PROJECT FOR THE URGENT IMPROVEMENT OF SOLID WASTE MANAGEMENT IN YANGON CITY (2019-2023)

福岡市 FUKUOKA CITY

WORLD URBAN FORUM

UN-HABITAT

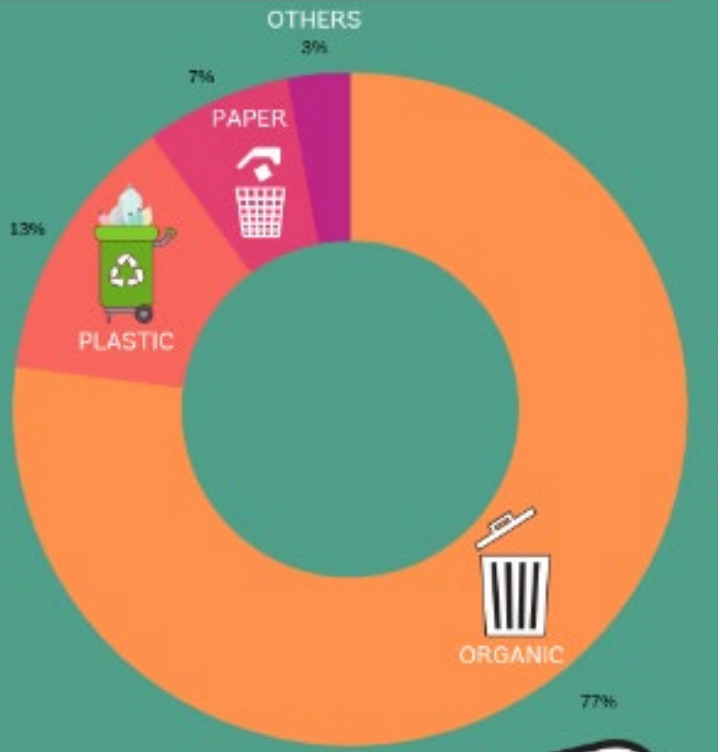
Solid Waste Management and Air Pollution in Myanmar

- As a risk factor for death, air pollution is higher in Myanmar than in other countries in the region and is **almost twice the average for Southeast Asia.**
- For Myanmar youth aged 5 to 14 years, particulate matter pollution is the leading risk factor of death among all risk factors, including **malnutrition and other behavioral risks.** *(source: Myanmar Country Environmental Analysis, World Bank)*

•**Landfills that are almost at their full capacity**, waste dumping without any compaction, surface and groundwater contamination, methane production, release of greenhouse gas and potential landfill fires.

The actual amount of waste generated by households and industry is not known as there is no regular waste sampling and analysis carried out, and there is insufficient information on the exact waste collection coverage in different geographical areas. Based on the analysis of the landfill waste disposal data, it could be concluded that the waste collection coverage is about 53% in Yangon and 84% in Mandalay.

MUNICIPAL WASTE COMPOSITION



AVERAGE WASTE GENERATION IN MYANMAR

0.56
kg/cap/day

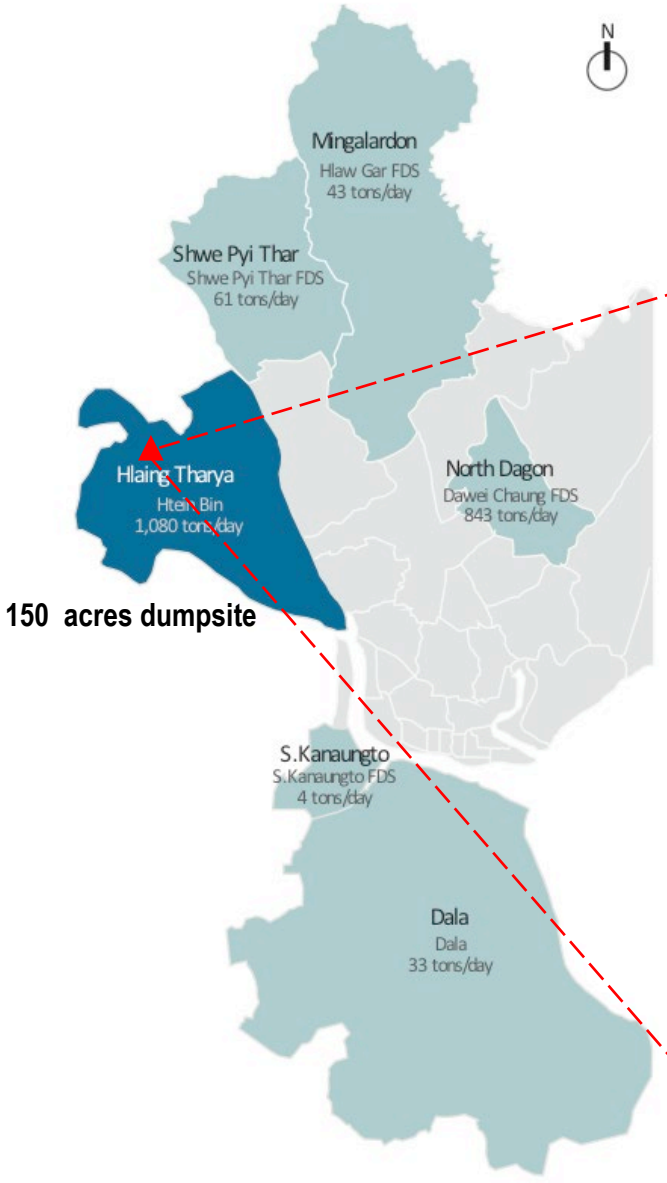
28.85
tons/day

10.5
million tons/day

Waste landfilling in Myanmar is estimated to cost less than **US$ 1 per ton** and is carried out without environmental protection

RECOMMENDATIONS

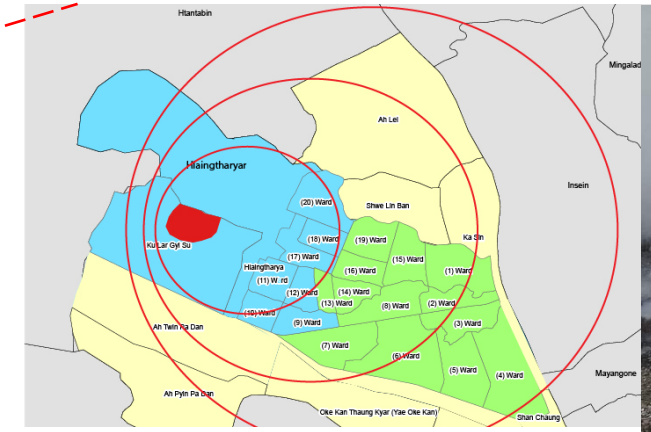
Background of SWM Project in Yangon



150 acres dumpsite

Problem statement

- Largest open landfill site in Myanmar and causing environmental pollution and air pollution
- Three weeks long fire outbreak in April 2018 at Htein Bin dump site
- Deterioration in air and water quality
- Numerous people effected with respiratory problems

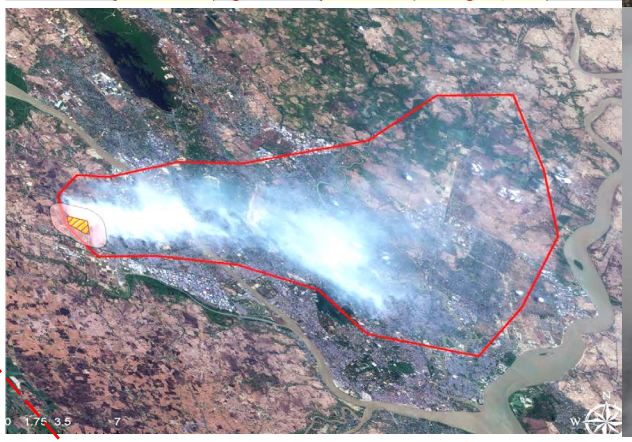


Urgency

Obligation

Unpredictability

Substitutability



2018 Fire outbreak affected area

Background

Core Objective

To contribute to reduce the risk of future fire hazard and environmental hazard by the establishment of safe and sustainable waste management systems for Htein Bin dump site of the Yangon city through the implementation of the Fukuoka Method of solid waste management (SWM).

Component 1

Stabilization of existing dumpsite (Htein Bin)

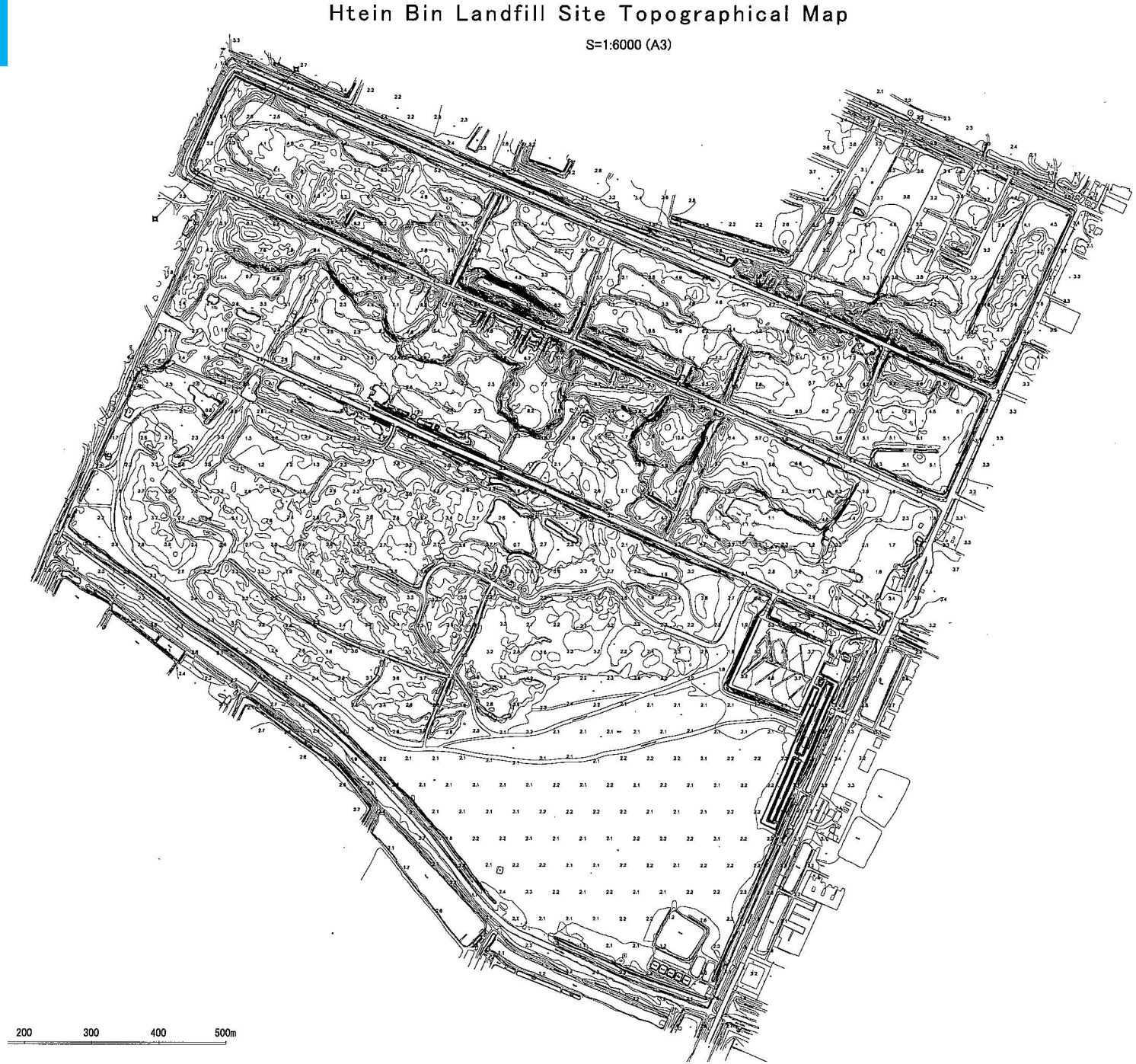
Component 2

Construction of the Fukuoka Method land fill (technology-transfer)

Project Approach and Components

COMPONENT 1:
Stabilization of existing dumpsite

- Rapid assessment
- Designing and planning
- Reviewing
- Stabilization
- Capacity Building



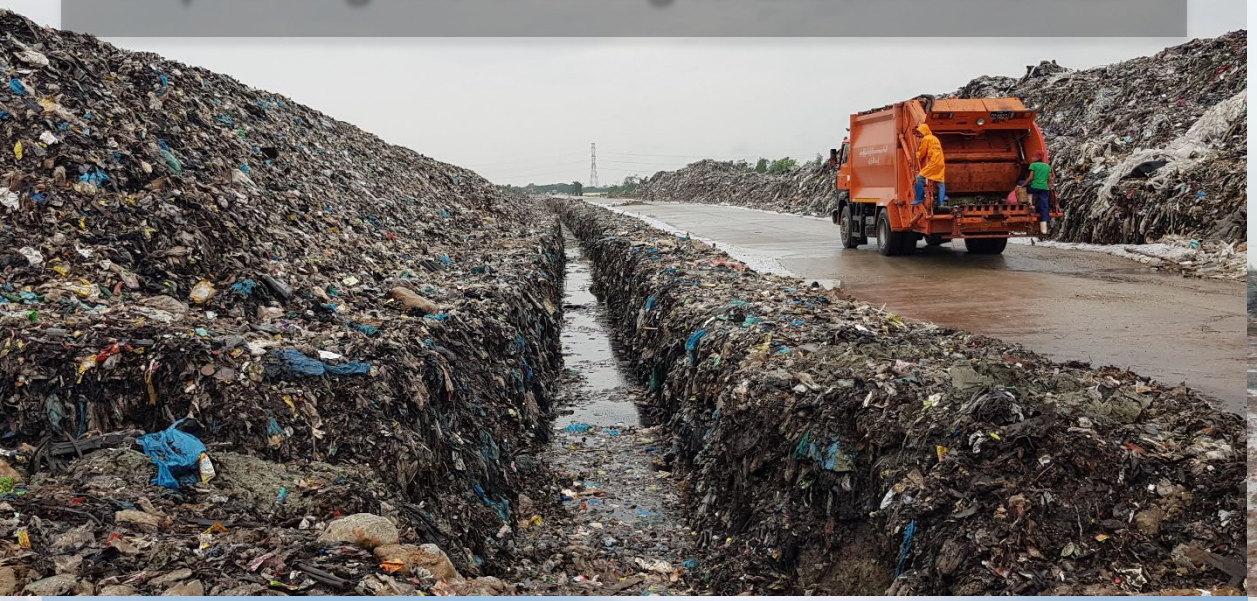
Before rehabilitation

- Anaerobic situation, bad odor
- High risk of landfill fire
- No systematic routes and access

Before rehabilitation

Hazardous environment for landfill site workers and surrounding settlements

Improving the drainages around the cell



Construction of access roads

Installation of perforated ventilation pipes

Construction of stages

After rehabilitation

- 49 hectres of Rehabilitated Areas
- Installation of perforated ventilation pipes

After rehabilitation

- Construction of leachate ponds
- Installation of leachate treatment systems (aerators and eco-fans)

After rehabilitation

“No fire outbreak since after the rehabilitation of the disposal site area and this summer we were not worried at all!”

Ko Tin Aung Lin, Fire Security of the landfill site

Project Approach and Components

COMPONENT 2: Construction of the Fukuoka Method Land fill

Construction of 5 hectares new Fukuoka method landfill in B3

Pilot site completion

- 1 hectare of completed pilot site
- Maintenance and monitoring for future land utilization

Technical transfer for sustainability

- Maintenance of the embankments
- Heavy machine mobilization for waste compaction
- Eco-fan training

Technical transfer for sustainability

- Environmental monitoring trainings
- Replication of Fukuoka method in two other final disposal sites in Yangon

Community Mobilization Activities

1. Assessment
2. Waste Audit
3. KAP Analysis
4. Improving SWM
5. Trainings
6. Clean up Campaign

Community Composting

Continued Success and Effort in Environmental Monitoring and Fukuoka Method

Enviromental Monitoring at Htein Bin Landfill site					30.4.2024	
No.	Locations	pH	EC (mS/cm)	Leachate Volume Generated sec { for 1000ml }	Temperature ('C)	Remarks
1	A2-3	7.4	15.2	26.9	43.3	
2	A5	7.8	18.4	11.2	49.5	
3	B3-1	7.7	16.5	12.1	44.2	
4	B3-2	8	14.6	8.5	45.2	
5	Pilot	7.9	22	61.1	35	
6	Pilot -1	8.0	21.3	-	33.2	
7	Pilot-2	7.9	11.6	-	30.6	
8	Pond-1	7.9	7.9	-	32.4	
9	A6 Pond	7.6	6.2	-	35.9	
10	A7 Pond	7.4	6.4	-	27.9	
11	C7 Pond	7.5	7.1	-	30.9	
12	BG - 1	7.4	3.4	-	27.6	

Status of Htein Bin FDS in 2024

- **Ongoing commitment** of the Urban Environmental Conservation and Cleaning Department (UECCD),
- **Continued routine of environmental monitoring and employing the Fukuoka Method** for landfill site management.

By maintaining the project's success, UECCD ensures that Htein Bin remains a model of sustainable waste management and environmental responsibility, extending the sustainability of the project.

- Continuation of the Fukuoka method by the other landfill management authorities.
- Environmental monitoring.
- Transformation of completed landfill areas into recreational areas.

Way Forward

- Reduced landfill fire and environmental risks
- Nation wide replication of Fukuoka Method Solid Waste Management
- Clean and Green Cities
- Contribution for climate change mitigation

WORLD URBAN FORUM

UN-HABITAT


WORLD
URBAN
FORUM
THANK YOU!
UN HABITAT
UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME