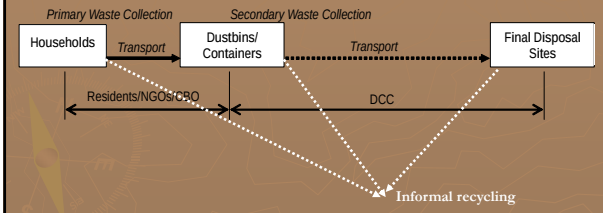
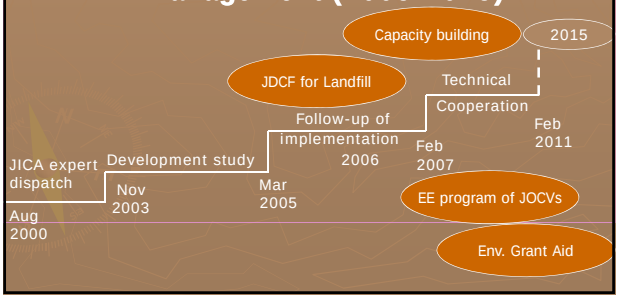
Improving Waste Management Situation in Dhaka City through Clean Dhaka Master Plan

MD. ABUL KALAM AZAD
Chief Executive Officer
Dhaka City Corporation

Waste stream flow in Dhaka City



Clean Dhaka Master Plan on Solid Waste Management (2005-2015)



Implementation policy & programs

- Institutionalize community based solid waste management system (Program A)
- Enhance capacity of waste collection and transportation (Program-B)
- Improvement of solid waste disposal system (Program-C)
- Institutional strengthening and standardizing cost accounting system (Program-D)

Targets & Achievements

- Waste Management Department (WMD) has been established combining engineering & conservancy
- Ward Based Approach (WBA) to decentralize waste management service
- Construction of first ever sanitary landfill in Bangladesh completed and operational since October 2007. Implementation of second Landfill has started (2008-2011)
- GIS based waste collection points and routes are designed
- Public relation activities such as posters, stickers, leaflets, display billboards are developed and community awareness programs and school education programs are implemented.
- Environment and Climate Change Grant Aid is secured for the procurement of modern and environment friendly waste collection vehicles.

Sanitary landfill: Technology & Environmental significance

- Semi-aerobic technology
- Facilitates rapid decomposition
- Control of leachate
- Control of odour
- Reduction of GHGs

Overview of the Disposal Facility

- Transformation of the existing dump site into a sanitary landfill and reduction of the environmental pollution generated from the disposal activities.
- Improvement of the operational practice of landfilling through provision of sufficient facilities and equipments
- Improvement of the working conditions at the site including health & safety

Key Challenges

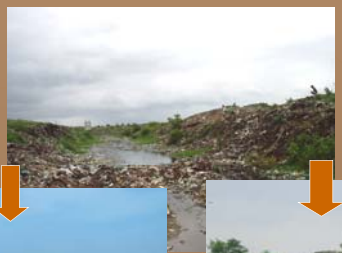
- Total landfill area was filled up with waste
- All the drains were filled up with solid wastes causing severe drainage congestion.
- The waste was vertically placed; occupied part of the road causing interference with the vehicular movement.
- During monsoon, the site was almost inundated and inaccessible.
- Fire hazard was very common in the dump site.
- The installation of leachate pipes at 20 feet depth removing the old waste was very challenging.
- Construction of temporary road on waste was a difficult job because of the underlying soft and wet waste layer
- Daily operation was continued

Matuail landfill before improvement


Matuail landfill site before improvement


Matuail landfill Site before improvement


Transforming open dump into sanitary landfill

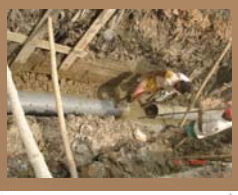


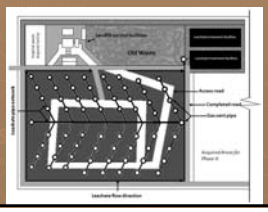
Weigh bridge operation

Vehicle wash facility

Working Road & dumping platform on compacted waste

LEACHATE PIPE





Surface drain

Gas vent pipe

Leachate pond

Situation after improvement….

- Waste management system and operational conditions of the landfill have tremendously improved
- Environmental conditions have been greatly improved due to the construction of leachate collection, gas venting system and surface drainage.
- Leachate accumulation and drainage blockage have been eliminated.
- Odour, fire hazard and fly breeding have been reduced.
- Quality of surface water around the landfill site has significantly improved
- Aesthetic condition of the site has been drastically improved
- Service life of the existing dump site has been greatly extended

Lessons learned and future implication…..

- Optimum utilization of existing landfill site in order to avoid difficulties in finding new site for landfill.
- Low cost technologies and locally available materials are used for development of the landfill facilities for ensuring sustainability of the development works.
- Consultation with the field level officials and workers to include their reasonable ideas and suggestions in planning, design and operation of landfill facilities.

- Expert guidance by local consultants and close supervision by engineers is needed to solve the peculiar local problems and challenges confronted during implementation of the project.
- Consultation with the local people to accommodate their pragmatic views into the project.
- Regular training of the landfill staff to enhance their skill is essential for proper management of the landfill site.

Sustained operation & Potential replication

- Operation and maintenance fund from DCC
- Separate Landfill Management Unit for regular operation
- Routine Environmental monitoring
- Capacity building of the staff
- Step by step improvement measure
- Five other big cities going to construct sanitary landfill from ADB funded project

Best workers award of Landfill Management Unit


Thank You
For Your Attention