

Waste Management in Bangladesh

Technical-Policy Challenges and Way Forward

Zoom Meeting at 9.00 PM

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Webinar Organized by Bangladesh Environment Network (BEN)

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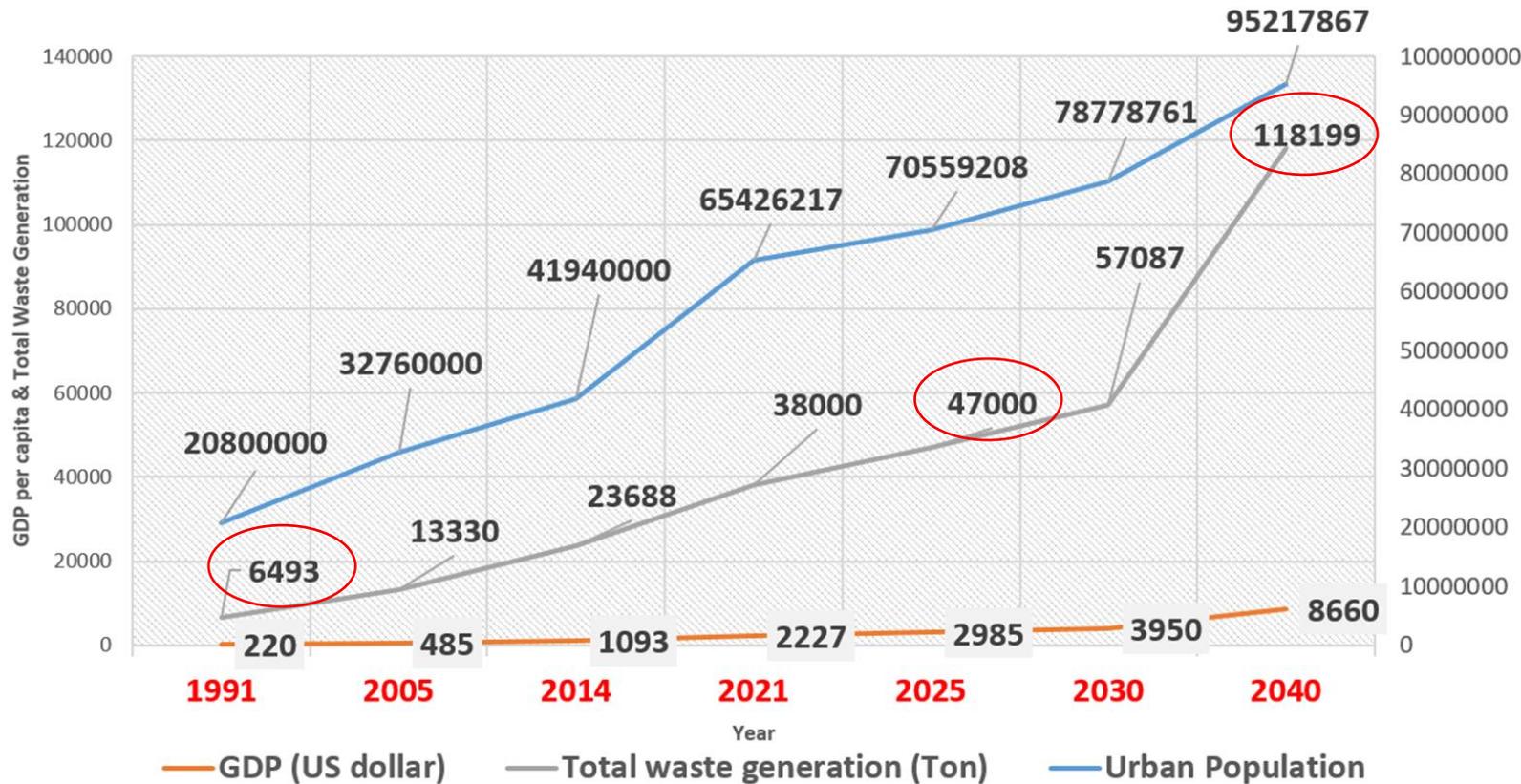


web: www.wasteconcern.org

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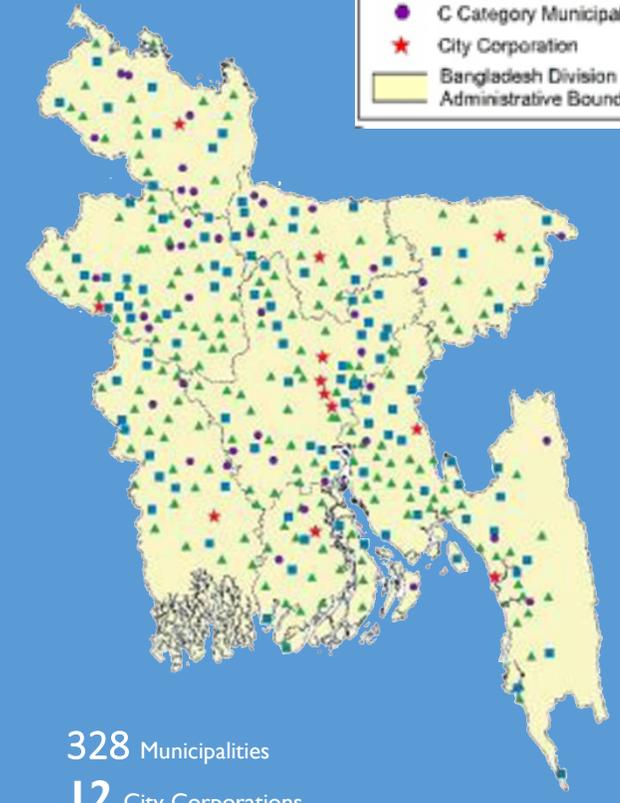
Snapshot of Solid Waste Management In Bangladesh



Total Urban Waste Generation vs. Urban Population

In urban areas of Bangladesh, the generation of solid waste is increasing rapidly due to population growth, urbanization, and economic development. The trend indicates a steep rise in both the total quantity and per capita generation of waste over time. Based on current projections, urban waste generation is expected to reach alarming levels in the coming decades:

Categories of Urban areas



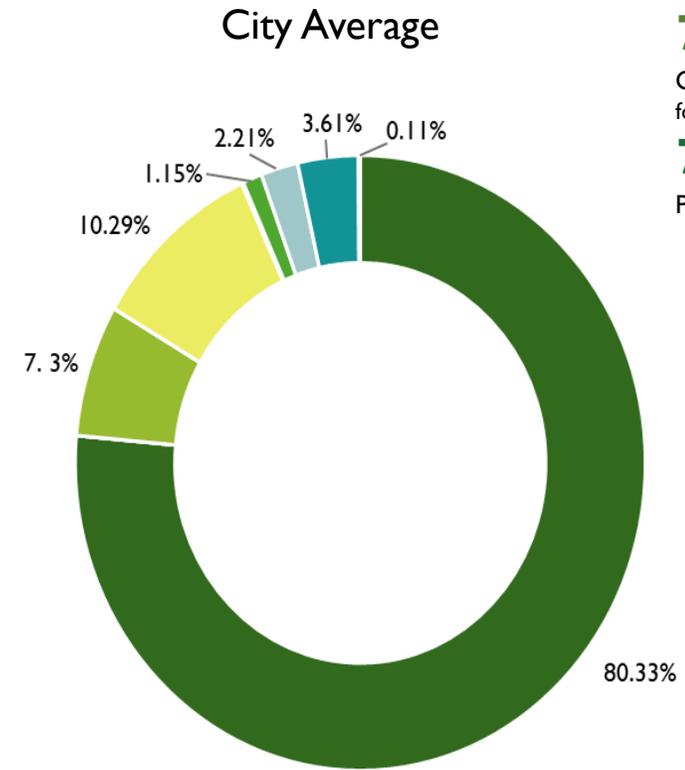
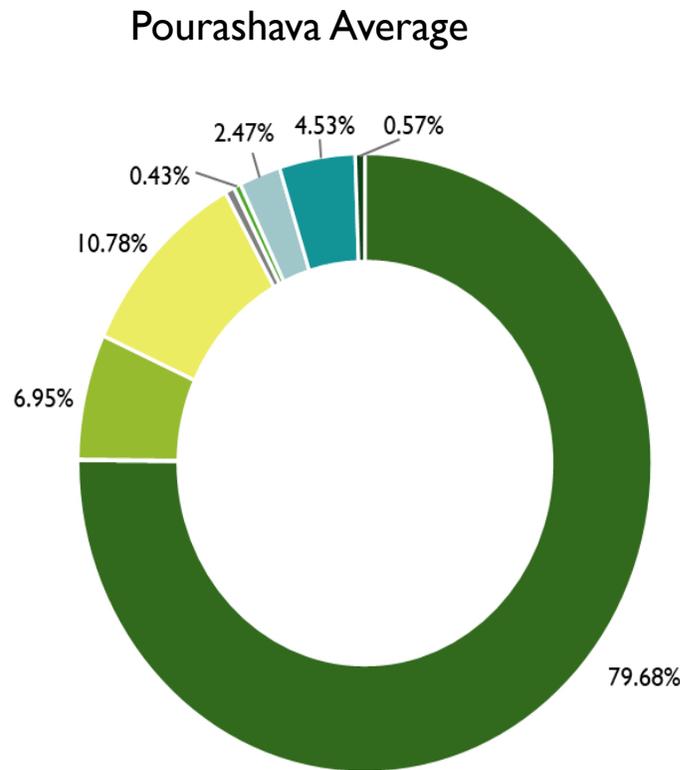
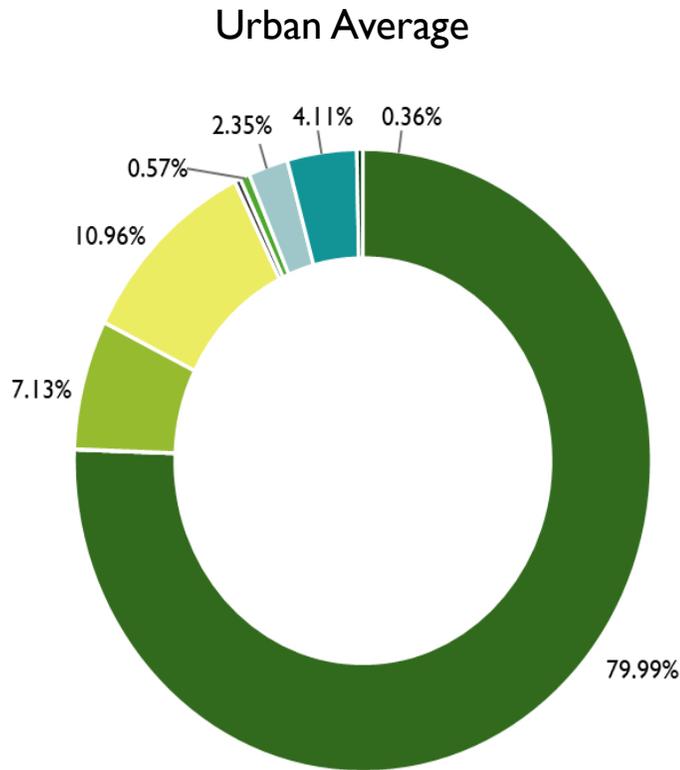
328 Municipalities

12 City Corporations

184 Upazila Headquarters

47,000 tons per day by 2025
118,199 tons per day by 2040.

Average Composition of Urban Waste 2021 (Landfill)



■ Food Waste
 ■ E-Waste
 ■ Plastic
 ■ Other
 ■ Metals
 ■ Wood
 ■ Papers
 ■ Fabrics
 ■ Medical Waste

For urban wastes
79.99%
 Organic Waste
 followed by
7.13%
 Plastic Waste

High organic matter
High moisture content
Low calorific value

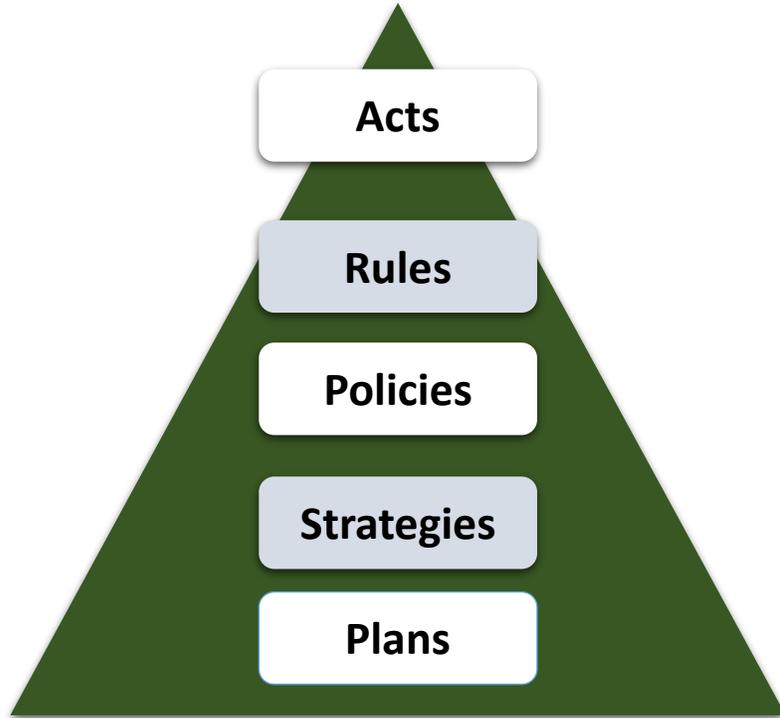
>> (more than 70%)
>> (more than 50%)
>> (less than 1000 Kcal/Kg)

Conventional System of Solid Waste Management which end of pipe solution



- No Segregation of waste, resulting low-level of recycling
- **Multiple Handling of Waste (4 to 5 times from the source to disposal)**
- Low level of awareness on 3R/Source Separation of waste
- **Crude method of waste collection and disposal.**
- Low collection efficiency of waste is a one of the cause of drainage problem
- **Environmental pollution from waste causing health hazards.**
- Increasing amount of Land required for landfilling
- **Increasing waste management cost**
- **Greenhouse gas Emission**

Regulatory Documents and Approving Entities



Regulatory Documents

Approving Entities

<ul style="list-style-type: none"> Local Govt. (City Corporation/Pourashava) Acts, 2009 Amended 2011 	<ul style="list-style-type: none"> The Parliament
<ul style="list-style-type: none"> Environmental Conservation Act, 1995 	<ul style="list-style-type: none"> The Parliament
<ul style="list-style-type: none"> Environmental Conservation Rules, 1997 Medical Waste Management Rules, 2008 Solid Waste Management Rules, 2021 	<ul style="list-style-type: none"> DoE, MoEFCC DoE, MoEFCC DoE, MoEFCC
<ul style="list-style-type: none"> National Policy for Safe Water Supply and Sanitation, 1998 Environment Policy 2018 	<ul style="list-style-type: none"> LGD, MoLGRDC DoE, MoEFCC
<ul style="list-style-type: none"> National 3R Strategy for Waste Management, 2010 National Strategy for Water Supply and Sanitation, 2021 	<ul style="list-style-type: none"> DoE, MoEFCC LGD, MoLGRDC
<ul style="list-style-type: none"> 8th Five Year Plan Perspective Plan of Bangladesh 2021-2041 Clean Dhaka Mater Plan 2018-2032 	<ul style="list-style-type: none"> Planning Commission, Ministry of Planning Planning Commission, Ministry of Planning LGD, MoLGRDC, JICA

Key Features of Solid Waste Management Rules, 2021 (Bangladesh)

Legal Framework

First comprehensive national rules providing a **binding regulatory framework** for solid waste management across urban and rural areas

Defined Roles & Responsibilities

Clear assignment of duties to **Local Government Institutions (City Corporations, Municipalities, Union Parishads)**, waste generators, operators, and regulators.

Source Segregation Mandate

Mandatory **segregation of waste at source** (organic, recyclable, hazardous, and residual waste).

Waste Hierarchy Enforcement

Prioritizes **reduce, reuse, recycle, recovery**, with landfilling as the **last option**.

Integration of Informal Sector

Recognition and inclusion of **informal waste workers** and community-based organizations.

Material Recovery & Treatment Facilities

Promotion of **MRFs, composting, recycling, and waste processing facilities** over open dumping.

Extended Producer Responsibility (EPR):

Legal basis to introduce **EPR obligations**, especially for plastic and packaging waste.

Environmental Safeguards

Controls on **open dumping, open burning**, and improper disposal to reduce pollution and public health risks.

Authorization & Monitoring

Requirement for **authorization, record-keeping, reporting, and monitoring** by operators and LGIs under DoE oversight.

Climate & Resource Focus

Alignment with **National 3R Strategy, NDC, climate mitigation goals**, emphasizing waste diversion and methane reduction.

Major Barriers

- Need Political Commitment
- Solid Waste Management Rules 2021 and other policies are not properly implemented
- Interministerial Coordination.
- Incentives must be revisited

Election Manifesto

2026

Newly Elected Government (BNP)

Integrated waste management and pollution prevention:

Integrated waste management will be gradually established across the country, through which fuel and organic fertilizer will be produced from waste, and the environment will be pollution-free through recycling.

Waste Management and Pollution Control

Implementation of 'Circular Future Model' in waste

management: BNP's goal is a clean, safe, and economically revitalized Bangladesh, where waste becomes a new resource and the environment is the power of development. Regarding waste management, BNP will establish a 'Circular Future Model', where waste will be transformed into resources.

Establishment of regional material recovery centres:

Material Recovery Centres will be established in specific districts and regions according to waste production volumes. Additionally, e-waste recycling factories will be set up in each division for electronic waste management, from where valuable metals will be collected. Through this initiative, 200,000 informal workers will be included in the formal sector.

Implementation of 'Three R' policy in waste management:

The Three R (Reduce, Reuse, Recycle) policy will be implemented in waste management nationwide, through which plastic waste will be reduced by 30% within five years.

Pollution remediation and air quality improvement:

BNP government will reclaim land and water bodies polluted by industrial and human waste.

Energy production from waste:

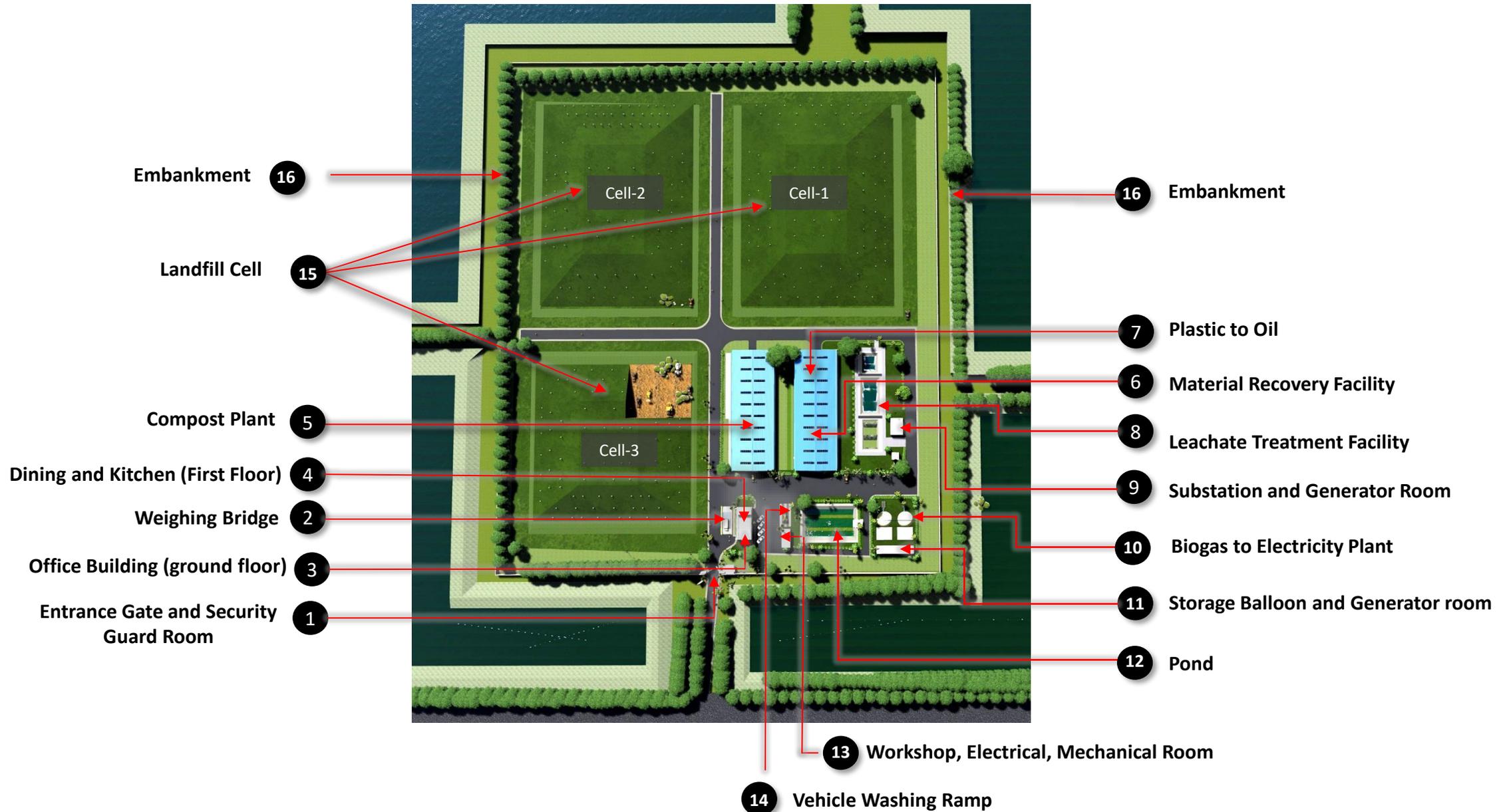
Waste-to-energy projects will be launched, which will meet the fuel demands of cities and reduce pollution. Additionally, effective measures will be taken for organic fertilizer production from waste and plastic waste recycling.

Khulna City Corporation (KCC): Integrated Landfill and Resource Recovery Facility (IL&RRF)



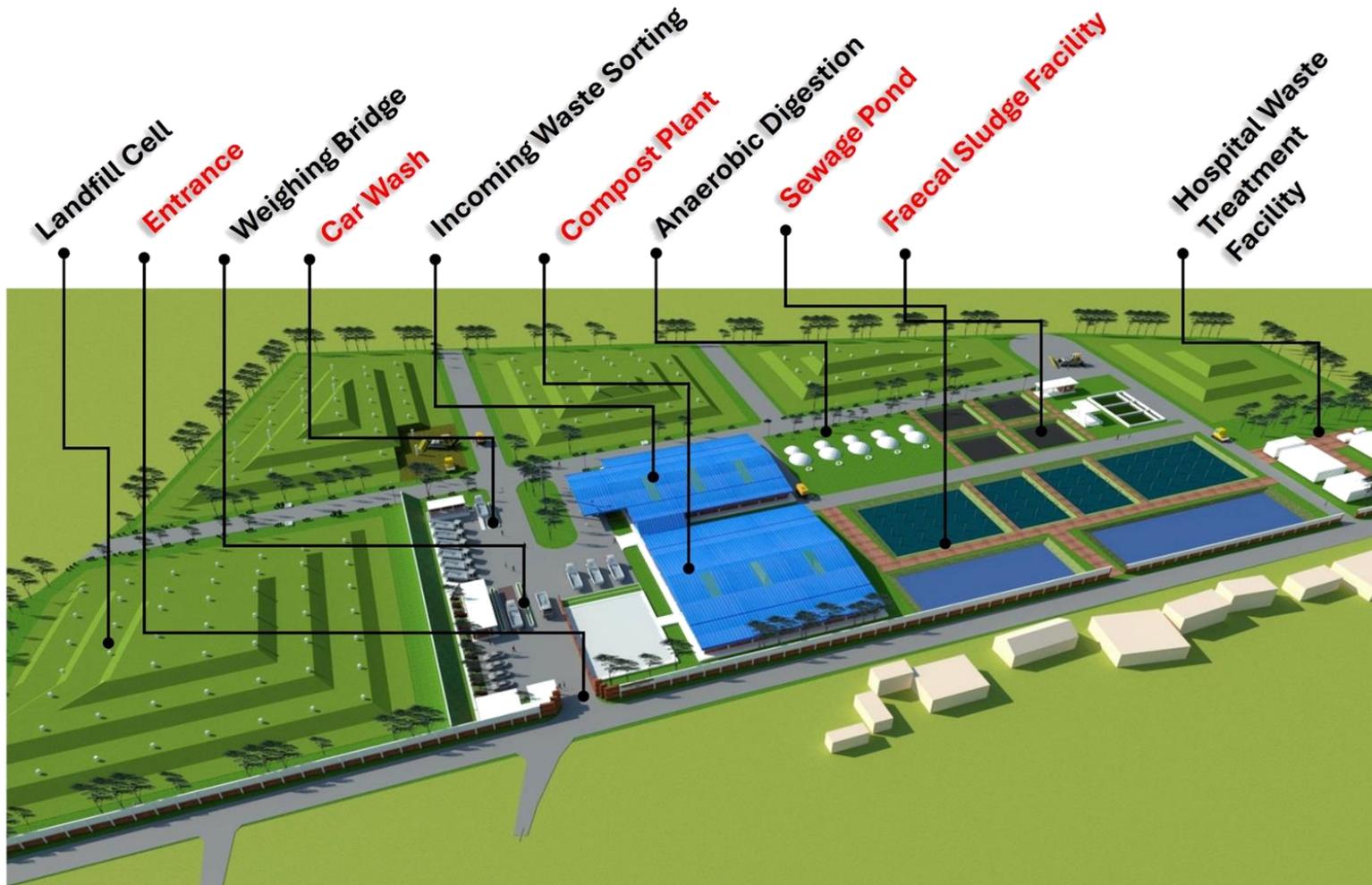
- **Name of the Project:** Second City Region Development Project (CRDP II)
- **Project Partners:**
 - Implemented by** Local Government Engineering Department (LGED)
 - Supported by** Asian Development Bank (ADB)
 - Consultant:** Waste Concern Consultants
- **Land Area: 17 Acres**
- **Capacity to Manage Waste: 450 Tons/day**
 - Landfill cell (Landfilling): 67.8%
 - Compost production: 20.0%
 - Anaerobic Digestion: 5.3%
 - Pyrolysis (Plastic waste to oil) 3.2%
 - Recyclables: 3.7%
- **Status:** Under Construction
- **Estimated Date of Operation**
- **Leachate Treatment Plant:** No leachate will go outside. It will be treated and reused.
- **Design Life:** Design life of the landfill cells upto 2041

Khulna City Corporation (KCC): Integrated Landfill and Resource Recovery Facility (IL&RRF)



Typical Layout for 15-20 Acre Land

JESSORE POURASHA: Integrated Landfill and Resource Recovery Facility (IL&RRF)



Name of the Project:

City Region Development Project

Project Partners:

Implemented by Local Government
Engineering Department (LGED)

Supported by Asian Development Bank
(ADB)

Consultant: Waste Concern Consultants

Land Area: 13 Acres

Capacity to Manage Waste: 50 tons/day

Municipal Waste: 50 Tons/day

- Compost plant 20 Ton/day

- Biogas 20 Ton/day

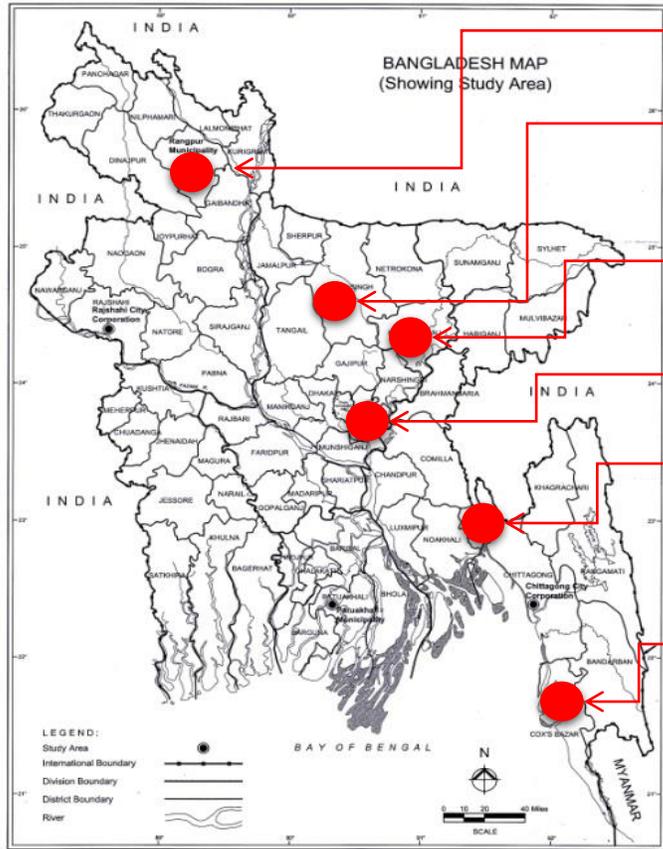
Faecal Sludge- 10M3/day

Status: Operated by Private Sector

Estimated Date of Operation: 2018

Composting (IRRC) Implemented and Financed by the Government of Bangladesh

Programmatic CDM using Organic Wastes of Urban Areas Municipalities) throughout Bangladesh (in 64 Districts):
Government used its Climate Change Trust Fund.



- Rangpur City Corporation**
Capacity: 16 tons/day
- Mymensingh Municipality**
Capacity: 8 tons/day
- Kishorganj Municipality**
Capacity: 10 tons/day
- Narayanganj City Corporation**
Capacity: 22 tons/day
- Feni Municipality**
Capacity: 10 tons/day
- Cox's Bazar Municipality**
Capacity: 12 tons/day

MUNICIPAL OWN PRIVATELY OPERATED



Name of the Project:
Programmatic CDM using organic Wastes of Urban Areas Municipalities) throughout Bangladesh (in 64 Districts)
Capacity to Manage Waste:
-Municipal Waste: 22 Tons/day
Status: Operated by Private Sector



Implementation of 3R Initiative Pilot Project (Phase-I) In Matuail Landfill Site of DSCC



The contractor has provided a one-year warranty for the following machinery in this project. This warranty period will be effective from the date of the completion certificate.

- Screening Machine (Drum Screen);
- Skid Steer Loaders;
- Plastic Waste Shredder; and
- High-pressure radial blowers.



Compost Plant Facility

**Material Recovery Facility
(MRF) in Gorai Badh LIC
area in Ward No. 10 of
Kushtia Municipality**



**Waste Concern Established mini-
Material Recovery Facility (MRF) in
Gorai Badh LIC area in Ward No.
10 of Kushtia Municipality**



Recycling of Inorganics



LafargeHolcim and Sylhet City Corporation to work together for sustainable waste management



PRAN-RFL, LafargeHolcim team up on sustainable waste management





What Must Change
for Meaningful
Impact ?

- Enforcement of the SWM Rules 2021
- **Inter Ministry Co-ordination**
- Shift to performance-based, long-term PPP contracts
- **Implementation of mandatory segregation of waste at source.**
- Provision of Land for the Treatment and Disposal Facility (by Local Government).
- **Delivery of Waste & Tipping Fees (by Local Municipality) for treatment of waste**
- Incentives (TAX, VAT, DUTY etc.)
- **Soft Finance (grant + debt + equity approach as done in some of the neighboring countries).**
- Use EPR as a financing mechanism, not only reporting
- **Support MRFs, composting, recycling SMEs**
- Climate Finance needs to be harnessed (NDC, Carbon Trading, Paris Agreement etc.)
- **Deploy digital waste data systems**
- Level Playing Field (subsidy on compost such as done in India, feed in Tariff for Waste to Energy Projects using AD or thermal process)

Thank You