



Addis Ababa

Addis Ababa is the capital city of Ethiopia, meaning “new flowers” in Amharic. It is one of the world’s most cosmopolitan cities in Africa, and is the second biggest economic, political and cultural centre in East Africa, following Nairobi. Although the population growth rate was 2.1% per year in 2000-2015, it is expected to increase by 4.0% per year from 2015-2030, and the estimated population of 3.2 million in 2015 is expected to reach 6 million in 2030. Naturally, an increase in waste generation amount is expected as well.

SWM in Addis Ababa City is organised systematically and in line with the waste flow under the Mayor’s Office. As of November 2017, the Rappi(Koshe) disposal site has continued to be used in spite of a collapse accident in March 2017. The Sandafa sanitary landfill site has been constructed and used for a few months in 2017 but was shut down due to political intervention as of November 2017. In addition, the city has taken timely and appropriate measures such as setting up the first large-scale waste-to-energy facility in Africa and a transfer station with a recycling facility, which will be a good model for other African metropolitan cities.

Information

Population	3,238,000 (2015 estimated)
Population growth (annual %)	2.1 (2000-2015)
Area (km ²)*	527
Climate*	Subtropical highland climate
Main industries	Food processing, beverages, textiles, leather, chemicals, metal processing, cement
Currency**	USD 1: ETB 28.55 (Ethiopian birr) (June 2019)
Other*	Addis Ababa is where the African Union is based and also hosts the headquarters of the United Nations Economic Commission for Africa (ECA). It is therefore often referred to as “the political capital of Africa” for its historical, diplomatic and political significance for the continent.

Sources: * Wikipedia, Addis Ababa, accessed 27 June 2019, <https://en.wikipedia.org/wiki/Addis_Ababa>

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Current SWM Situation

Item	Outline
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Institutional System

Legal system	<ul style="list-style-type: none"> ● Basically follows the federal legal system, but the city is implementing its own more detailed waste management ordinance. It also has an ordinance to control illegal activities on waste.
Policy/Plan	<ul style="list-style-type: none"> ● Establishes Addis Ababa solid waste policy to realise appropriate waste management and formulates the waste management plan every five years.
Implementation system	<ul style="list-style-type: none"> ● There are two organisations, the Cleansing Management Agency (CMA), and the Solid Waste Recycling and Disposal Project Office (SWRDPO) under the Mayor’s Office. The former is responsible for waste collection and road sweeping, the latter is responsible for recycling and final disposal. ● Under the CMA, 10 sub-cities and 116 woreda work together. Household waste is collected by organising micro and small enterprises (MSEs), and waste from large generators are collected by private enterprises licensed by the CMA.

Technical System

Waste generation amount & characteristics	<ul style="list-style-type: none"> ● Waste generation amount is approximately 1,400 tons/day, waste generation rate is 0.45 kg/person/day (however, values are estimates based on the number and volume of incoming collection vehicles to the disposal site). ● Organic waste 65%, recyclable waste 15%, other 20% (based on interviews with municipal officials).
Storage and discharge/ Collection and transportation/ Road sweeping	<ul style="list-style-type: none"> ● Approximately 50-litre capacity bags are distributed to ordinary households. ● Large waste generators are contracted with private collectors. ● Waste from households is collected and carried to a collection point (Skip Points) by MSEs. The city directly carries it to the disposal site from there. ● MSEs use push carts or small trucks. The city and private companies use cars specialised for bulk garbage transport such as compactors and container vehicles. ● Waste collection rate is 75% (based on interviews with municipal officials). ● The Rappi disposal site under service is located in the western part of the city and the new Sandafa sanitary landfill site (closed as of November 2017) is located in the Oromia state adjacent to Addis Ababa City. ● Main roads are kept clean by 20 road sweeping vehicles and 5,000 street sweepers (people).



Collection vehicles



Collection vehicles

Item	Outline
Intermediate treatment/ Recycling	<ul style="list-style-type: none"> ● Recyclable materials such as plastics are recovered by MSEs at the collection point and by the waste pickers at the Rappi disposal site. ● Two transfer stations with sorting facilities for resources are under construction. ● An incinerator with power generation of 1,400 tons/day was built adjacent to the Rappi disposal site (not yet operational as of November 2017). <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Rappi incinerator with power generation</p> </div> <div style="text-align: center;">  <p>Bole Transfer station (under construction)</p> </div> </div>
Final disposal	<ul style="list-style-type: none"> ● Currently Rappi disposal site is still in service. Heavy equipment is in operation, but it is basically an open dumping site. There is no measuring facility installed. ● Sandafa sanitary landfill site has been constructed, but is now closed, as of November 2017. ● In March 2017, a waste collapse accident occurred at the Rappi disposal site, killing more than 130 people. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Rappi disposal site</p> </div> <div style="text-align: center;">  <p>Sandafa sanitary landfill</p> </div> </div>
Financial system	<ul style="list-style-type: none"> ● Construction of transfer stations, disposal sites, incineration facilities, etc. is funded by direct investment by the Government or the city and with a donor loan. ● Collect waste collection fee from beneficiaries, but the city bears the deficit.
Environmental and social considerations	<ul style="list-style-type: none"> ● The city takes measures that take into consideration of the poor, such as organisation of MSEs and vocational training for the waste pickers. ● Sandafa sanitary landfill site is located in Oromia State, therefore, to use the site will require political intervention.
Donor support	<ul style="list-style-type: none"> ● The French Development Agency (AFD) supports construction of Sandafa landfill site and closure of Rappi disposal site by loan and grant aid. ● UN-Habitat is proposing an improvement plan by the Fukuoka method at Rappi disposal site.
Areas for improvement (in order of priority)	<ul style="list-style-type: none"> ● The city began working on recycling, composting, etc., and the operation of waste-to-energy (WtE) is about to begin. Therefore, learning about waste management in Japan would help to improve capacity in these areas to deal with issues and challenges that can be expected to emerge as they operate these facilities in the future.

Waste Amount at Each Stage of Waste Flow*

Waste flow	Amount ** (ton/day)	Remarks
① Waste generation	1,400	Waste generated at houses, offices, shops, restaurants, etc.
② Discharge to collection	N/A	Waste discharged for collection services.
③ Self disposal	N/A	Disposal at generation sources, such as burning and burying.
④ Recycling at source	N/A	Reuse of materials, composting, sold to recyclers.
⑤ Collection and transport	N/A	Waste amount collected and transported.
⑥ Clandestine dumping	N/A	Waste illegally disposed of in unknown location.
⑦ Treatment	N/A	Material recycling, composting, incineration, etc.
⑧ Recycling/Reduction	N/A	Recycled and/or reduced waste amount by material recycling, composting, incineration, etc.
⑨ Residue	N/A	Residue from treatment facilities.
⑩ Final disposal site	N/A	Waste amount brought into disposal sites.
⑪ Recycling	N/A	Recycled at disposal sites.
⑫ Final disposal	N/A	Waste amount finally disposed of at disposal sites.

* Based on the waste flow chart on page.

** Figures include estimated value.

Location of Waste Management Facility and Related Photographs:



Final Disposal Site