Project Partners
This project is being implemented under the ‘Pro-Poor and Sustainable Solid Waste Management in Secondary Cities and Small Towns in Asia-Pacific’ with the support from United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) in partnership with Waste Concern. All necessary technical support to implement the pilot project is carried out by Waste Concern in close collaboration with the Kushtia Municipality. The Kushtia Municipality has provided land for the project. Local Government Engineering Department (LGED) of the Government of Bangladesh provided the cost for construction of the compost plant and faecal sludge management tank along with the cost for the vacuum tank, while ESCAP provided grant for construction of the compost plant and tank.

Benefits From The Project:
- Reduce water pollution and health hazards;
- Reduce burden of waste and faecal sludge management cost for the city;
- Creating two outputs: Compost and safe water for irrigation;
- Comparatively less space required for the city to treat waste and faecal sludge;
- Reduce Greenhouse Gas (GHG) emission;
- Creating value from waste;
- Creating jobs for the poor; and
- Improving the soil condition of cultivable land.

For more information visit [www.wasteconcern.org](http://www.wasteconcern.org) or contact [office@wasteconcern.org](mailto:office@wasteconcern.org)

Co-Composting of Municipal Solid Waste and Faecal Sludge for Agriculture in Kushtia Municipality, Bangladesh

Supported by: United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP)
Implemented by: Waste Concern
**Background**

Rapid urbanization in Bangladesh is creating an increasing strain on overburdened infrastructures, as well as more demand on limited public services. Today most of the local governments are facing various problems related to wastage and sanitation. Crude dumping of municipal waste and human excreta in water bodies and low lying areas are the most common method of disposal system. Which results in emissions of methane gas (a potent greenhouse gas). This not only adds to the global warming process but also to reduced quality of life due to odor and unhappiness living conditions.

To improve this situation, in November 2012, a pilot project was initiated in Khulna Municipality (a secondary town in Bangladesh) to treat the faecal sludge and solid waste together.

**CO- COMPOSTING**

Faecal sludge has a high moisture and nitrogen content while organic waste is high in organic carbon and has good bulking properties (i.e. it allows air to flow and air to circulate). Organic Waste and ‘Faecal Sludge’ by combining these two, the benefits of each can be used to optimize the process and the output product. Co-composting is a natural process allowing good biogeneration of sludge in a relatively short time. This is due to high temperature of 30 to 70°C, which is reached during thermophilic degradation process. Co-composting of pre-treated and thickened faecal sludge with solid waste is a good solution, proven for large scale sludge.

Laboratory analysis of the end products of co-composting process shows that both the compost and effluent from the compost are safe and complying with the standards for use in agriculture and irrigation purpose respectively.

**Project Initiated: November 2012**

- **Total amount of municipal solid waste brought to the plant amounts to 3 to 3.5 tons/day.**
- **Under this project, faecal sludge is directly collected from the septic tanks or pit latrines of households using mechanical vacuum trucks.**
- **Total amount of faecal sludge collected per day is 9 cubic meter/day.**
- **The collected sludge is directly sent to the treatment facility.**
- **The liquid sludge (faecal sludge) is poured into the sludge tank, from where it is passed into the sludge drying bed by natural gravity. When the drying bed becomes filled up, it is kept there for few days so that sludge gets dried and the percolate is transferred into the connected percolate tank.**
- **The percolate is pumped into the coco peat filtration unit for further treatment. The filtered water coming out from the coco peat has high nutrient, and can be safely recycled into agricultural land for irrigation purpose.**

**On the other hand, dried layer of the fascal sludge is collected up from the drying bed and is mixed with the municipal organic solid waste in 1:3 ratios, and compost is produced in the co-composting plant using aerobic thermophilic composting method to be used as organic fertilizer.**