved by KFS, mulberry trees and bamboo could be planted for silk farming (sericulture) and stabilization of soil

respectively. Calculations are being carried out using approved methodology to determine what trees, and how many, would be necessary on this area of land equivalent to absorb one metric tonne of CO<sub>2</sub> by international agreed criteria. Initial figures indicate that planting mulberry trees in 60 hectares in Huruma will cost US \$ 100,000, and according to calculations from [carbonneutral.com](http://carbonneutral.com), 60 hectares mulberry trees can absorb **6,922.6 tonnes** of CO<sub>2</sub> a year.

As the first phase of the tree-planting initiative, 3,000 trees (in 3 hectares) will be planted in the allocated land of Karura Forest in February 2008.

*Income generation:* In response to Poverty Alleviation and Environment Initiative (PEI), sericulture will be introduced into Huruma village as a source of income-generation and to improve the livelihoods of the community. The community group planting the mulberry trees will be allowed to harvest the mulberry leaves to feed silkworms in the enclosures within the community settlement. It is estimated that 5,000 mulberry trees are required to feed 20,000 silkworms over a period of time. With proper silvicultural practices, the trees will provide enough leaves for the worms for over 15 years.

The Chinese Embassy has promised to donate \$25,000 to the construction of the Biolatrine and technical support to the sericulture. The Ground-breaking ceremony will take place at Huruma village on 14<sup>th</sup> February, 2008.