

ADB's Support to Waste Management

India-Japan Environment Week

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ADB S2030 Operational Priorities Linked Directly to SWM

Operational Priority 3
Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability



Operational Priority 4
Making Cities More Livable



Strategic Operational Priority	Operational Approach
<p>Environmental sustainability enhanced</p>	<p><i>Environmental Governance</i></p> <ul style="list-style-type: none">Water-food-energy security nexusAir and water pollution managementNatural capital and healthy oceans 
<p>Improve urban environment, climate-resilience and disaster management of cities</p>	<ul style="list-style-type: none">Support environment improvement projectsPromote energy-efficient and environment-friendly technologies and processesPromote circular economy practices 

HEALTHY OCEANS

Action Plan for Healthy Oceans & Blue Economies

Commitment: **\$5 BILLION by 2024**

ADB



FLAGSHIP OCEAN PROGRAMS

Coastal Resilience



Plastic-free Oceans



Ocean Finance



Sustainable Seafood



MAINSTREAMING OCEAN HEALTH



Wastewater and Sanitation



Solid Waste Management



Rural Development and Food Security, and Water "Source to Sea"

GROWING BLUE ECONOMY SECTORS



Green Maritime Transport



Marine Renewable Energy

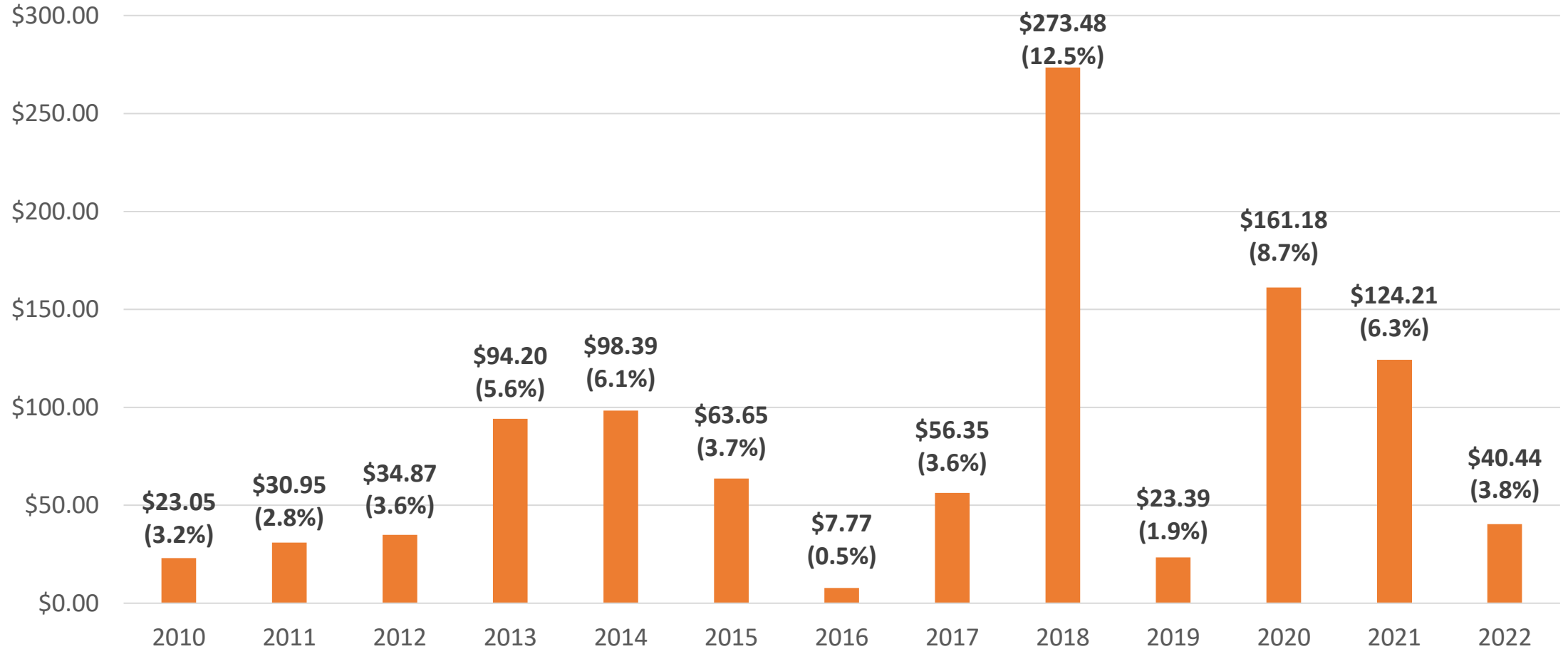


Sustainable Coastal and Marine Tourism

ADB Urban Sector SWM Projects

Annual Commitments

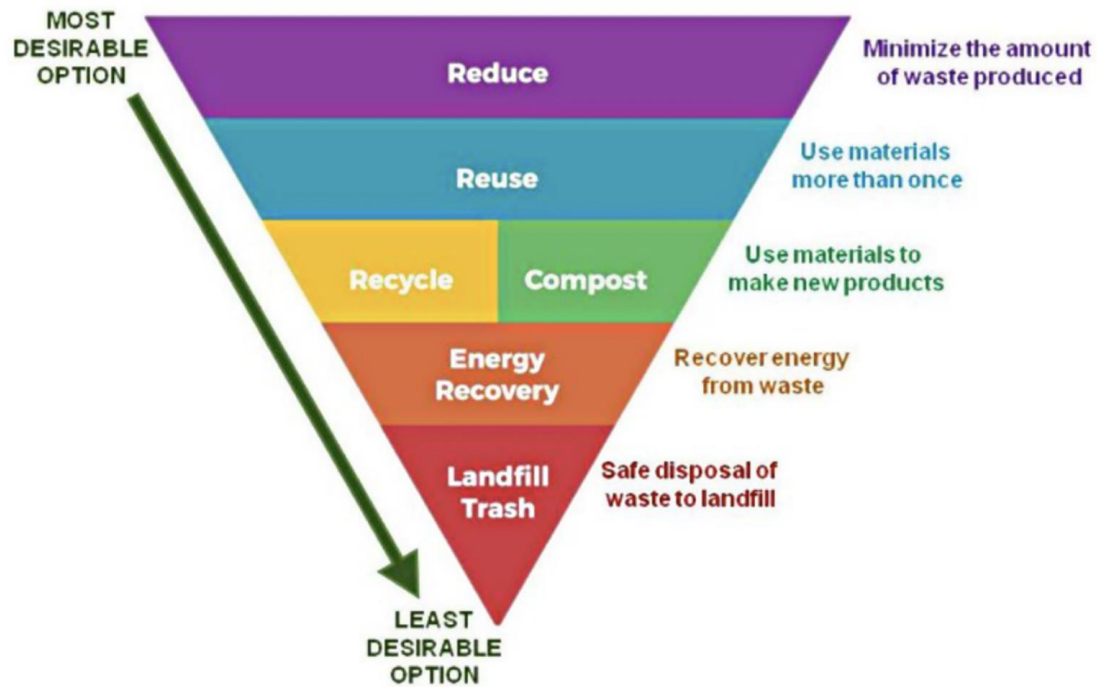
(in \$ million)



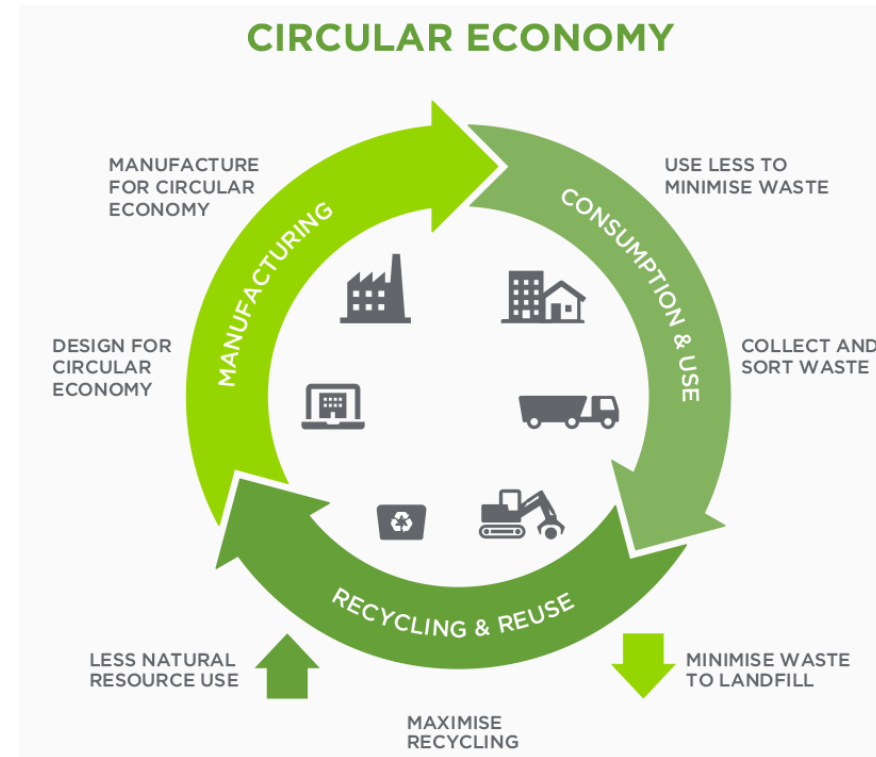
Transitioning to a Circular Economy

- *Waste hierarchy and circular economy principles are yet to be mainstreamed into many country strategies and operations.*

a. Waste Hierarchy



b. Circular Economy



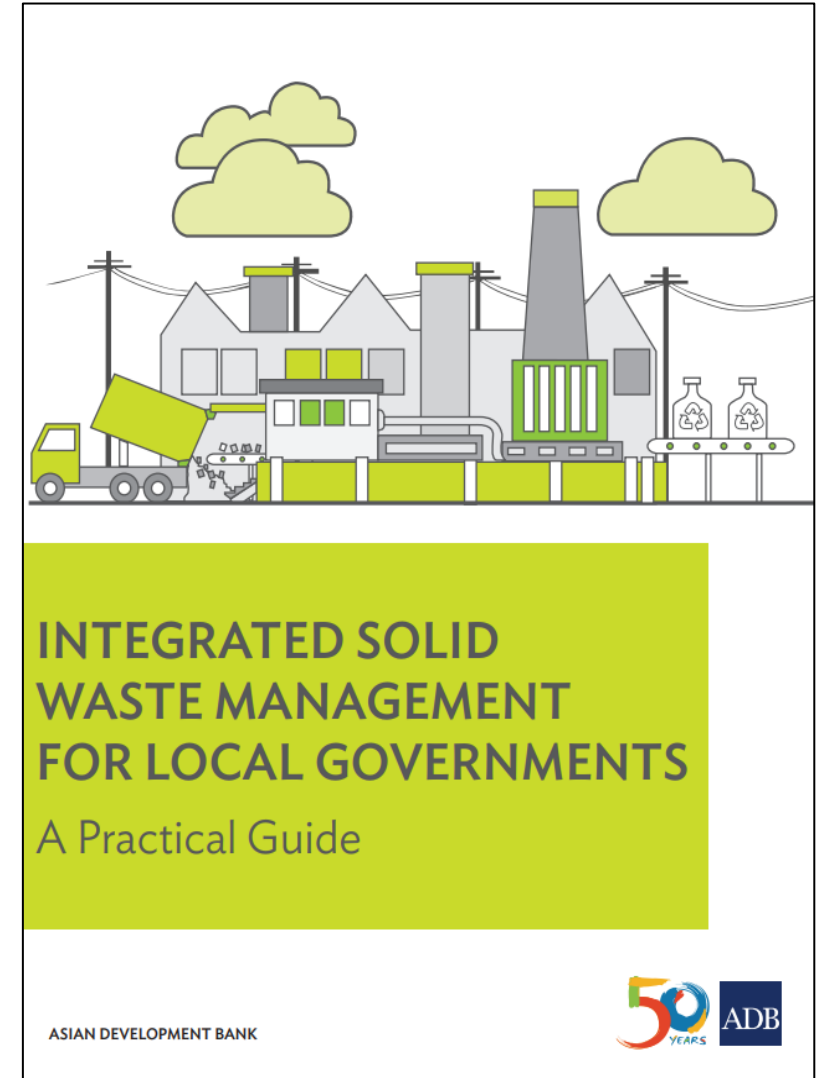
Integrated Solid Waste Management for Local Governments (A Practical Guide)

A knowledge product produced in 2017 under **TA 9025-REG: Establishing the Future Cities Program in the Asia and Pacific.**

This practical reference guide introduces key concepts of integrated solid waste management and identifies crosscutting issues in the sector, derived mainly from field experience in the technical assistance project Mainstreaming Integrated Solid Waste Management in Asia.

Contains over 40 practice briefs covering solid waste management planning, waste categories, waste containers and collection, waste processing and diversion, landfill development, landfill operations, and contract issues.

Available on-line: <https://www.adb.org/documents/solid-waste-mgt-local-gov>



Bangladesh: Coastal Towns Climate Resilience Project

Challenges

- high levels of hazard, exposure, and vulnerability to climate-related disasters because of factors including low elevation, high population density, high poverty rates, and limited capacity of local governments
- An estimated 2.5 million-7.2 million people annually will be affected by **coastal flooding in Bangladesh** from 2070 to 2100.
- **Inadequate stormwater drainage facilities** and **poor solid waste management** are critical factors that contribute to increasing climate-related disaster risks.
- capacity limitations, siltation, and **dumping of solid waste in drains** causing severe flooding and extended water logging.

Integrated approach

- Adopt an integrated approach for coastal town development that promotes risk-informed planning and investment for building resilience.
- Towns with high exposure to flooding selected to support integrated waste management improvement

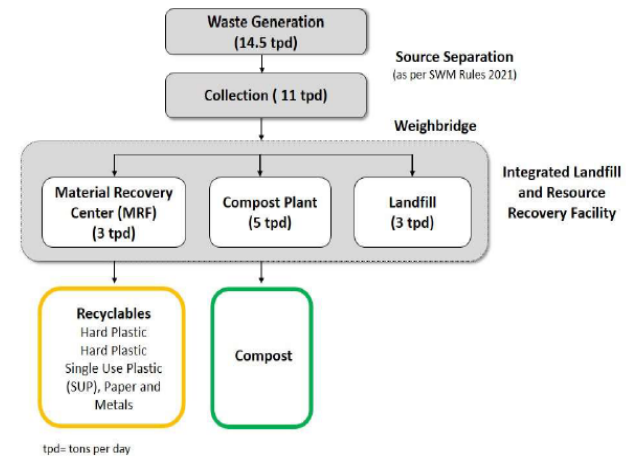


Uncontrolled Disposal of Solid Waste in the Proposed Landfill Site

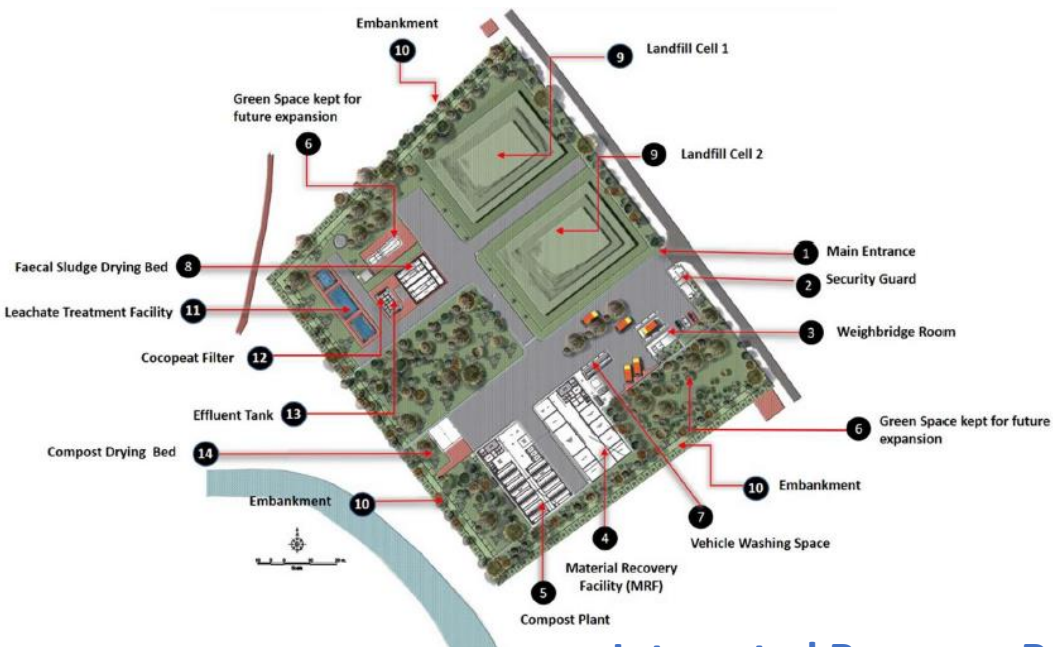
Approval	:	26 October 2022
Completion Date	:	December 2029
Total cost	:	\$310.0 million
- ADB	:	\$250.0 million
- Government	:	\$60.0 million
Climate adaptation	:	\$226.0 million (ADB Financing)
Climate mitigation	:	\$1.2 million (ADB Financing)
Project coverage	:	22 pourashavas (urban local bodies)

Bagerhat Waste Management Improvement

- **Challenges:** uncontrolled disposal, multiple handling of waste before disposal, uncovered collection, waste collected from drains and streets not transported timely to designated places daily, no waste collection and disposal services available in the slums, no reliable data available regarding the daily demand for fecal sludge collection and disposal, and most of the pit latrines and septic tanks are connected to drains or water bodies.
- **Integrated approach** – addressing technical elements (source separation, collection, storage, transportation, recycling, resource recovery and disposal) and governance aspects (institutional, financial and regulatory).

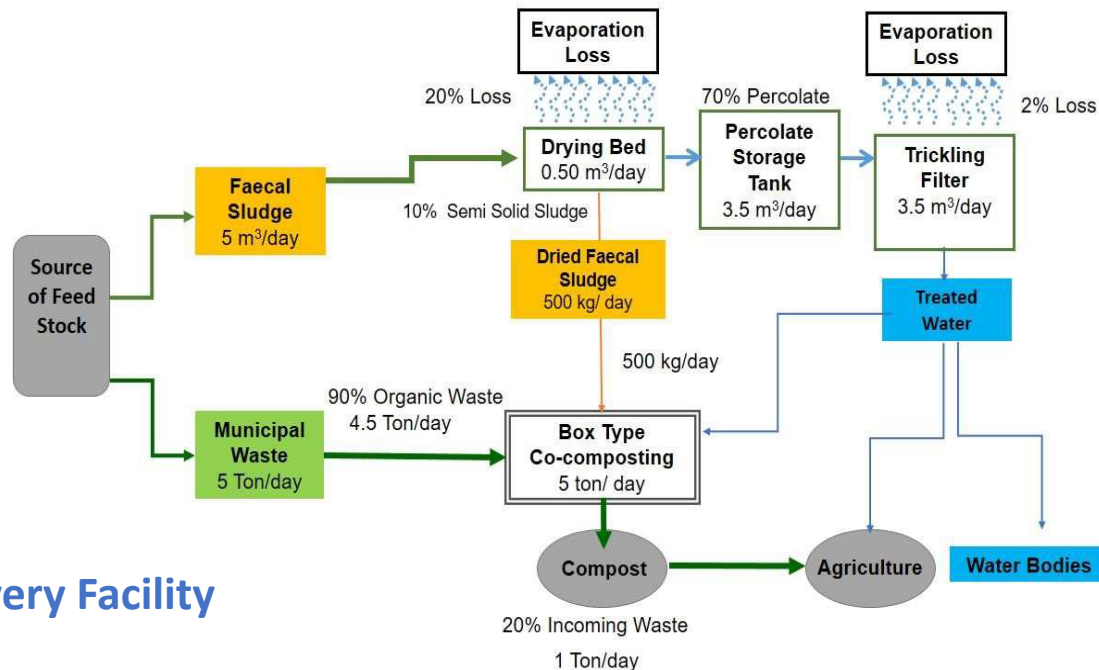


Mass Balance of Waste



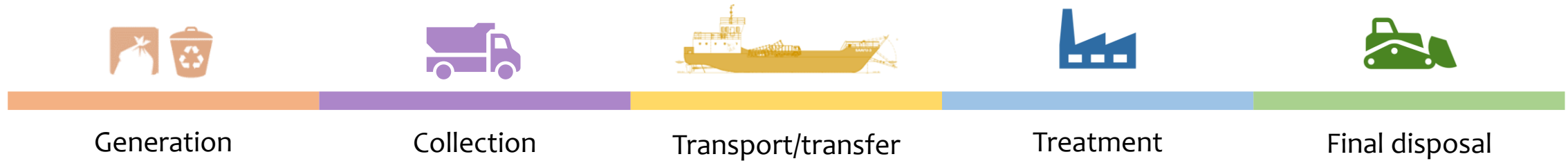
Integrated Resource Recovery Facility

Co-composting Conceptual design of FSTP



Maldives: Greater Malé Environmental Improvement and Waste Management Project / Waste to Energy Project

The project will establish a sustainable solid waste management (SWM) system in the Greater Malé area by (i) establishing a modern waste collection, transfer, treatment (waste-to-energy), and disposal system; (ii) improving outer island waste management systems; (iii) building institutional capacity for sustainable services delivery; and (iv) raising public awareness on sustainable behaviors.



GM Environmental Improvement and Waste Management Project 2018-2023

\$40.00 million (ADB and JFPR)

1. Improved waste collection, transfer and disposal in Greater Malé including improved site management and logistics on Thilafushi (temporary) + construction and demolition waste
2. Improved outer island waste management system
3. Improved awareness and behavioral change



GM Waste to Energy Project 2020-2026

\$151.13 million (ADB, AIIB, JFJCM)

1. Regional waste management facility with WTE plant and landfill for air pollution control residues and incinerator bottom ash;
2. Institutional capacity & public awareness in reduce-reuse-recycle (3R) practices

Strengthened **institutional capacities for sustainable solid waste service delivery** and **environmental monitoring**

Greater Malé



Kurumba Maldives

Hulhumalé

Malé

Villimalé

Gulhi Falhu

Thilafushi

Thilafushi

Velana International Airport

The Somersset Hotel

Treasury Building

Varunulaa Raalhugandu

Eastern Beach

The Avenue and Spa

Villingili Public Beach

Boduthakurufaanu Magu

Fithiroonu Magu

Nirolhu Magu

Hulhulé-Malé Ferry

Machhil Magu

2018, before the project





DESIGN-BUILD AND OPERATE
WASTE TO ENERGY FACILITY IN K.THILAFUSHI

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CHNOLOGY
DIVES

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INVESTMENT BANK

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2.03.2022

2025

Nov 2022

JAPAN
FUND FOR
THE JOINT
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Output 1

Disaster- and climate- resilient regional waste management facility developed (500t/d WTE – 15yrs DBO – 8MW)



Output 2

Institutional capacity in sustainable WTE service delivery and environmental monitoring, and public awareness on WTE and 3R improved

Greater Malé WTE Project

\$151.13 million (ADB, AIIB, JFJCM, GOM)

Approved in Aug 2020



India: Madhya Pradesh Urban Services Improvement Project – Additional Financing includes:

Project Cost and Funding:

Total:	\$385.7 million
ADB:	\$270 million
Government:	\$115.70 million

Date of Project Commitment:
12 October 2020

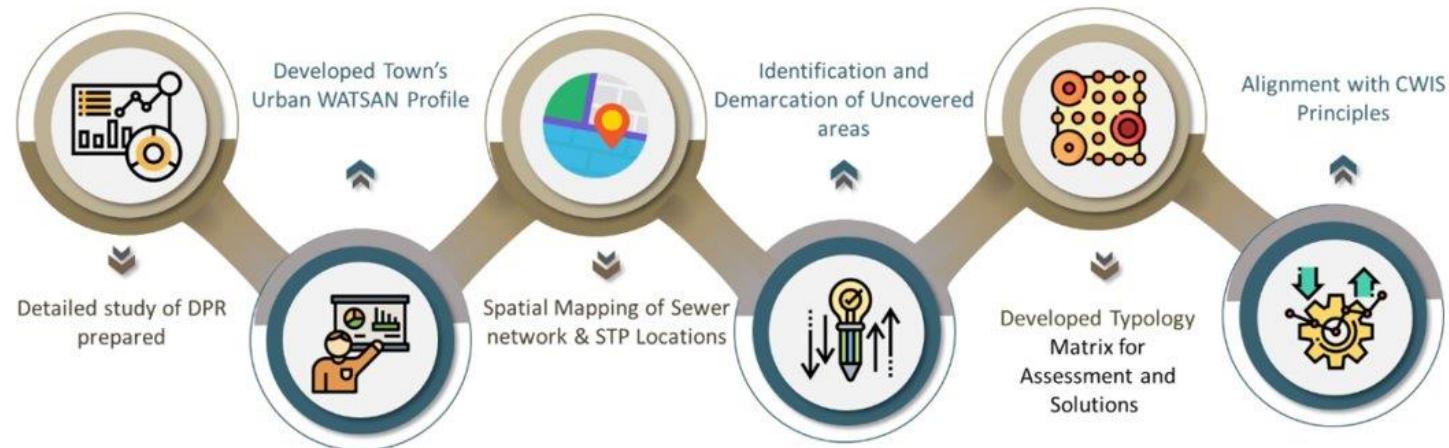
Benefiting population: 1.3 million

Water Investment ++

- universal coverage, tariff setting, O&M cost recovery, 100% household metering, volumetric tariff, Hybrid DBO contract, e-governance (billing, collection, and customer center, e-procurement), and tax net

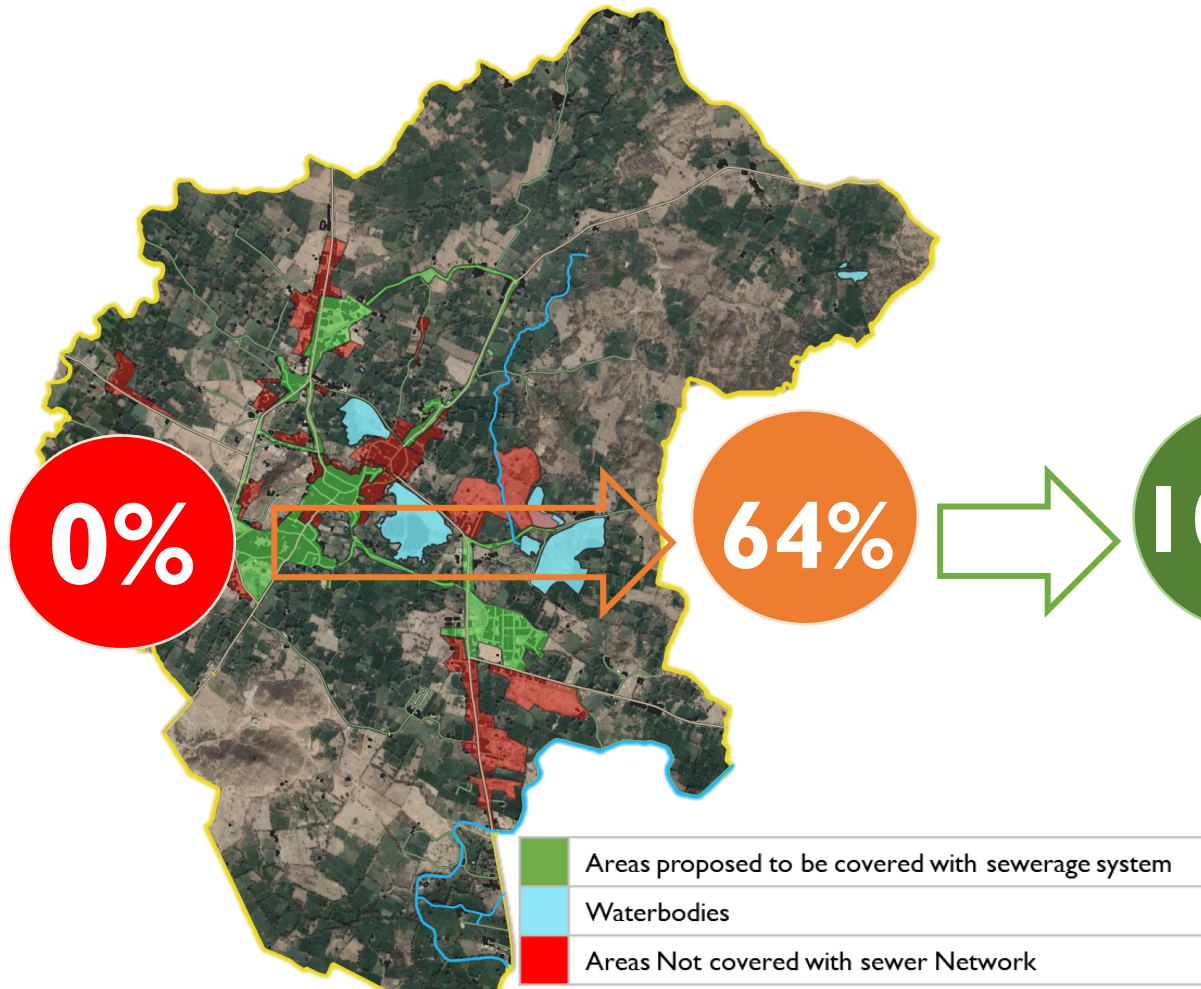
Mainstreaming Citywide Inclusive Sanitation

- Mainstream citywide inclusive sanitation (CWIS) in planning, design and execution of the wastewater management subproject





INDIA – Madhya Pradesh Urban Services Improvement Project – Additional Financing TOWARDS MODEL CWIS TOWN – RAJNAGAR MUNICIPALITY





ADB support to SBM 2.0

- \$200m results-based loan processed for 2023 approval
- Comprehensive waste management in ~100 cities across 7-8 states
- Attached TA supporting climate and disaster resilience, knowledge & capacity building
- Synergy with ongoing & proposed ADB investments at central, state & ULB level
- Upstream work for potential PPP and private sector engagement
- Further \$300m in 2026



Challenges and constraints for effective SWM

- Financial sustainability: difficult to charge; current practice (i.e., linear process) is cheaper (collection – open dump); benefits are mostly positive externalities (GHG reduction, clean air/water).
- Source segregation is key but difficult to achieve quickly
- Policy and regulatory reform to accelerate circular economy
- Different views on solutions even among professionals – what's ideal and what's realistically possible (how much recycling and how – material, chemical, and thermal?)
- Technical and operational complexity in treatment and scientific disposal – limited capacity of local governments, particularly in small ULBs
- Poor integration of SWM with informal recycling sector
- PPP challenges on SWM because of the above complexities



The Way Forward

- increase **focus on SWM** that improves urban environmental conditions and reduces GHG emissions; **support ocean health action plan** through specific and targeted interventions to address sources of land-based pollution (solid waste, plastic, wastewater etc.) in cities
- mainstream in the **design of SWM projects**: to include measures for building the capacity of urban institutions, improving urban policy and governance, and citizens engagement in SWM; and **adopting circular economy principles**
- mobilize more **resources through trust funds** and promote partnerships with external stakeholders to expand financing, capacity development, and knowledge sharing/dissemination for SWM
- engage in **city-to-city partnerships** to foster knowledge and experience sharing for sustainable SWM practices with cities in ADB's DMCs
- engage in **medium- to long-term** to support system development, capacity enhancement, and sustainability; identify **workable solutions** for step-wise improvement



Thank you

