

Solid Waste Management Practice in Addis Ababa

An Overview



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ADDIS ABABA INSTITUTE OF TECHNOLOGY
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Outlines

-  Overview of Addis Ababa University
-  Overview of Addis Ababa Institute of Technology
-  Overview of Addis Ababa City
-  Solid waste in Addis Ababa
-  Solid Waste Generation and Composition
-  Solid waste management structure in Addis Ababa
-  House Hold Solid Waste Collection Practice
-  Available Landfill and its practice
-  Plastic waste and recycling



Addis Ababa University

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SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY !



University College of Addis Ababa
(1950–1962)



Haile Selassie I University
(1962–1975)



Highly residential national
university in Addis Ababa and oldest
school of higher education in
Ethiopia



University Ranking: World
1135, Africa 6, East Africa 1



Addis Ababa University

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SEEK WISDOM, ELEVATE YOUR INTELLECT AND SERVE HUMANITY !



47,610 students (29,872 undergraduate, 15,398 Master's and 2,340 PhD students)



8,709 staff



70 undergraduate and 293 graduate programs (72 PhD and 221 Masters)



14 campuses

School of Mechanical and Industrial Engineering

School of Civil and Environmental Engineering

School of Electrical and Computer Engineering

School of Chemical and Bio Engineering

School of Multidisciplinary Engineering

School of information Technology and Engineering

AAIT



Over 5500 undergraduate and about 4500 postgraduate



Over 400 academic and 600 administrative staff.



Six Schools and Centers.



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ADDIS ABABA INSTITUTE OF TECHNOLOGY





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**SCHOOL OF CHEMICAL AND
BIO ENGINEERING**

(Ground Floor) →

School of Chemical and Bio Engineering

**Process Engineering
Chair**

**Food Engineering
Chair**

**Environmental
Engineering Chair**

**Biochemical
Engineering Chair**

**Leather Technology
Chair**

Addis Ababa City



Over 5 million



Area 527 km²



11 Sub City



Over 115
International
organization

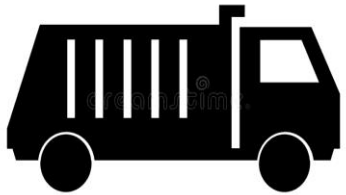
Solid waste in Addis Ababa



Solid Waste Generation



The average waste generation rate was 0.45 kg/capita/day



More than 754,236 tones per year



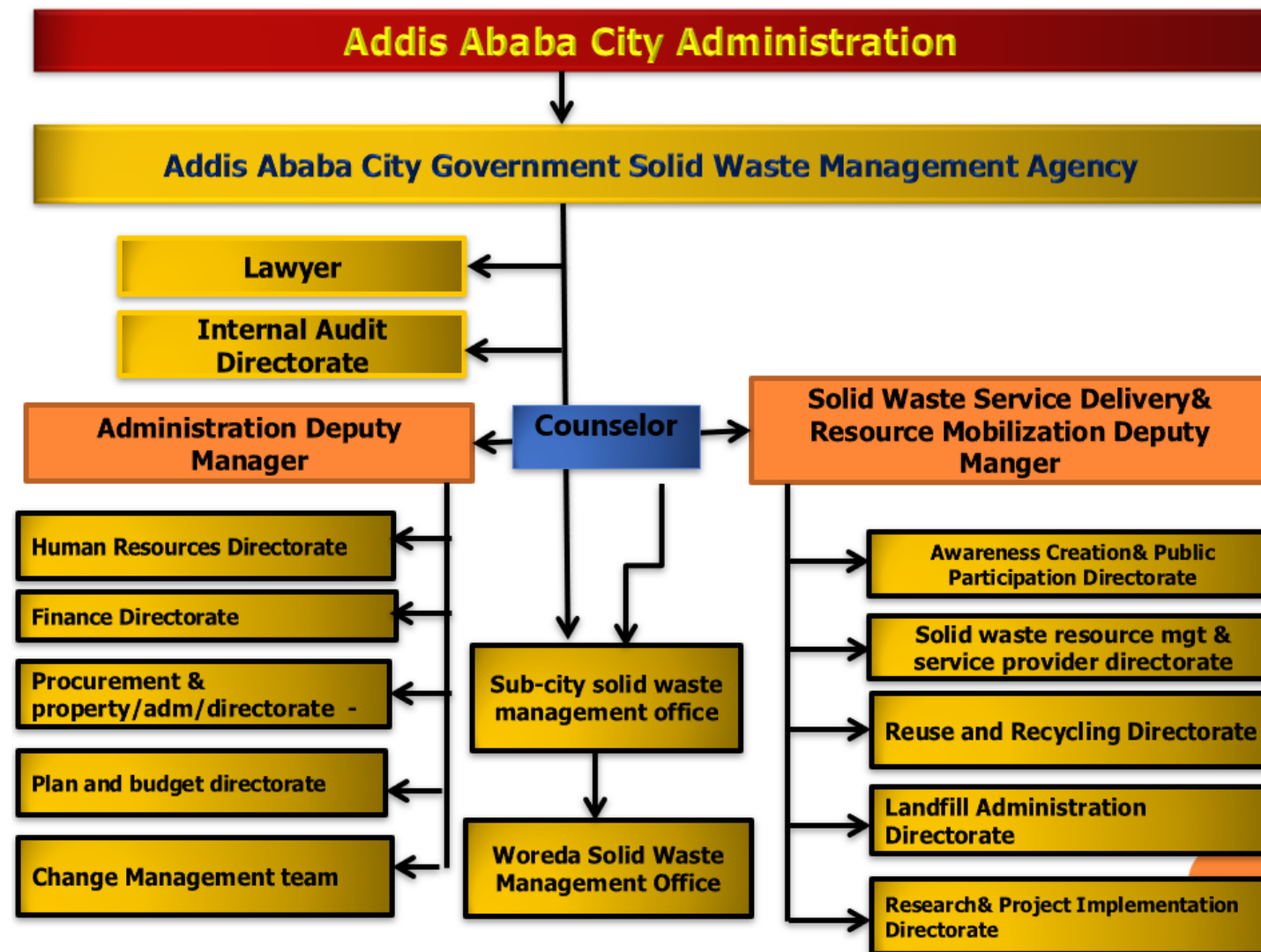
The percentage of waste generated from domestic is 76 %, commercial waste 9 %, hotels 3 %, industrial waste 5 %, street sweeping 6 %, and hospitals 1 %.

Solid Waste Composition (HHSW)

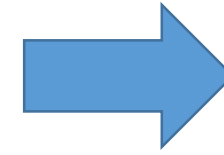
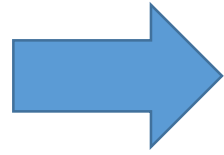
Waste	Composition (%)
Food waste	52.84
Paper waste	4.99
Textile waste	2.21
Plastic waste	9.61
Glass waste	1.32
Metals & aluminum	1.25
Leaves/grass waste	10.33
Diapers & sanitary napkins	7.07
Others waste including leather waste, wood, rubber waste, bones & ceramics waste	3.02
Ashes/fines waste	6.13
Miscellaneous	1.2

About 74.29% of the household waste was biodegradable organic, 17.41% of it was recyclable and the rest 8.27% was potentially hazardous waste. (AASWMA ,2020)

Solid waste management structure in Addis Ababa



House Hold Solid Waste Collection Practice



Collection & transportation



House Hold Solid Waste Collection Practice

- ❑ Solid waste collection services **divided** in to **two sub-systems** : **primary** and **secondary** collection
- ❑ Primary collection is done by **micro** and **small** enterprises (as a **formal sector** started in 2003/2004)
- ❑ Creating **job opportunities** for the **young** and **unemployed**, thereby playing a **part** in **poverty reduction** and private sector development
- ❑ Payment is Volume based rate(**\$ 0.7** Per m³)

House Hold Solid Waste Collection Practice

- ❑ The number of **enterprises** organized to work on solid waste collection is **520** with a total number of **5815** operators
- ❑ Service Charges are collected with **water consumption rate** (About **Residential houses** 20%, **Commercial houses** 42.5%)

Available Landfill

- ❑ There is open landfill (**Qoshee** also known as **Koshe**)
- ❑ The site is located in the **southeastern part of Addis Ababa.**
- ❑ It has been in operation for about **50 years**
- ❑ A total area of about **36 hectares**



Waste to Energy Facility



- ❑ The project was built by Cambridge Industries Limited (CIL)

- ❑ It was fully funded by government with the overall cost put at 2.6 billion birr (\$54 million)

- ❑ 25 mega watt electricity per hour

- ❑ 1400 tone mixed waste per day

- ❑ started operation since August 2018.

Another Practice on the landfill

- ❑ **Landfill gas** and **Leachate control** system is in place to **reduce** emission of **GHGs** & environmental **pollution**
- ❑ The **CDM project** is based upon the **capture** and **destruction** of the harmful greenhouse gas methane produced by decomposing organic matter at the **landfill site**.
- ❑ The project to **capture** and **flare** the **methane** has been made possible through **revenue from the sale of certified emissions reductions (CERs)**.

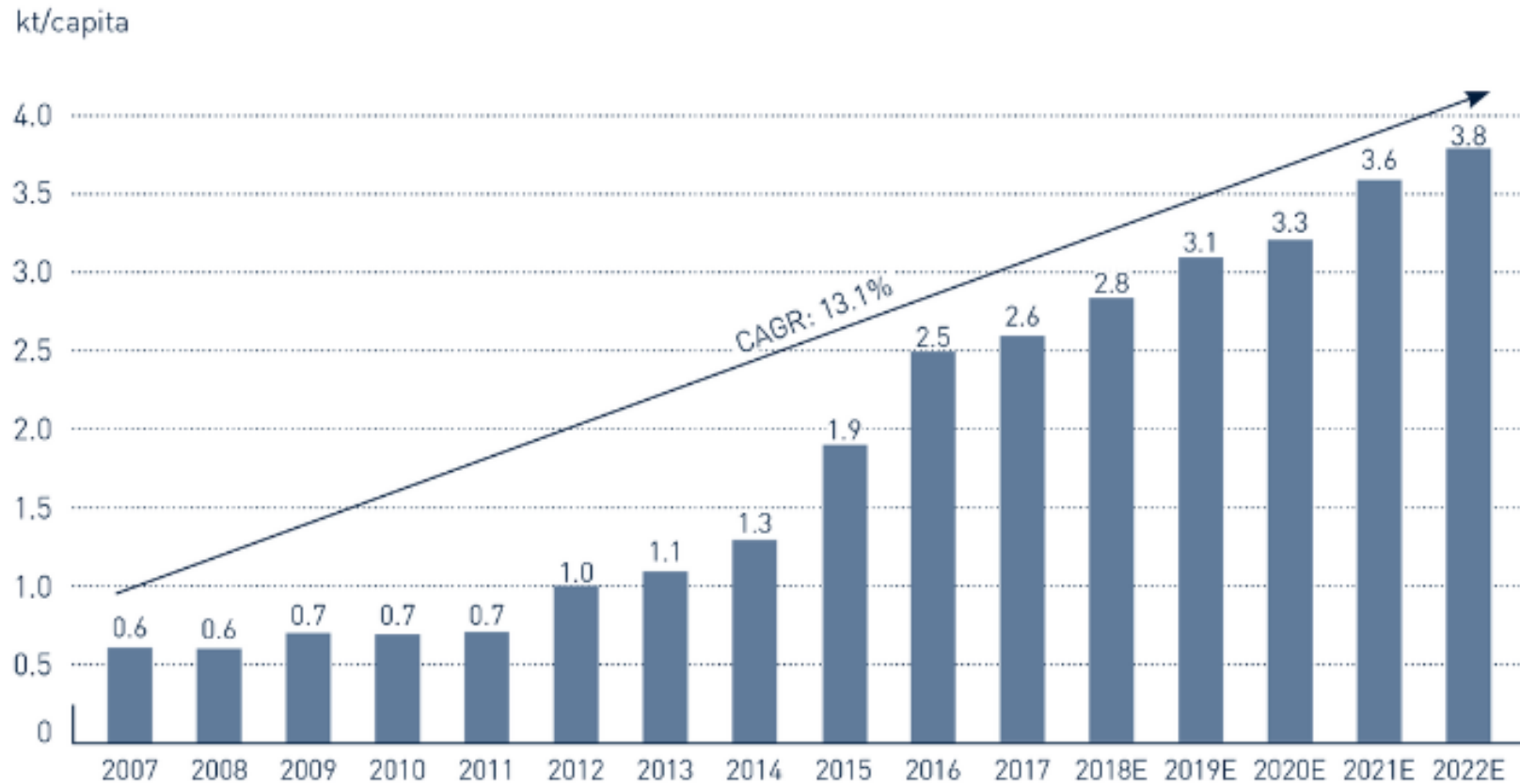
Another Practice on the landfill

- The **Addis Ababa City Administration, Horn of Africa Regional Environmental Centre** and an **international contractor** have installed the **first stages** of the methane capture and flaring system.



Plastic Waste

- The per capita consumption of plastics in Ethiopia has grown by about 13.1% annually over the past years, from 0.6 kg in 2007 to 2.8 kg in 2018 and is estimated to be 3.8 kg in 2022.



Source: EUROMAP / Graph: fairtrade 2019

Recycling Practice



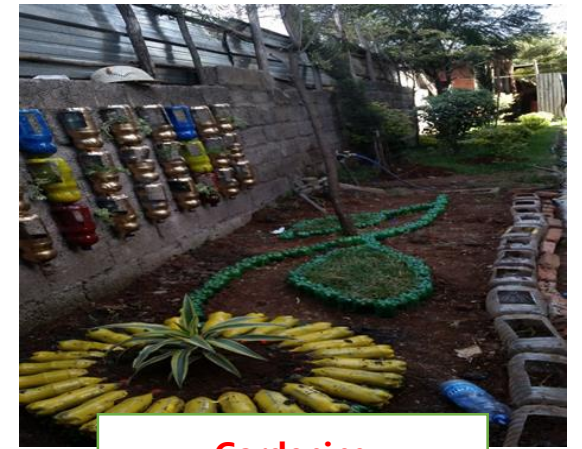
To be sorted by color



To be pressed



Pressed



Gardening



Crashed



Ready for export



Plastic Rope



Household Materials

Plastic Export





Thank you

