

## **Sanitation in Public Institutions of Kenya Using sanitation to Reduce Environmental Degradation**

Many public institutions (prisons, boarding schools, colleges, etc) in Kenya are facing many challenges with regard to the provision of safe and adequate sanitation services. Many areas of Kenya have no sewer systems. Only 18% of the total population is covered by the sewer system. Most public institutions are therefore developing their own onsite sanitation facilities. The most commonly used technologies are ablution blocks with septic tanks or various types of pit latrines. However, due to the high population in these public institutions (often 50% higher than the design capacity) the pits are getting filled up within short periods of 2-3 years. The septic tanks have to be emptied 2-3 times in a year. The exhauster services are however not adequately available country wide to facilitate this. More and more public institutions are opting to use large number of pit latrines which are abandoned as soon as they filled up. This is creating large spaces occupied by grave yards of pit latrines. Grey water from the kitchen and bathrooms are often discharged into the environment. This creates wet dirty grassy areas where mosquitoes, cockroaches and flies breed. Organic waste from the kitchen are disposed of inappropriately thus causing stench and filth. Due to the high cost of energy cheap wood fuel is used in large amounts for cooking in the kitchens. This is causing stress on the already dilapidated forest cover of Kenya. It has been reported by UNEP in an article which appeared in the Standard Newspaper of 2<sup>nd</sup> March 2009 that Kenya as a country is tottering towards environmental disaster due to the destruction of forests.

The EU-GTZ –SIDA EcoSan Promotion project has started implementing pilot projects in public institutions in an attempt to address the above named challenges. This is being done with the involvement of all the relevant stakeholders e.g Ministry of Education, Prison department, Water Services Boards and Water Service Providers). The management of these facilities is to be done by the institutions through the Water Service Providers. The measures being undertaken include:

- Conducting hygiene education and operation trainings
- Promoting hand washing after the use of toilet
- Construction of onsite sanitation facilities consisting of a biodigester (primary treatment) and anaerobic baffled reactor (secondary treatment). These systems can serve institutions with populations up to 2,000 people with a reasonable per capita cost of KSh 1,000. It has a major added value in the amount of energy generated and environmental conservation(reducing climate change)
- Collection of black, grey and yellow water through short sewer lines to one central point (biodigester) for onsite treatment and fermentation to produce biogas. The biogas is to replace wood fuel as a source of energy for cooking. A clean and healthy environment is thus created.
- Collecting and fermenting all the organic waste in the biodigester to increase the biogas yield. This reduces the problem of solid waste disposal
- Economic use of organic sludge and effluent generated from the system in farming to produce sufficient food for these public institutions
- Reducing land under old pit latrines

Two pilot facilities are at operation at the GK Prison Meru and Gaishore Girls High School in Kiambu. Eight other facilities are under construction in Secondary schools in Kenya.



An abandoned filled up pit toilet block



Biogas use at GK Prison Meru