



**Integration of Solid Waste Management Policies in Kenya:
Analysis of coherence, gaps and overlaps**

Working Paper #8

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April 2016



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Integration of Solid Waste Management Policies in Kenya:

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Abstract

Introduction: There are different types and levels of policies addressing solid waste management in Kenya. These include sector-specific, general, stand-alone and embedded solid waste management policies. The alignment, overlaps, and gaps among these policies has not yet been systematically investigated.

Objectives: To examine the integration among the current solid waste management in Kenya, particularly as they addressed associated health challenges among vulnerable populations in urban areas of Nairobi and Mombasa

Methods: This study was a critical interpretive synthesis of the contents of the existing policies on solid waste management in Kenya, Nairobi and Mombasa. Selected policy documents were reviewed for pre-determined areas of integration in general and how they addressed health in particular. Information from the reviewed policy documents was re-abstracted using a matrix. The resulting information was synthesized using interpretive synthesis.

Results: This analysis looked in to horizontal, vertical, and diagonal dimensions of policy integration as well as internal (within policy domain) and external integration (with other related policies). While general solid waste management policies are broad and looks more integrating than specific ones, the institutional and implementation mechanism proposed by these policies are more centralized. The sector-specific and embedded solid waste management policies are coherent with the overall theme of the policy document they are in, but they lack mechanisms of implementation within the same policy framework. Major gaps exist in stipulating clear policy strategies and implementation mechanisms.

Conclusion: Existing solid waste management policies clearly state the policy directions in terms of the required outcomes. But explicit articulation of policy strategies and implementation mechanisms is insufficient.

Keywords: *Policy integration; solid waste management; Kenya*

INTRODUCTION

With the urban population in Kenya estimated to be growing at a rate higher than that of the country's general population growth rate, waste generation shall be a major challenge. The industrialization and urbanization process in the country dominated by one primate city (Nairobi) that is about four times bigger than the next largest urban Centre (Mombasa) has witnessed an exponential increase in the generation of solid waste. In terms of population, the country's urban population in 1999 was 5.4 million, while by 2009 this population had grown to 12.5 million, with 3,233,788 and 870,381 residing in Nairobi and Mombasa respectively. This translates to 299,439 households in Mombasa and 1,128,693 households for Nairobi (1). It is projected that by the year 2030, about 50 per cent of the Kenyan population will be urban residents (2).

Waste generation has been increasing linearly in Kenya and, due to the rapid urbanization the current amount (about 4 million tones/year) generated is expected to double by 2030. However, the rise in waste generation has not been accompanied by an equivalent increase in the capacity of the relevant urban authorities to deal with this challenge of Solid Waste Management (SWM) (3). The preferred option seems to be normally collect and hope that the authorities will make it disappear. This situation in Kenya, according United Nations Environment Program (UNEP), is prototype of an economically developing nation which tend to pay inadequate attention to solid waste management contrary to recent thinking on solid waste which views it as an asset that is generated in the urban areas, which should not be wasted as such through biogas, recycling, reusing, etc., all with possible revenue coming back to the communities (4). In the main urban center, Nairobi, the Solid Waste that is managed well is much lower than the generated. The wide gap between the generation and collection means that unsafe disposal is rampant. About half (1500 tones/day) are not being collected.

In response to the consistently increasing challenge of solid waste management, there were several policy frameworks formulated and enacted to address it. Solid waste management and its effects cuts across various sectors and stakeholders. Therefore, to effectively address the challenge of solid waste management, policy integration among and within the various sectors and stakeholders is essential. Policy integration concerns the management of cross-cutting issues in policy-making that transcend the boundaries of established policy fields, and which do not correspond to the institutional

responsibilities of individual departments. It also refers to the management of policy responsibility within a single organization or sector. Integrated policy-making refers to both horizontal sectoral integration (between different departments and/or professions in public authorities) and vertical inter-governmental integration in policy-making (between different tiers of government), or combinations of both (5).

So, while the main problem is insufficient action, what is the need for review of policy integration? It is because evidence about the integration of solid waste management policies would inform enhanced implementation of existing policies and the formulation of well synchronized future policies. In light of these, the aim of this study was to examine the of integration within and among Solid Waste Management policy frameworks in Kenya, particularly as they addressed associated health challenges among vulnerable populations in urban areas of Nairobi and Mombasa. More specifically, this study had explored the coherence & contradictions among SWM policies; and examined gaps and overlaps among key SWM policies. Moreover, this study had identified strategies that would improve synergy and maximize efficiency in the implementation of SWM policies in Kenya.

METHODS

Data Sources and scope of the study

Review of relevant policy frameworks on SWM in Kenya and its two major cities (Nairobi and Mombasa) was undertaken in order to have a broad understanding on key issues related to solid waste management policy architecture. The review addressed and captured information relating to the substantive areas relevant to policy integration. It has focused on broad areas such as cooperation, coordination and integrated policy-making.

This review has identified the following six categories sources of solid waste management policies.

- 1) Generic policies that provide broad provisions (e.g. Constitution of Kenya)
- 2) Integrated policies that address many environmental issues (e.g. Environmental Management and Coordination act, A, Environmental Policy)
- 3) Sector-specific Acts (e.g. Public Health Act, Factories Act)
- 4) Issue-specific regulations (e.g. Water quality regulations, Waste management regulation)
- 5) Solid Waste Management (stand-alone) policies (e.g. National SWM Strategy)

6) External policies (global and regional policies) endorsed by the country.

Definition of concepts

Coherence	Consistency of policy process and content among various sectors of a government or within a specific sector of a government.
Contradiction	Disagreements/conflicts among different policy contents and/or their implementation within a sector or among sectors.
Gaps	Substantive areas of solid waste management expected to be addressed by policy frameworks but not adequately addressed within the existing policy architecture.
Overlaps	Substantive policy issues of solid waste management addressed by two or more policy frameworks. This may be necessary (affirmation) or unnecessary (duplication).
Integration	The alignment between the provisions of various solid waste management policy contents and their implementation.

Data abstraction

Information from the selected policy documents was abstracted using pre-defined themes. The list of these themes and their description is shown in the following table.

Table 1: Abstraction themes and their descriptions

Abstraction theme	Description
Policy domain	The broader policy domain within which the respective policy content belongs (e.g. environment, health, urban development, climate etc).
Policy type	Whether the policy is a code, an Act, a regulation, a strategy, a plan, a bill etc.
Institutional mechanism	The major institutional mechanism leading the formulation of the policy and/or the implementation of it.
Focus of the policy	The aspect/component of solid waste management addressed by the policy framework
Policy substance	The policy content/text in the policy framework addressing solid waste management

Data analysis and synthesis

This study employed a critical *interpretive* synthesis of the contents of the current SWM policies in Kenya, Nairobi and Mombasa. Selected policy documents were reviewed for pre-determined areas of integration generally and how they addressed health outcomes in particular. Nine types of integration were used in the analysis including Internal integration (within a policy framework), external integration (integration with other policies), horizontal integration (among sector-specific policies), vertical integration (among levels of policies), and diagonal integration (between sector-specific and compressive policies). Findings were summarized using narrative summaries and tables.

FINDINGS AND DISCUSSION

Macro-level (strategic) integration

At National level, the various SWM policy documents addressed different but thematically inter-related aspects of SWM. While the Penal Code makes it an *offence* to vitiate the environment, the Public Health Act focuses on prevention of *nuisance* that could affect health (6, 7). The Constitution of Kenya grants *rights* to protected environment along with the associated *obligations* to protect it (8). On the other hand, the Local Government Act and its successor the County Government Act have vested *powers* to local authorities to establish the necessary systems and procedures that are necessary to deal with SWM at local level (9, 10). In this regard, the four key policy documents are well synchronized as they address the inter-related aspects of SWM at national levels. This shows that integration at nation level is ensured in two ways: 1) complementarity (one policy framework complementing the other); and 2) Reinforcement (one policy framework reinforcing the execution of the other).

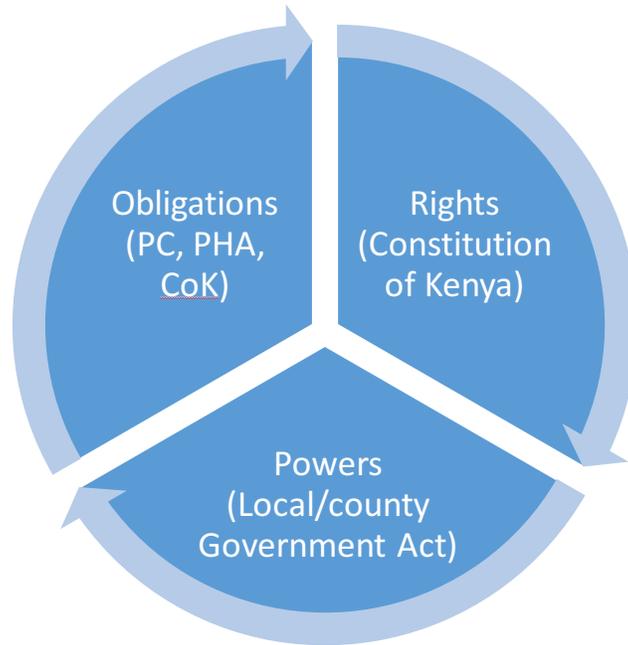


Figure 1. Macro (national) level integration of SWM policies

The Environmental Management and Coordination Act (EMCA), which was introduced in the presence of many of the sector-specific environmental provisions, was a more generic framework designed to facilitate a coordinated response to environmental management (11). Though it had the potential to integrate the fragmented sector-specific provisions, it was not aimed to supersede them. But rather it was meant to *reinforce* them in to a better management model of the environment. Therefore, a clear overlap between EMCA and sector-specific policies, with no indication of policy hierarchy, was existing in the 2000s.

In line with the Constitution of Kenya, the National Environment Policy outlines *responsibilities* of the government – what the government will do in relation to creating a favorable ground for protecting the environment (12). The National Solid Waste Management strategy, which addresses only one core area of the National environment policy, aimed to establish a *platform* for action between stakeholders to systematically improve SWM (13). The integration between the Environment Policy and the Solid Waste Management Strategy is a vertical one – the policy outlined the core issues and the strategy formulated it in to courses of action. Though the national SWM strategy is national in its scope, it focused on flagship SWM projects in five main cities in Kenya. Besides, the strategy is more linked to the repealed EMCA and its regulations than to the National Environmental policy. This may be linked to the parallel timelines of the development of these two policy frameworks. Therefore the dimensions of integration

among these were temporal (one repealed when the other is enacted), functional (addressing different but related functions) and hierarchical (one superseding/guiding the other).

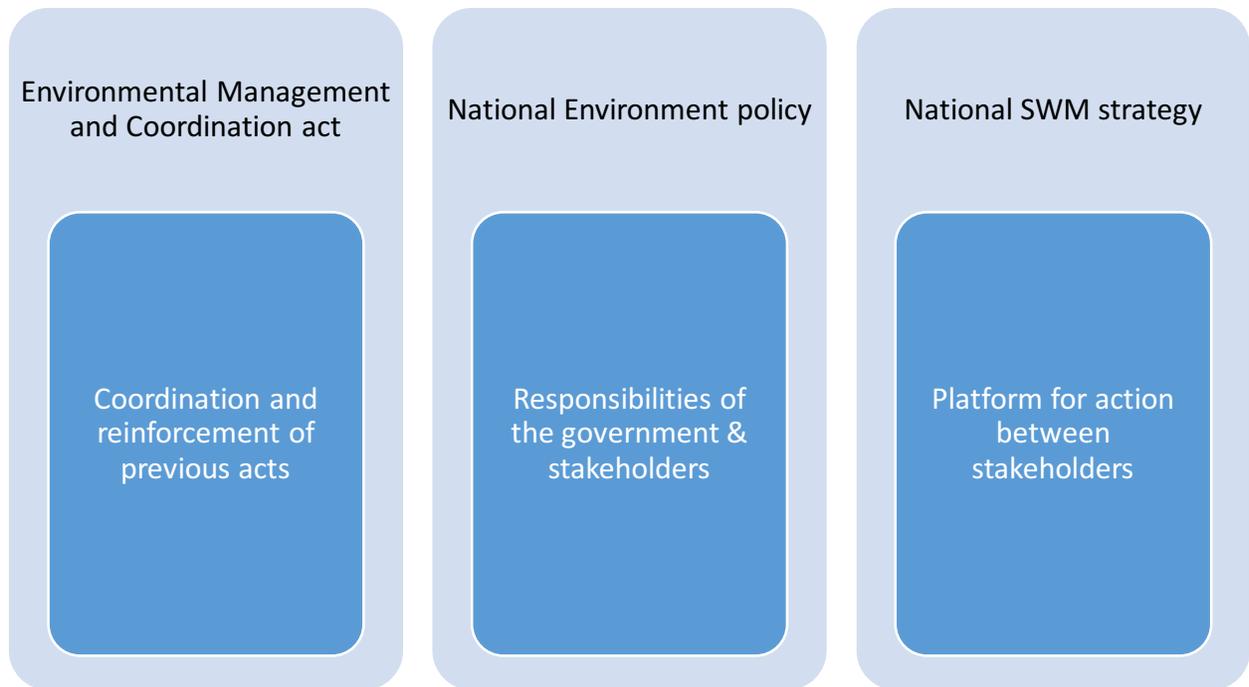


Figure 2. Integration among key SWM policy frameworks in Kenya

Meso-level (Sectoral) Integration

This form of integration is the harmonization among the sector specific Acts addressing issues related to SWM. The Factories Act, whose main focus is on *First Aid* rules in the factories to manage any health emergency at the scene, has provisions that require managers of *factories* to keep the environment clean and dispose any waste accordingly. The radiation protection act, which prohibits manufacturing, possessing, selling, disposing, importing and exporting any irradiating device or radioactive material that may have impacts on health, is entirely about dealing with *radiation safety* requirements. The building code details the handling of *construction and demolition* waste. The Food, Drug and Chemical Substances Act makes it an offence to use or dispose of any *chemical substance* in a manner likely to cause contamination of food or water for human consumption or in a manner liable to be injurious or dangerous to health. Physical Planning act makes provision for development control and as such provided for *waste disposal* at designated sites only. Occupational Safety and Health Act deals with Chemical Safety and the securing of dangerous parts of machinery. Birth and Death Registration Act prohibits burying, cremating or otherwise disposing of *body* of deceased person

without a permit. With a few overlaps among them, these sectoral-level policies address different SWM in a sector or a SWM issues across sectors.

Promoting health is the most pronounced integrating factor among four of the seven sectoral acts: The Factories Act; The Radiation Act; The Food, drug and chemical substances Act; and Occupational Safety and Health Act. For the remaining three sectoral Acts – the physical planning act, building code and birth and death registration act – the central focus is protecting the environment from debris and refuse and disposing them in the designated sites. Horizontal integration of sector-specific acts seems to follow a pattern of integration by departmentation.

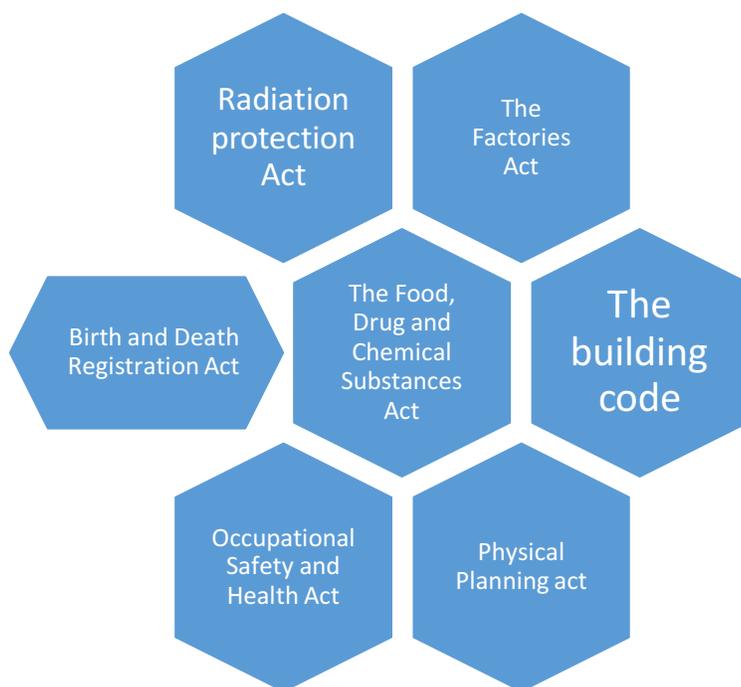


Figure 3. Meso (sectoral) integration of SWM policies in Kenya

Thematic level (Technical) integration

Following the endorsement of EMCA, several theme specific *regulations* were developed and enacted. Among these regulations were *water quality* regulation and *air quality* regulations that were developed to prevent water and air pollution, respectively (14, 15). The third regulation deals with prevention of *noise and excessive vibration* pollution (16). Along with these were also regulations that address the disposal of *municipal* (household) wastes, *controlled* substances, and *hazardous* substances (17, 18). The Environmental Impact assessment regulation establishes rules and procedures for licensing, conducting and reporting environmental *impact assessment*. Key aspects of EMCA, were addressed in these regulations. Although each of these has a component relevant to SWM, they

addressed thematically dissimilar issues that fit in to the broader area of environmental management.

These regulations, all emerged from EMCA, have protection of the environment as their most explicit driver of integration. The core objective was to protect the environment from pollution by different types of wastes and provide regulations for the proper disposal of these substances/wastes. Promotion of health and prevention of disease didn't receive direct attention in these regulations. In addition, the regulations haven't addressed several other types of wastes including *industrial* and *medical* (health-care) wastes though these were mentioned in water and air quality regulations. In overall, the balance between segmentation and integration of SWM issues is blurred. However, the pattern shows that horizontal integration at thematic level is by specification of the regulations in to priority problems in the environmental management area.

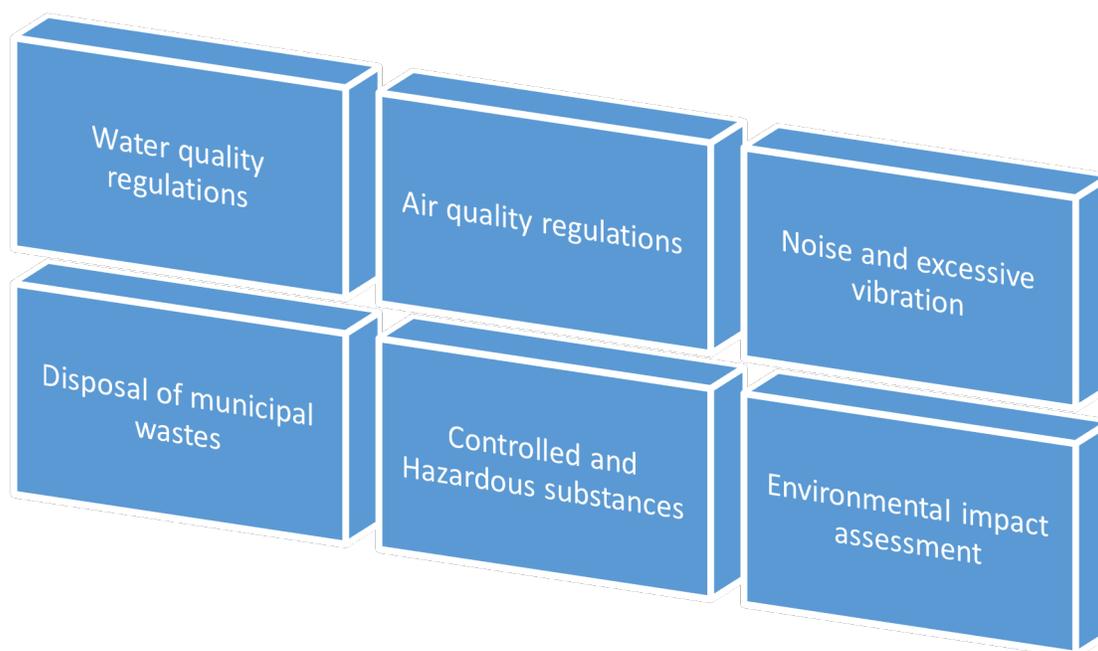


Figure 4: Thematic (Technical level integration)

Institutional level (Organizational) integration

The sector-wide SWM policies were formulated and adopted by various sectors at national level. Though the coherence among these policies might have been ensured through the various policy processes leading to their refinement and final endorsement, there was no evidence of a national coordinating mechanism for their integrated implementation for years. However, at local governments, SWM roles converge and the need for a coordinating mechanism looks better addressed.

Integration within integrated policies (internal integration)

Two types of SWM integrated policies emerged in this review. The first type was *sector-wide* policy frameworks that also address the problem of solid waste management and the mitigation of its impacts. Health and environmental policies are the key examples among several others. The second type was environment-focused policies that address SWM among the proper management of other types of wastes (e.g. liquid wastes and human excreta wastes). While SWM is implied in health and environmental policies of Kenya, it emerged as an issue on its own (rather than a component along with the management of other types of wastes) after the EMCA.

Integration among different levels of SWM policies (vertical integration)

There are policies, strategies, acts and plans relevant to SWM at national level. There are also by-laws, bills, and plans addressing SWM at county levels. Some institutions could also have their own SWM policies, strategies and plans. The analysis of the harmony among these pieces of SWM policy frameworks revealed the lack of a coordinated approach to SWM policy making process. The timelines of the formulation and adoption of these policy frameworks at different levels don't concur. Even, the development of some of the policy frameworks was driven by external bodies. On the other hand, there is no evidence documented about the impacts of the previous policies when they were replaced by new ones. Integration along evolution and devolution lines is also found to be weak.

Integration between sector-specific and integrated policies (diagonal integration)

The integrated SWM policies were meant to coordinate the cross-cutting SWM issues across various sectors. As these also included sector-specific issues in order to provide guidance for specific sectors, this would be an area of alignment between sector-specific and integrated SWM policies. While management is expected at sector-level, technical leadership in SWM policies is expected from integrated policies. If the sector-specific and integrated SWM policies are well aligned, then SWM at sector level would be smooth. Sectors and Environmental coordination agencies need to work collaboratively towards this end. In the SWM policy evolution in Kenya, the overall focus has shifted both towards and away from integrated policies at many points in time and real coherence between the two needs attention in the future policy analysis and policy making efforts.

Integration of SWM policies with other Key policies (external integration)

It is evident that SWM can affect and can be affected by other related policies including manufacturing, urban development, infrastructure and financial policies. In this review, we

found out that some key policy frameworks gave greater emphasis to SWM. The two key examples are the *building code* and the *physical planning act* that addressed SWM in a substantive manner. However, SWM is not mainstreamed to many other policy frameworks. Similarly, the development of SWM policies, strategies, and plans have taken in to account key local contexts that would affect the implementation of these policies. Despite these, the current SWM policies are loosely linked to other relevant policies in the country.

As reported elsewhere, the contents and evolution of SWM policies of Kenya reflect the influence of key global and regional environmental policies. Accordingly, the priorities of current SWM policies of Kenya have a base on key regional and global priorities. However, low socio-economic status in urban slum areas along with high rural to urban migration is the main challenge for national and local SWM policies.

Integration between policies and implementation (translational integration)

This policy review has revealed that there are good SWM policy provisions that are in place in Kenya. However, the problem of poor solid waste management is still a major challenge and is expected to expand its scale with the rapid urbanization in the country. Preliminary observations regarding the causes of this policy-practice gap includes the following:

- 1) The fact that SWM policies and their implementation mechanisms didn't fully consider the ever changing dynamics of solid waste management realities and are not substantiated with evidence of what works and what doesn't work..
- 2) Policy making processes highly driven by government in a top-down approach with limited participation and ownership by the public and private sectors.
- 3) Insufficient institutional capacity and resources to streamline and enforce the implementation of recommended solid waste management procedures and practices.
- 4) Weak political commitment, the effects of 'informal businesses' from solid waste management, and corruption.
- 5) The deep-rooted attitude of considering solid waste as a problem than a resource that could be recycled and used; and lack of infrastructure to recycle solid wastes.

CONCLUSIONS AND RECOMMENDATIONS

Analysis of integration of SWM policies in Kenya has revealed that extent of integration differs across different axis of policy development, involvement and devolvement. At macro-level, integration of policy contents looks better but coordination mechanism for implementation is not clear. At Meso-level, the balance between segmentation, integration and devolvement is contentious. It is clear that this would result in contradictions in implementations of SWM policies.

The roles of specific and integrated SWM policies are not well differentiated. We anticipated that specific policies will focus on management issues while integrated policies focus on technical leadership in policy making, implementation and evaluation. However, this analysis has shown that there is a significant overlap between these two forms of SWM policies in Kenya.

Along with the acknowledgement and reaffirmation of other policies, SWM policies in Kenya are better aligned with regional and global policies relevant to environment and health. Based on the findings of the review, we recommend the follows:

- 1) A clear coordination mechanism of policy making, implementation and evaluation is needed. This mechanism can ensure alignment among the different provisions and synergy in their implementation.
- 2) Enhancing institutional capacity (infrastructural, financial and human resources) of key actors in the government sector is needed for successful implementation of the policies
- 3) The citation and referencing styles of policy frameworks need to be improved so that analysis of influence of global and regional policies on the national ones can be less challenging.
- 4) Further research is needed to disentangle the bottlenecks and their detailed attributes that affect the implementation of SWM policies in Kenya

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