

# Insights on comparative analyses of solid waste management regulations in Africa

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## Abstract

Globally, the International Solid Waste Association (ISWA) reports that 70% of municipal waste is discarded in landfills, 11% is utilized for energy conversion, and 19% is recycled (Nieuwoudt, Jacques Jean, 2022).

Demographic growth and urbanization across Africa are significant driving forces in the increment in waste generation, creating challenges for institutions to manage it effectively. In low- and middle-income countries, societal development integrates both formal and informal waste management systems, with the informal sector often addressing uncertainties that arise in the absence of well-established rules, procedures or administrative applications (da Silva et al., 2019).

Solid waste management (SWM) presents critical challenges as well as opportunities for sustainable development in sub-Saharan Africa. Differences in economic, political, socio-cultural contexts, consumer behavior, and policy implementation and effectiveness add complexity to addressing waste management issues across the region (Dame et al., 2022) (Adusei-Gyamfi et al., 2022). South Africa's national, provincial and local spheres govern the management of solid waste, and The National Department of Environmental Affairs is the custodian for the environmental legislative framework. Similarly, countries like Nigeria, Ethiopia (Debrah et al, 2022), and Madagascar share similarities in certain challenges while differing in their level of progress and strategic priorities.

This study aims to investigate these dynamics through a systematic literature review of solid waste management (SWM) laws and policies over the past decade (2014–2024), to examine the enforcement, compliance, alignment with national laws and policies and adherence to international standards. The review draws on international agreements and frameworks such as the UN Sustainable Development Goals (SDGs), the African Union's Agenda 2063, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, all of which have significantly influenced SWM practices worldwide. Using the SPAR-4-SLR framework (Paul J., 2021), our goal is to systematically analyze peer-reviewed articles and policy documents on the presented countries to identify the gaps, challenges, and opportunities in the SWM legislation across the selected countries.

Key insights highlight common issues across South Africa, Nigeria, Ethiopia, and Madagascar. According to the African Clean Cities Platform (ACCP) 2019 Data Book, Nigeria has made progress in establishing SWM laws, however, suffers from weak implementation and limited stakeholder coordination. Ethiopia has a basic legislative framework but lacks robust compliance. Madagascar struggles with ambiguous ministerial roles and underdeveloped sectoral strategies. (African Clean Cities Platform Secretariat, 2019) In South Africa, despite a well-established legal framework, enforcement mechanisms remain a critical weak point, underscoring the need for strengthened compliance and accountability measures. (Alberts, 2014) Ethiopia while having a legislation on recycling, struggles with cascading it from the governmental institution to the private sector to households. (Yimenu, Getachew, 2023)

This study aims to contribute to academic discourse and policymaking by presenting a comprehensive review of SWM legislation in South Africa and sub-Saharan Africa. We want also to target practical strategies to improve legislative and operational efficiency in addressing the waste crisis.

Given that circular economy, which is recognized in legislation, it is often poorly implemented in the Global South (da Silva et al., 2019), the study considers the possibility of a shift from traditional waste disposal methods toward resource recovery and sustainability-driven practices to benefit from the recycling of 64-76% of waste generated (Adusei-Gyamfi, 2022) (Ahmed et al. 2022).



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