



TRAIDE



Factsheet: Waste economy in Ethiopia

October 2023

INTRODUCTION

As one of Africa's fastest-growing economies and with a rapidly expanding population, Ethiopia is experiencing a significant increase in waste production. The current waste management system requires enhancement to effectively handle the increasing volume of solid waste produced in the country. This presents promising business opportunities which, in turn, will benefit Ethiopia's society, environment and economy. Opportunities include the utilisation of different waste streams as inputs for new products, e.g. composting, recycling and refurbishing, and pursuing circularity of materials. Capacity building, technical assistance, education and the use of innovative technologies (e.g. AI) and financial instruments (e.g. carbon credits) are also promising business ventures.

POTENTIAL FOR IMPACT



FACTS & FIGURES



	Municipal solid waste (MSW)	Agricultural waste	Healthcare waste	Industrial waste
TYPE OF WASTE	Organic waste, paper and cardboard, plastics, glass and metals	As crop residues, animal manure and pesticide containers	Hazardous and non-hazardous waste, such as needles, syringes and medical equipment	Hazardous and non-hazardous waste, such as chemicals, metals, construction debris and electronic waste
AMOUNT / TENDENCY	6 million tons/year (2015) 10 million tons/year (est. for 2030) ²	~60 million tons crop residues yearly ³	Increasing amount. There is a lack of proper management practices ⁴	Increasing volume as the industrial sector is increasing (no precise data is currently available)

¹ Solid waste management and recycling in Ethiopia, 2022

² Ethiopia's Third National Communication to the United Nations Framework Convention on Climate Change, 2022

³ A. Tolessa, *Bioenergy potential from crop residue biomass resources in Ethiopia*, 2023

⁴ B. Wassie et al., *Healthcare Waste Management Practices and Associated Factors in Private Clinics in Addis Ababa, Ethiopia*, 2022

How much waste do cities generate?

ADDIS ABABA

In 2022, Addis Ababa generated approximately **819,452 tons** of waste, 76% of which was MSW (and 60% was organic waste). Residential areas, including households and small businesses, are the primary contributors of MSW in the city.

HAWASSA

Annually, the city is estimated to produce **71,175 tons** of waste, with households accounting for 35% of MSW generation. Plastics account for 6% of waste generation.



BAHIR DAR

Mainly generates organic waste. Potential to produce about 38,250 tons of compost per year; however, the current average production rate is 48 tons per year.

DEBRE BERHAN

The city generates **12,775 tons** of general waste annually, but only 48% is collected by SMEs.

The role of SMEs in collecting waste in cities

In Ethiopia, waste is usually collected from households, with institutional solid waste collection or and street waste collection.

Different SMEs engage in several steps of waste management: they collect waste, sell reusable and recyclable items to larger enterprises, recycle waste themselves, and produce compost out of organic waste.

SMEs play a crucial role, but there is significant potential for increased professionalisation.

SMEs are actively involved in waste collection and recycling especially in cities such as Addis Ababa, Hawassa, Adama, Bahir Dar, Jimma, Debre Berhan. These cities, in total, count more than 700 SMEs involved in the waste economy.

Some cities have set-up transfer stations: intermediate locations where solid waste is stored until it is transported to processing and final disposal sites.

However, most of the waste is disposed of through uncontrolled landfill, and only a small amount is processed through unsafe and informal recycling.



POLICY CONTEXT

In recent years, the Government of Ethiopia (GoE) has shown a willingness to develop a sustainable waste management system through several proclamations. However, regulations are not properly enforced, and government agencies do not coordinate their work, that results in conflicting policies or policy gaps, which often hinder the development of initiatives to improve the Ethiopian waste management system. The main proclamations are:

- § [Waste Management Proclamation No. 1021/2017](#), which established the legal framework for waste management and the measures for environmental protection and public health.
- § [Food and Medicine Administration Proclamation No. 1112/2019](#), which established measures for the safe handling and disposal of hazardous waste.
- § [Solid Waste Management Proclamation No. 513/2007](#), which requires the government to ensure proper collection, transportation, treatment and disposal of solid waste.
- § [Hazardous Waste Management Proclamation No. 1013/2016](#), which requires the government to establish a national hazardous waste management plan and to regulate the handling, transportation and disposal of hazardous waste.

CHALLENGES, RISKS AND SOLUTIONS

CHALLENGES AND RISKS



Limited public awareness



Low recycling rates, because of limited recycling infrastructure, a lack of waste segregation at source, and a lack of incentives for recycling



Limited resources and capacity for proper waste management



Inadequate infrastructure: landfill sites and recycling facilities are few in number and often poorly designed and managed, leading to risks of pollutants leaking into the soil or risks of resource depletion through the use of energy and water to dispose of waste



Underdeveloped market for recycled materials



Environmental pollution, public health risk, substantial healthcare costs of treating diseases caused by exposure to waste



Limited enforcement of waste management regulations, limited capacity for regulation and monitoring, lack of coordination between different government agencies and stakeholders



Conflicts with other policies/frameworks: this can lead to policy gaps and conflicts that hinder effective waste management



High informality of waste management activities, with health and safety risks for workers



Limited private sector involvement: limited development of the waste economy and its potential for job creation and revenue generation

SOLUTIONS

- Promote public awareness and education on waste reduction and recycling
- Pilot PPP approaches to effective waste separation and recycling
- Private and academia-lead research and introduction of AI-powered waste management systems for waste collection, separation or treatment.
- Public and/or private investment in waste-to-energy technologies, such as incineration and anaerobic digestion, which can generate electricity and heat from waste, reducing the reliance on fossil fuels and contributing to climate change mitigation
- Introduction of taxes on landfills and incineration to incentivise waste reduction and promote the development of alternative waste management technologies
- Establish PPPs that promote collaboration, expertise and resources sharing, and leverage public and private sector strengths

FORESEEABLE BUSINESS OPPORTUNITIES

The waste sector in Ethiopia offers several business opportunities, with some especially suitable for development by PPPs. Recycling and production are of special interest in terms of import substitution, a category of operations that is encouraged by the GoE with practical (e.g. fiscal, financial) benefits and incentives.

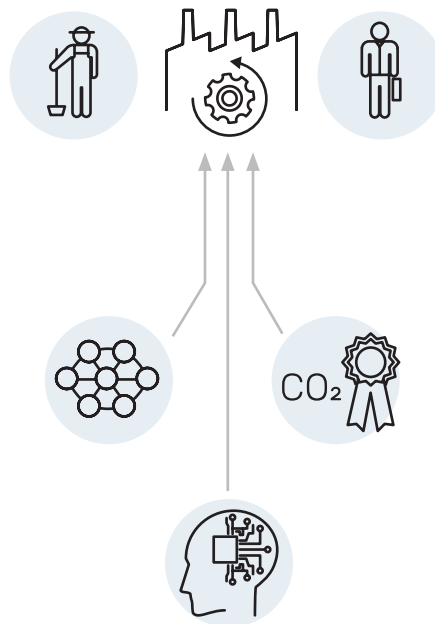


CAPACITY BUILDING AND TECHNICAL ASSISTANCE to SMEs engaged in compost production, to ensure that they have the necessary skills and knowledge to operate effectively and efficiently.

DECENTRALISED WASTE MANAGEMENT INFRASTRUCTURE/TECHNOLOGY, possibly in collaboration with local governments. Currently, much of the value added in waste processing is done in the capital, Addis Ababa, due to the lack of access to essential machinery in other cities. Decentralising waste management infrastructure/technology would encourage the development of circular economy models across the country.

AI OR TECHNOLOGIES

for the collection and/or sorting of solid waste. Inefficient waste management and sorting systems lead to an increase in waste disposal costs, negatively impact the environment, and undermine efforts toward sustainable waste management. Artificial intelligence applications can be developed for the specific needs of communities, cities or parties involved in waste management in Ethiopia.



EDUCATION PROGRAMMES on proper waste sorting and management. Relevant parties, such as waste management authorities, recycling companies or development organizations can invest in education programmes to improve waste management. Target audiences may include SMEs collecting waste, communities or technicians of waste incinerators. Targeting for instance waste collection.

CARBON CREDITS: By quantifying greenhouse gas offsets and selling them on the voluntary market, SMEs could create a revenue stream from carbon credits to fund their operations and reinvest in their businesses. This could help to overcome the barriers that many SMEs face in accessing capital and scaling up their operations. Additionally, SMEs could provide their employees with a living wage, and the voluntary carbon market could help to promote sustainable waste management practices and technologies by creating financial incentives for SMEs to adopt such practices.

¹ Solid waste management and recycling in Ethiopia, 2022

² Ibidem

ARE YOU INTERESTED IN THE ETHIOPIAN WASTE ECONOMY AND WOULD YOU LIKE MORE INFORMATION?
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