



# **Current Situation of Solid Waste Management in Yangon City**

**ヤンゴン市における廃棄物の現状**

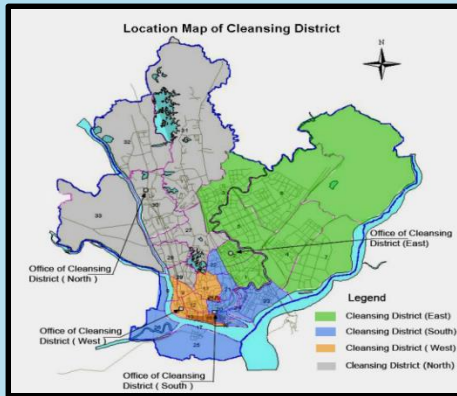
**ヤンゴン市  
環境管理局  
副局長 Mr. Saw Win Maung**

**Presented by  
Mr. Saw Win Maung  
Deputy Head of Department  
Environmental Management Authority  
Yangon City Development Committee**

# Profile of Yangon City

ヤンゴン市のプロフィール

Area	面積	-	292.426 Square Miles.
Population	人口	-	5.6 million (2014)
Township	町区	-	33 Townships
Generation Rate	ゴミの排出量	-	0.41 Kg / Capita / Day
Household Waste Generated	家庭ごみの排出量	-	2500 tons per day
Industrial Waste Generated	事業ごみの排出量	-	250 tons per day
Health Care Waste Generated	医療系ごみの排出量	-	87.9 tons per day



# Organizational Chart of YCDC

ヤンゴン市の組織図

**Mayor**



市長

**Secretary**



副市長

**Joint-Secretary**



**2 persons of  
Committee Members**

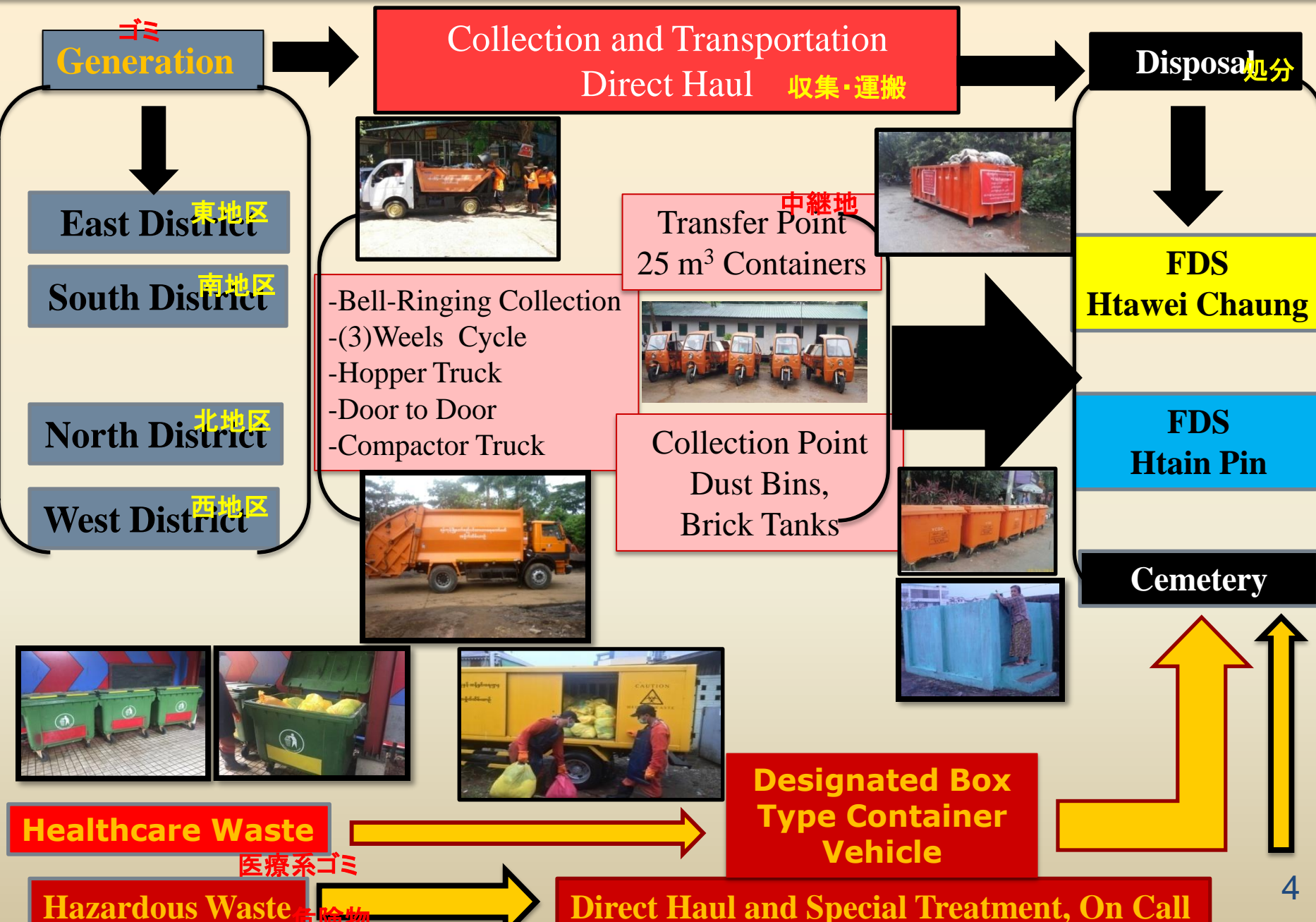


**7 Authorities + 3 Departments**

**( Including Environmental Management Authority )**

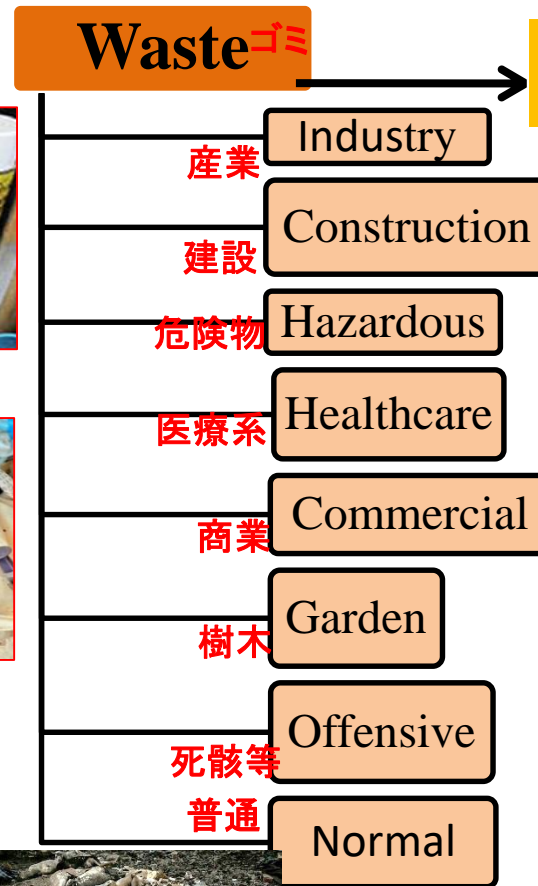
# Waste Flow in Yangon (2018)

ヤンゴン市の  
廃棄物フロー



# Waste Define in Yangon

ゴミの分類



**Household waste**

家庭ごみ



**Organic Waste**

有機ゴミ



**Inorganic Waste**

無機性



# Problem Analysis

## Urban Development

- Population
- Pop. Density
- Slum quarters

## Laws and Regulation

- Lack of proper regulation
- Lack of law enforcement
- Not immediate action

## Land issue

- Future Availability (not enough area for future volume of waste)

## SWM Plan

- Treatment options
- Master Plan
- Annual implementation plan
- Essential roadmap
- No plan for industrial and hazardous waste

## Waste Volume / Quality

- Generation volume increase

## Collection / Transportation

- More collection/ transportation volume
- No transfer station/ transit point
- Need more truck for segregated collection

## Final Disposal

- Limited area
- Improper FDS Operation
- Need sanitary landfill

## Intermediate Treatment

- Consider Waste to Energy plant or incineration

## 3R

- No 3R Promotion

## Financial Issue

- Low collection fee rate
- No tipping fee allowed
- Consideration of PPP
- Low tariff rate by YESC

## Public Awareness

- Lower willingness to pay of residents
- Social mis-understanding
- Illegal dumping
- Street vender's waste
- Complaint on the dust bin

## Organization / HR Capacity

- Low salary
- Need capacity building
- Need ToT

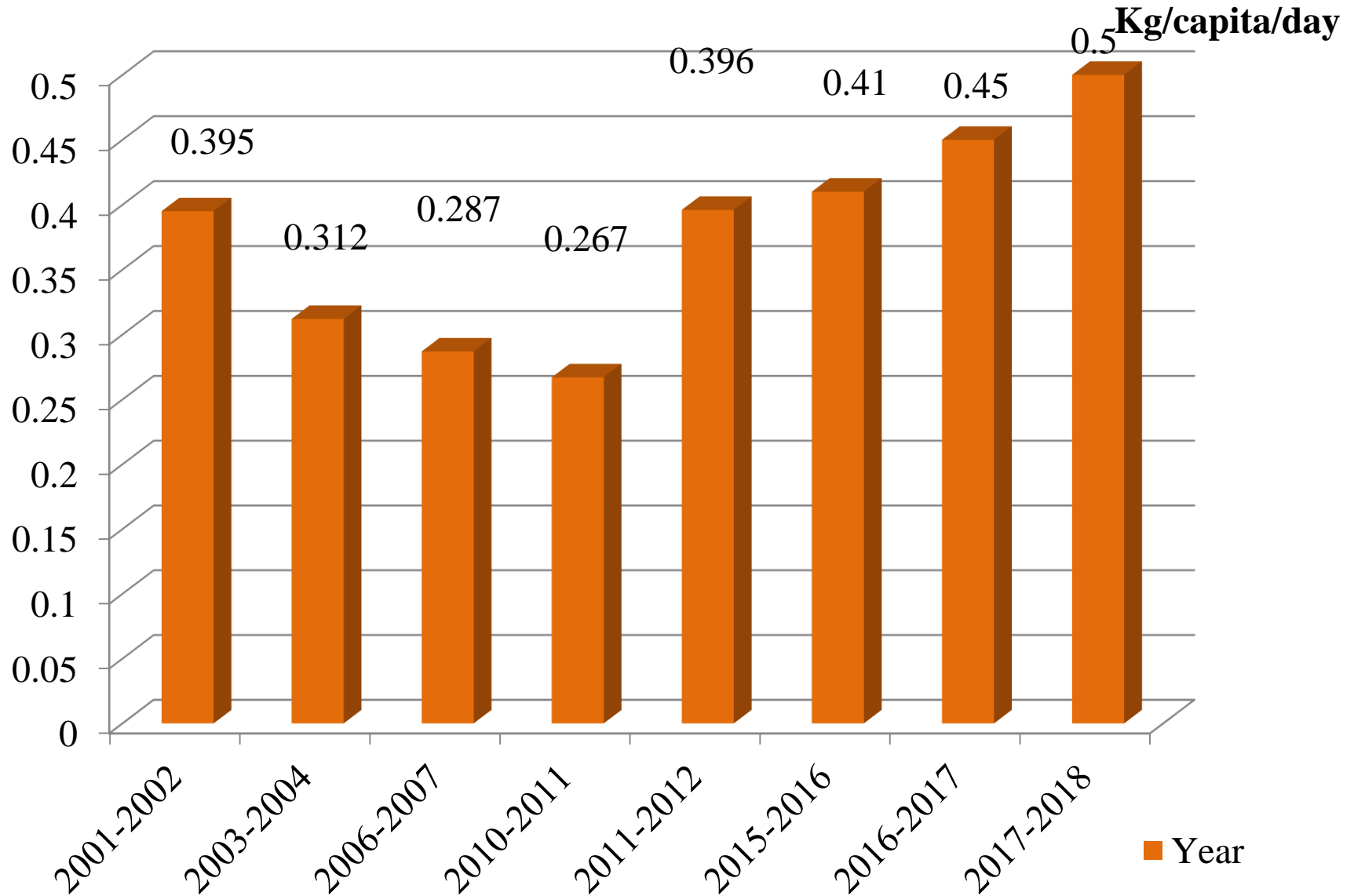
# Critical Urban Environment Issues

喫緊の都市環境課題



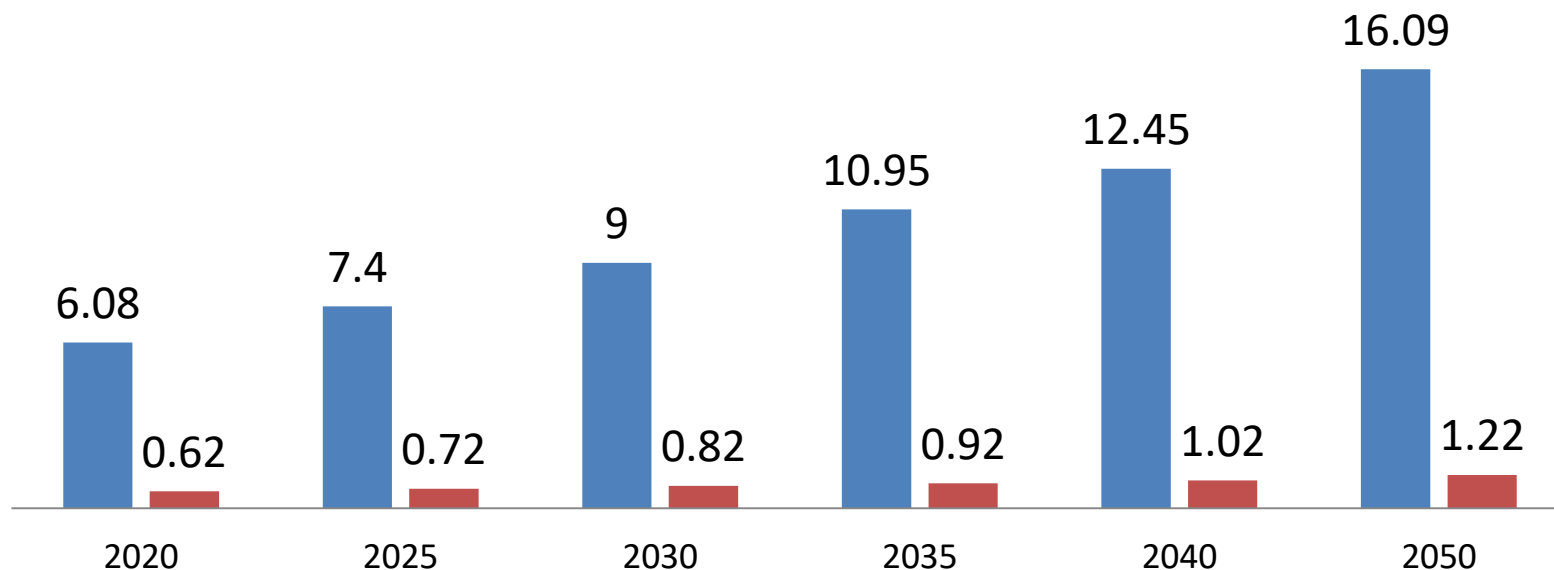
# Waste Generation Amount of Yangon City

ヤンゴン市からでるゴミの量

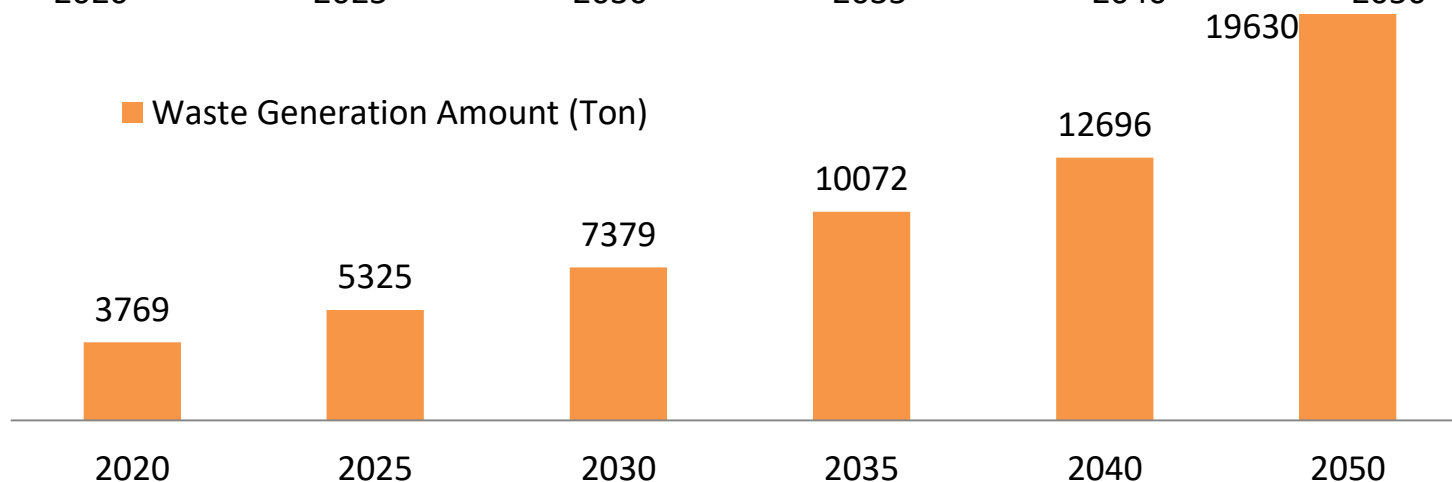


# Estimation of Waste Generation Amount from 2020 to 2050

■ Population Rate(%) ■ Waste Generated Amount/Person (kg/capita/day) 2020年から2050年のゴミ排出量予想

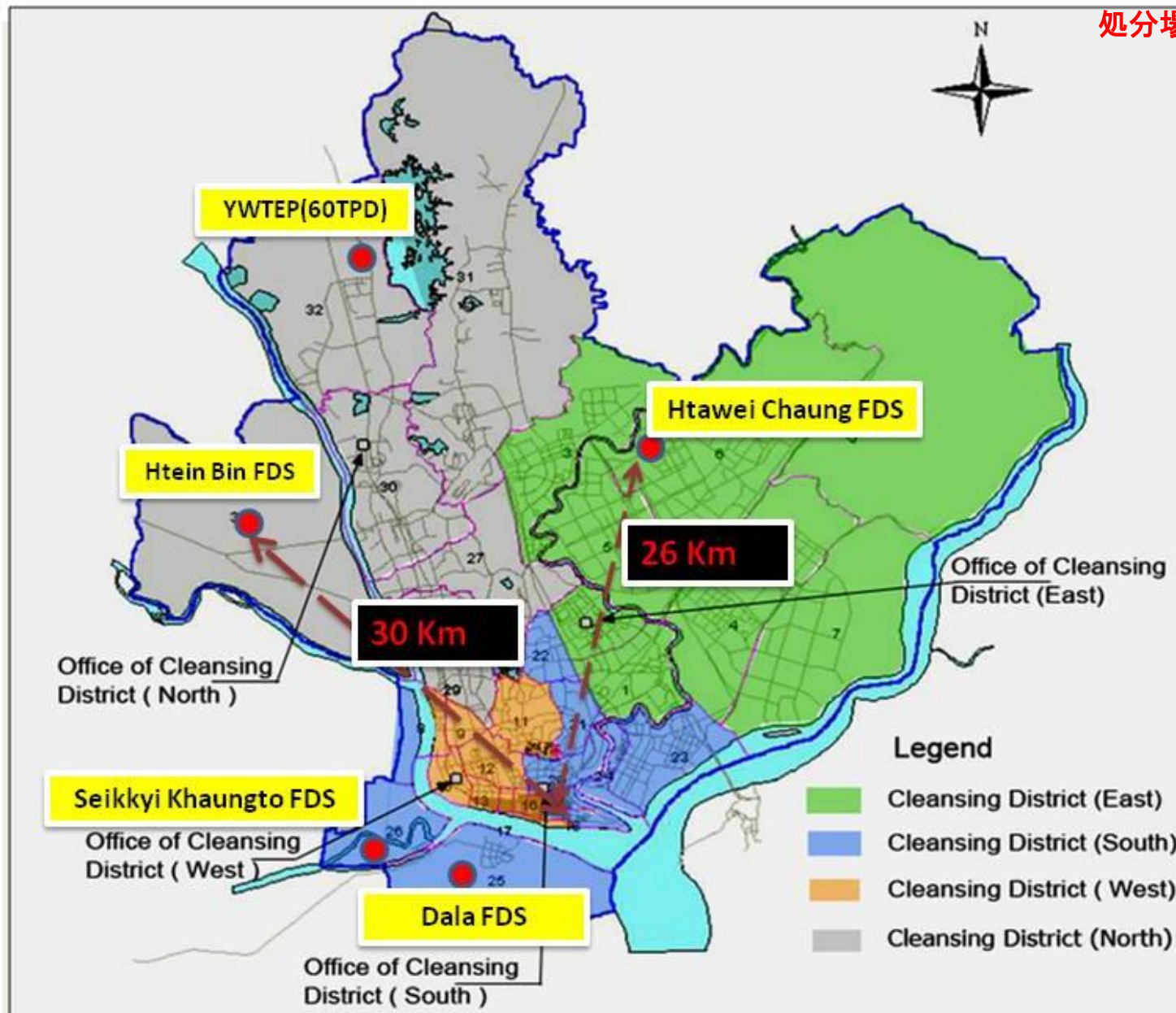


■ Waste Generation Amount (Ton)



# Location Map of Final Disposal Sites

処分場の場所



# Current Situation of Final Disposal Sites

最終処分場の状況

Daily Waste Generated Amount = 2500 Ton/Day(Approx.)

No	Name of FDS	Constructed Year	Site ( Plant) Area	Remaining Area	Dispose Ton Per Day ( Current EST)	Remark
1	Htain Bin	2002	290- Acre Used- 220 Ac	70 - Acre	1111.12	Open Dumping
2	Htwei Chaung	2001	141- Acre Used- 110 Ac	31	945.61	Open Dumping
3	Dala	2003	<u>1.3- Acre</u> Used- 1.0 Ac	0.3 - Acre	33.36	Low Landfill Temporary Site
4	Seikkyi Khaungto	2003	<u>0.25- Acre</u> Used- 0.1Ac	0.15- Acre	7.11	Low Landfill Temporary Site

# Operation and Management of Final Disposal Sites

最終処分場の管理運営の状況



# Yangon Waste to Energy Plant Project

ヤンゴン市焼却処分プラントプロジェクト

✓ Implemented by the Leap Frog Program JCM Scheme supported by Japan Government.

**Cooperated Organizations** 日本政府支援 ヤンゴン市PCCDとJFEの協働事業  
**YCDC-PCCD,**  
**JFE Engineering Corporation**

**Location** Taw KyaungKalay cemetery,  
 ShwePyiThar township  
 ヤンゴン市シェピター地区

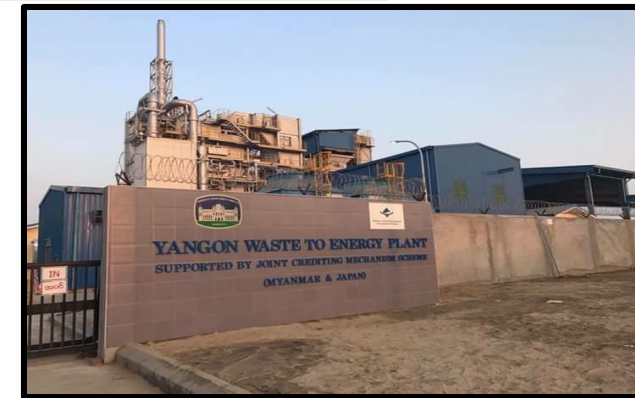
**Construction Period** 2015-2017  
 建設期間

**Investments** 16 Millions as of the JCM  
 Scheme (8 Millions from YCDC  
 and 8 Millions from Japan  
 Government)  
 JCM総額 \$16mil (ヤンゴン市より  
 \$800万ドル、日本より800万ドル)  
 投資内容

**Incineration Capacity** 60 ton/day  
 60トン／日  
 焼却能力

**Power Generation Capacity** 700 KW  
 self-sustain about 400KW and  
 300KW for sale  
 自己運転に400、売電300  
 発電能力

**Operation Started** 7<sup>th</sup> April 2017  
 運営開始



# Proposed Sanitary Landfill Project collaborating between YCDC-PCCD and Fukuoka City, Japan

Cooperated Organizations	YCDC-PCCD, Fukuoka City, Japan ヤンゴン市PCCDと福岡市
Location	Htein Bin FDS, Hlaing Tharyar township 場所:ヒエンビン
Project Period 実施期間:	2018-2020
Project Cost Expenditure プロジェクト費用	Procured by YCDC (Fukuoka City will only provide technical cooperation) ヤンゴン市が資材費用負担、福岡市が技術協力供与
Technology 技術	Sanitary Landfill using Fukuoka Method 福岡方式衛生埋め立て
Total Land Used Area 面積	2.4 Acres (1 Ha)



# Implementation Fukuoka Landfill Pre Pilot Project (January 2018)

福岡方式パイロットプロジェクト



# Fire Incident in Htein Bin Final Disposal Site, one of the biggest FDSs in Yangon City located in Northern Part of the City (April, 2018)

2018年4月に処分場で発生した火災



Started Used Date  
処分場使用開始年

2003

Total Land Area  
面積

150 Acres ( 60 Ha)  
60ヘクタール

Daily Waste  
Disposed Amount  
ゴミ量

1200 – 1500  
tons/day  
トン/日

Fire occurred Date  
火災発生日

21<sup>st</sup> April 2018

Burnt Area  
消失面積

120 Acres (48 Ha)  
48ヘクタール

Completed Fire  
Extinguishing  
消火完了日

3<sup>rd</sup> May 2018

Causes to Fire  
Incident

火災の原因

-Chemical reaction  
from biological  
decomposition  
-heat resulting in  
high temperatures  
- it may cause a fire  
to occur and spread  
from beneath

微生物分解による化学反応の温度上昇によ  
て内部から発火し拡大した可能性がある



# Setting Goals of National Waste Management Strategy and Master Plan

国家廃棄物戦略とマスタープラン

Goal A

Extending sound waste collection service to all citizens and eliminate uncontrolled disposal and open burning 適切な廃棄物回収の全域への普及とダンプサイトの閉鎖

Goal B

Extending sustainable and environmentally sound management of industrial and other hazardous wastes 産業廃棄物や危険廃棄物の持続可能で環境に配慮した管理

Goal C

Substantively prevent waste through 3Rs (reduce, reuse, recycling) and there by establish a resource circular society 3Rの普及によるゴミの削減と資源循環社会の確立

Goal D

Ensure sustainable financing mechanisms 持続可能な財政の確立

Goal E

Awareness Raising, Advocacy and Capacity Building 注意喚起、普及啓発と人材育成

Goal F

Compliance, Monitoring, Enforcement and Recognition コンプライアンス、モニタリング等の徹底

Goals	Implementation Activities	Short Term (ST) 2017-2020	Mid Term (MT) 2021-2025	Long Term(LT) 2026-2030
A	Active Sound Waste Collection Service for all Citizen	70%	85%	100%
	Eliminate the uncontrolled dumping and burning in the cities and mandate the operation of environmentally sound disposal facilities	Major Cities (Yangon, Mandalay, Nay Pyi Taw)	50%	100%
B	Mandate separate collection and sound treatment of hazardous waste	Major Cities (Yangon, Mandalay, Nay Pyi Taw)	50%	100%
	Mandate sound collection and environmentally friendly treatment of all industrial waste	Major Cities (Yangon, Mandalay, Nay Pyi Taw)	50%	100%
C	Mandate the development of city waste management strategies and action plans with actual waste reduction targets by all CDCs and TDCs	25%	50%	80%
	Mandate the introduction of targets for diverting the food waste from LFs	15%	35%	60%

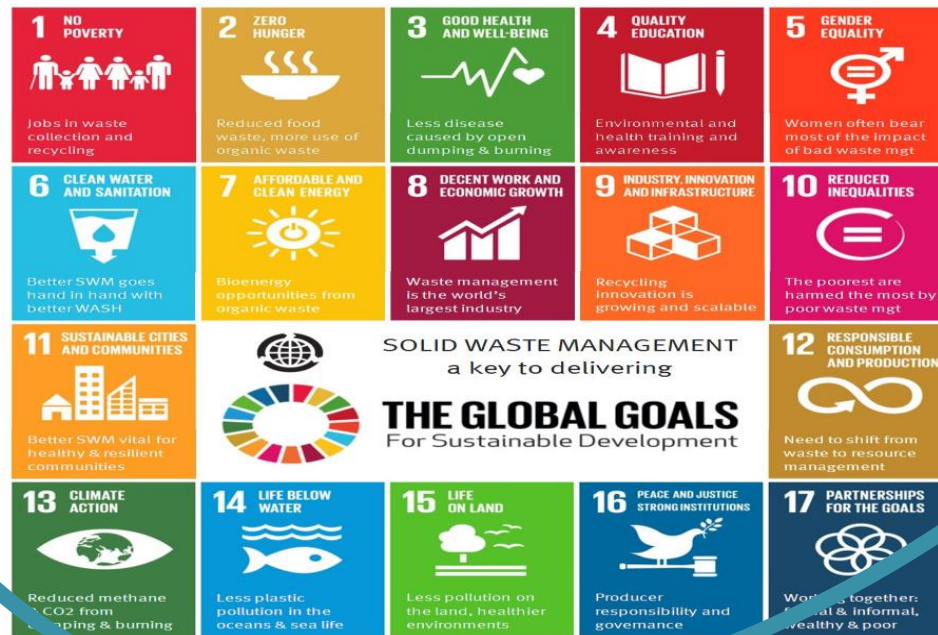
		Implementation Activities			Short Term (ST) 2017-2020	Mid Term (MT) 2021-2025	Long Term(LT) 2026-2030
D	All City and Township Development Committee conduct full cost accounting for waste service				50%	75%	100%
	All City and Township Development Committee establish cost reflective tariffs for waste management services				50%	75%	100%
E	Increase in the number of townships that have implemented standard awareness-raising programmes for their residents				25%	50%	100%
	Increase in the number of schools in the townships that have established environmental education programmes for their students				25%	50%	100%
F	City and Township Development Committees establish benchmark performance indicators				50%	75%	100%
	Increase in the no. of successful enforcement actions filed against non-complaint entities by CDC and TDCs				50%	75%	100%

# ROLE OF THE PLATFORM OF SDGs

SDGプラットフォームの役割

## Promoting Partnerships

パートナーシップの推進



Local Governments

地方行政

Accelerating Innovation

イノベーションの促進

Achieving the SDGs and Building Sustainable Communities with economy, society and environment.

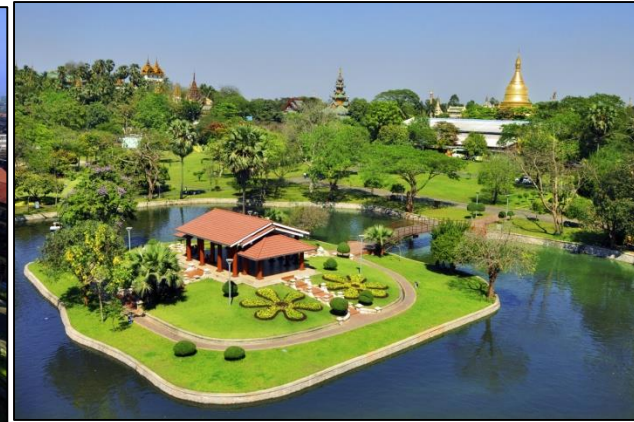
SDGsと持続可能なコミュニティと社会の実現、都市間連携によるパイロット事業活動の創出

Creating of Pilot Initiatives Activities through city to city collaboration.

# PROMOTES 3Rs, RESOURCE EFFICIENCY TO ACHIEVE MULTIPLE SDGs

複数のSDGsを実現するための3Rの推進や資源の効率化

- 3Rs, resource efficiency, and promoting the principles of a circular economy can contribute to achieving the SDGs.
- Formulate on the 3Rs and resource efficiency to achieve clean land, water and air.
- Follow up with Myanmar Climate Change Alliance (MCCA)
- Low Carbon Emission Reduction
- Creating Low Carbon Society



**THANK YOU FOR YOUR ATTENTION**

