



## Organic Waste is Composted and Sold as Bio-rich Fertilizer – Reducing Emissions, Generating Jobs and Cleaning up the City.

### City

Dhaka, Bangladesh

### Population

9,363,100

### Project Start Date

1995

### Annual CO2 Reductions

1270 tons

### Annual Financial Savings

\$7,218 USD for a 3 tons/day capacity plant (both from plants and carbon credits)

### Initial Investment

\$14,300 USD for 3 tons/day capacity plant

### Project Status

Expanding

### SUMMARY

Waste Concern is a non-profit organization established in 1995 that has had major successes in reducing emissions in several cities around Bangladesh, Sri Lanka and Vietnam by composting solid waste instead of burning or flaring, and selling it to fertilizer companies. So far, Waste Concern's model of managing waste has reduced more than 18,000 tons of CO2 emissions each year in Bangladesh and generated 414 new jobs for the urban poor. It is helping to reduce the 52% of generated solid waste that remains uncollected in Dhaka.

### WHAT IS IT?

Waste Concern is a non-profit organization that works with municipal governments to use solid waste as a resource by composting waste in 5 community-based composting plants rather than burning/flaring it and then selling it to fertilizer companies. To scale-up its model, Waste Concern as a Social Business Enterprise partnered with a for-profit private Dutch company using CO2 emissions trading of CDM (Clean Development Mechanism).

### HOW DOES IT WORK?

- City will provide public land for community composting
- Waste Concern facilitates with the city to collect house-to-house solid waste in rickshaw bicycles and bring it to processing plants
- Organic waste is separated from other rubbish
- Waste is composted into enriched bio-fertilizers
- Waste Concern arranges for fertilizer companies to purchase and nationally market the compost-based fertilizer
- Waste Concern has 5 composting plants in Dhaka:
  - One 10-12 tons/day capacity plant
  - Two 3 tons/day capacity plants
  - Two 1 ton/day capacity plant

## FINANCIAL COSTS

Items	3 ton/day	10 ton/day
Land Required / Plant	7	20
Fixed Cost / Plant (Tk)	1,008,000	2,880,000
Operating Cost / Plant(Tk)	300,000	1,000,000
Total Labors / Plant	4	12
Compost Produced (Daily)	750kg	2500kg
Expected Revenue from Sale of Compost (Tk)	600,000	2,000,000
Expected Revenue from Sale of CERs/ Year	205,312	684,375
Profit with CER/carbon credits per year	505,312	1,684,375
Profit per year without CER/carbon credits	300,000	1,000,000
Pay Back Period (with carbon credits)	2 Years	1.71 Years
Pay Back Period ( without carbon credits)	3.36 Years	2.88 Years

\* CER means certified emission reduction (which is reduction of methane gas by composting). The methane gas reduced by composting can be sold at a price of US 6/ton using CDM mechanism) I US \$ = Tk. 70/-

## NEXT STEPS

- Harnessing the Clean Development Mechanism (CDM) of the Kyoto Protocol, Waste Concern and a Dutch company, are now building 700 tons/day capacity compost plants strategically located in the periphery of Dhaka city with a compost production capacity of 50,000 tons/year, reducing CO<sub>2</sub> emissions by 560, 000 tons over the next 6 years and benefiting more than 3.6 million people each year.
- Composting all organic waste in Dhaka would create create new jobs for 16,000 people from lower socio-economic backgrounds, especially women.

## APPLICATION

- Easy model that can be implemented in any city
- Waste Concern will partner with any community/ private sector and/or municipal government
- Waste Concern established a Regional Recycling Training Center located in Dhaka, where it offers training programs, instructing local officials to learn the process and undertake full operational activities

- Waste Concern provides assistance in quality control, marketing of compost: the program is only financially possible if a market exists
- City must be willing to provide the following types of support:
  - Land should be provided free of cost or at a nominal rate to to people interested in running the project.
  - Enable the collection of waste from communities throughout the city.
  - Encourage Public-private-Community Partnership
- There are 47 replications of this model in 26 cities.

## **CONTACTS**

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