



GOVERNMENT OF MAKUENI COUNTY



Republic of Kenya

Makueni Countywide Inclusive Sanitation



Situation Analysis



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Abbreviations

CECM	County Executive Committee Member
CLTS	Community Led total sanitation
CIDP	County Integrated Development Plan
DHIS	District Health Information System
DTF	Decentralized Treatment Facility
ECDC	Early Childhood Education Centers
GPD	Gross Domestic Product
HCW	Health care waste
JMP	Joint Monitoring and Evaluation Programme
KDHS	Kenya Demographic and Health Survey
KeNHA	Kenya National Highway Authority
KfW	German Development Bank
KIWASH	Kenya Integrated Water Sanitation and Hygiene Program
KNBS	Kenya National Bureau of Statistics
MDG	Millennium Development Goals
MHM	Menstrual Hygiene Management
MoH	Ministry of Health
OD	Open Defecation
ODF	Open Defecation Free
PHO	Public Health Officer
SATO	Safe Toilet
SDG	Sustainable Development Goal
TA	Technical Assistance
UHC	Universal Health Care
ULTS	Urban Led Total Sanitation
WB	World Bank
WSP	Water Service Providers
WV	World Vision

1.0 BACKGROUND

1.1 Introduction

Sanitation is a public good with environmental, public health and economic benefits accruing well beyond the individual and household boundary. Sanitation is one of the necessities of life, which contributes to human dignity, better living environment, economic productivity, safety and quality of life. It is an essential pre-requisite for success in the fight against poverty, disease, gender inequality and foul or poor environmental conditions. In recognition of this, Kenya has broadly evolved a strong policy environment for advancement of equitable water and sanitation agenda in the country. Kenya has ratified several international conventions, treaties and declarations under which the human right to safe drinking water and sanitation is guaranteed.¹ Kenya is also among the developing countries that have consistently participated in, and made commitments at the Sanitation and Water for All (SWA) High Level Meetings (HLM). Kenya is in particular committed to the Sustainable Development Goal 6 that aims to ensure equitable access to water and sanitation for all by 2030. Kenya is also committed to the Ngor Declaration that enjoins the state parties to establish specific public sector budget allocations for sanitation and hygiene programmes with a target allocation of a minimum of 0.5 percent of GDP. Fundamentally, the Constitution of Kenya 2010 under the Bill of Rights guarantees the right of every person to dignity, a clean and healthy environment, the highest attainable standard of health, accessible and adequate housing and reasonable standards of sanitation, food of acceptable quality and clean and safe water in adequate quantities.

Against this backdrop, the World Bank Group's Water Global Practice, through financing from the Global Water Security and Sanitation (GWSP) and the Kenya Accountable Devolution Program (KADP) Multi-Donor Trust Funds is providing technical assistance (TA) to the Government of Kenya to address sanitation challenges. The overall objective is to provide technical assistance for the implementation of Kenya's national sanitation program through the application of best practices and innovative approaches, as well as knowledge sharing activities to raise awareness and create demand for sanitation solutions. The national sanitation initiative focuses on improving Sustainable Development Goals (SDG) sanitation indicators, particularly by eliminating open defecation practices and improving sanitation conditions in rural communities and urban settlements.

The TA aims to promote **Countywide Inclusive Sanitation (COWIS)** by incorporating *Citywide Inclusive Sanitation (CWIS)* and Community Led Total Sanitation (CLTS) approaches into GoK's national sanitation program. This entails applying various sanitation approaches and tools in selected counties in order to develop an action plan with potential rural and urban interventions that can be implemented to achieve Countywide sanitation coverage, and that could be used as an example for other counties nationally. Makueni County has been selected for replication of the evolving County wide inclusive sanitation approach that has been first piloted in Nakuru County since February 2018.

1.2 Countywide Inclusive Sanitation in Kenya: The Approach

The concept of Countywide Inclusive Sanitation (COWIS) builds on the principles of Citywide Inclusive Sanitation (CWIS) initiated by the World Bank and a group of partners including the Bill & Melinda Gates Foundation, Emory University, Plan International, the University of Leeds and Water Aid in their Call to Action (see Annex 1). Citywide Inclusive Sanitation means that: (a) everybody benefits from adequate sanitation service delivery outcomes; (b) human waste is safely managed along the whole sanitation service chain; (c) effective resource recovery and re-use are considered; (d) a diversity of technical

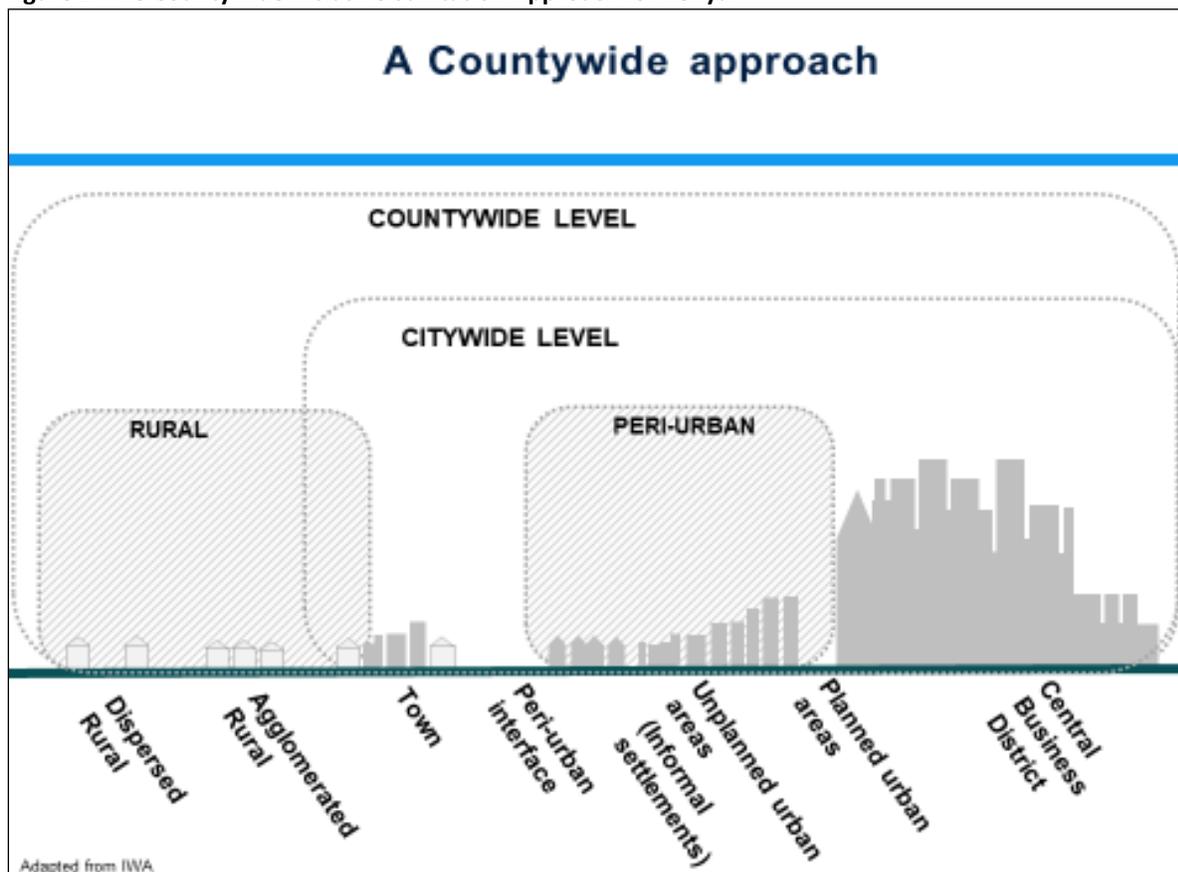
¹ These include the International Covenant on Economic, Social and Cultural Right (ICESCR), the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), and the Convention on the Rights of the Child (CRC).

solutions is embraced for adaptive, mixed and incremental approaches; and (e) onsite and sewerage solutions are combined, in either centralized or decentralized systems, to better respond to the realities found in developing country cities.²

The key principles of COWIS include collaboration between many actors, including: national, sub-national and city/municipal governments; utilities and municipal service providers; business and the private sector; civil society, local and international NGOs; donors, bilateral and multilateral agencies and private foundations; as well as academia and, importantly, households themselves.

The Countywide Inclusive Sanitation approach entails a comprehensive approach to sanitation planning and financing based on an inclusive and shared vision for sanitation including: complementary services such as water supply, drainage and storm water, onsite and offsite sanitation services and protection of water sources targeting different segments of the population in dispersed and agglomerated rural areas, small towns, peri-urban interface, unplanned/informal urban settlements, planned urban areas and central business districts. Figure 1 below shows the different levels of implementation considered in a “Countywide Inclusive Sanitation Approach” for Kenya.

Figure 1: The Countywide Inclusive Sanitation Approach for Kenya.



"Source: World Bank (adapted from International Water Association (IWA))"

Countywide Inclusive Sanitation Strategic Planning

The concept of Countywide Inclusive Sanitation has been applied in Nakuru County, which was selected in collaboration with the Ministry of Health (MoH) and Ministry of Water and Sanitation (MoWS) as the

² World Bank, Citywide Inclusive Sanitation: A Call to action Briefing Notes, <http://pubdocs.worldbank.org/en/Citywide-Inclusive-Sanitation.pdf>

pilot County to apply the approach. A methodology was developed in collaboration with Nakuru County and relevant national government representatives to address sanitation challenges in a Countywide manner through a strategic planning process.

Typically, the Countywide strategic sanitation planning process is based on five key steps (see also Figure 2):

1. **Who:** Establish a multi-sectoral strategic sanitation planning team and integrate stakeholder engagement
2. **Why:** Know your ‘why’ and understand your current situation
3. **What for:** Develop a shared vision and select indicators of success
4. **How:** Agree on guiding principles
5. **Then what:** Plan your interventions

Figure 2: The five steps of the Countywide Inclusive Strategic Sanitation Planning



1.3 Makueni Countywide Inclusive Sanitation

Based on the Nakuru County experience with the COWIS approach, the MoH and MoWS identified two additional counties—Makueni and Turkana—to receive technical support to develop action plans for improvement of sanitation service provision while following the COWIS approach.

The support is based on and aimed at institutionalizing the extensive work done by the MoH on the Environmental Sanitation and Hygiene Policy, Strategy, Open-Defecation Free (ODF-Kenya) Roadmap, and the prototype County Sanitation Bill among others. It was also to borrow from the experience gained with Nakuru County on preparation of a Countywide sanitation strategic Investment plan. It is anticipated that the County sanitation action plans would provide recommendations for improvements, including policy and institutional interventions, as well as strategic infrastructural improvements that could result in quick gains. The recommendations are expected to ultimately contribute to the overall national sanitation technical assistance.

This report details Step 1 and Step 2, which included identification of a multi-sectorial team that will participate in the development of the strategic planning process and understanding the current sanitation situation in Makueni County through a situation analysis.

The Sanitation Situation analysis process

At the on-set, Makueni County established a multi-sectoral technical team (Annex 1) as part of (Step 1) to carry out the situation analysis. The technical team consisted of representatives from the health, water, environment, lands and physical planning, Gender, Education as well as Roads and Devolution departments. The process of establishing a standing multi-sectoral technical steering team is ongoing and will culminate in the formal appointment of the team by the Governor vide the Kenya Gazette.

This report presents the results of the Makueni County sanitation situation analysis (Step 2- the current sanitation situation). The first task undertaken by the multi-sectoral sanitation team was the review of the current situation of sanitation service delivery in the entire Makueni County. The situation analysis also covered other related services including solid waste management and drainage.

Scope of the Review

Specifically, the sanitation situation review focused on the following key areas: provision of sanitation services under devolution; monitoring and reporting for sanitation; progress towards reaching sanitation targets; efforts towards climbing the sanitation ladder to achieve safe, sustainable sanitation solutions; the enabling environment for sanitation provision and the existing collaborative behaviours (partnerships and coordination of/ in sanitation activities).

The Review methodology

The review methodology involved: a) a desk review of the available relevant documents including County sanitation profiles (2014 and 2017); Makueni County Integrated Development Plan (CIDP), sanitation evaluation reports; Makueni County Spatial Plan; Integrated Household Budget Surveys; MICS survey report and online CLTS data; and review and consolidation of data collected through relevant County departments. County sanitation data, was collected by the relevant County officials using an assessment template (See Annex 4) which covered the following thematic areas³:

- Context analysis of the County
- Existing situation of Water supply and sanitation
- Enabling environment (policy, legal framework, institutional arrangements & financing)
- Solid waste management
- Drainage and storm water management
- Monitoring & Evaluation and Coordination mechanisms for sanitation.

To conduct the assessment, the multi-sectoral technical team was grouped into four (4) working teams focusing on the following:

- a) **Rural sanitation:** This team focused on assessment of sanitation situation in rural areas including CLTS, schools and health care facilities. Members of this team were drawn from the Departments of Health services (public health) and Education

³Review of Provision Sanitation Services in Makueni and Turkana Counties: Assessment Framework/Template

- b) **Water Supply and Urban Sanitation:** This team assessed the status of water supply and urban sanitation in Makueni County. The team consisted of members from the Departments of Water, and Environment and Water Service Providers (utilities).
- c) **The Solid Waste, Environment and Climate Change:** This team focused on solid waste management and climate vulnerability data. Members came from the Directorate of Environment and Climate Change within the Department of Water and Environment.
- d) **Context analysis, drainage and storm water analysis:** This team focused on the County profiles and available information of existing storm water drainage system. The team comprised of members drawn from the Departments of Land and Physical Planning and The Department of Roads and Infrastructure.

The following sections present the findings of the situation analysis.

2.0 MAKUENI COUNTY PROFILE

Makueni County is one of the forty-seven counties in Kenya. It is situated in the South Eastern part of the country and borders the following counties: Machakos to the North, Kitui to the East, Taita Taveta to the South and Kajiado to the West. Makueni lies between Latitude 1° 35' and 3° 00' South and Longitude 37°10' and 38° 30' east and covers an area of 8,008.7 Km².

2.1 Physical and ecological features

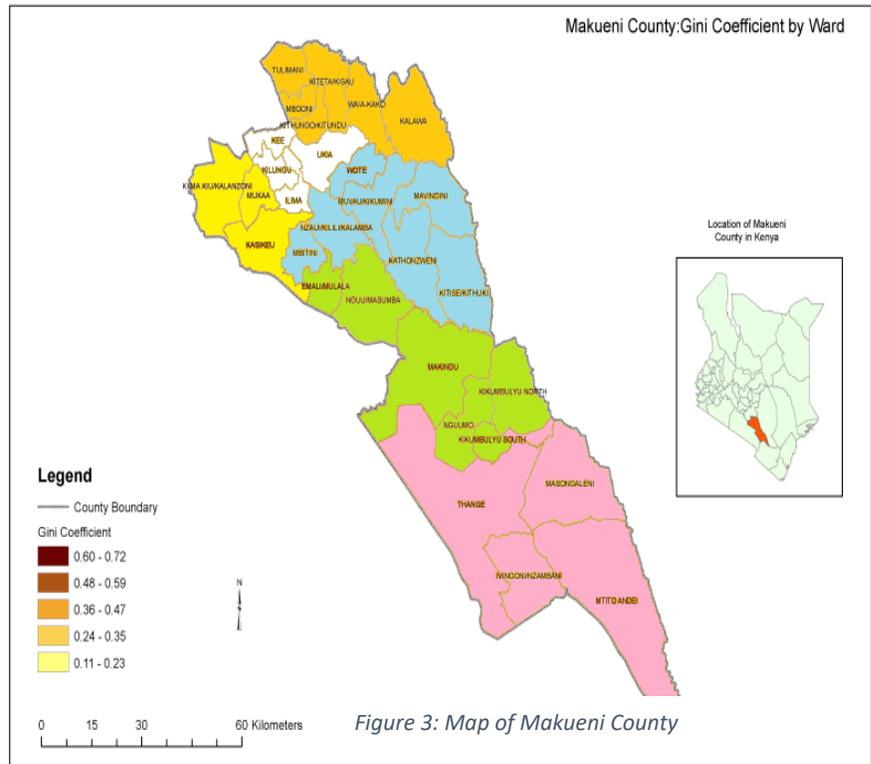
Major physical features in the County include the scenic and volcanic Chyulu hills, which lie along the South West border of the County in Kibwezi East and West Sub Counties. The forested Mbooni hills in Mbooni Sub County, Kilungu hills in Kaiti Sub County in the North and the Athi River and parallel Yatta Plateau to the Southeast. The County's altitude rises from 259m above sea level in the southeast to 2138m above sea level in the northwest.

Major rivers in Makueni County include: Thwake, Kaiti, Kikuu, Muooni, Kiboko, Kambu, Tsavo, Mtito Andei and Kibwezi, all of which channel their waters into the Athi/Sabaki River system that flows into the Indian Ocean. Makueni County is largely arid, semi-arid, and prone to frequent droughts. The County is vast, with a total surface area of approximately 8,038 Km^{2.4}.

Out of this, 63% (5042.69km²) is arable while the remainder cannot support agriculture⁵. The County experiences two rainy seasons: the long rains occurring in March, April, May (MAM rains) and the short rains occurring in October, November and December (OND rains). The rains are not evenly distributed across the County. The hilly regions of Kilungu and Mbooni receive about 800- 1200 mm of rainfall (above normal) whereas the lower areas such as Kibwezi receive below normal rainfall of about 300 mm. The temperatures range between 20.2 and 35.80 degrees centigrade, with the hilly areas being relatively colder compared to the low-lying regions⁶.

2.2 Population and demographics

According to the 2009 census, the County's population stood at 884,527 people⁷. The projected population for 2018 based on the 2009 census was 1,002,979 where 488,378 are male and 514,601



⁴ Makueni County Spatial Plan (2019-2029)

⁵ Makueni County CIDP 2018-2022)

⁶ Makueni County First County Integrated Development Plan 2013-2017

⁷ 2009 Kenya Population and Housing Census

females. The youth (18- 35 years) account for almost 24 percent of the total population. The County is estimated to have an urbanization rate of 11.8%⁸. The most populous areas are the upland areas of Kaiti and Mbooni Sub-Counties, with a population density of 248 and 195 people per square kilometre, respectively, followed by intermediate altitude areas of Kilome and Makueni with densities of 137pp/km² and 125pp/km², respectively. Kibwezi West and Kibwezi East are the least populated areas in the County at 79pp/km² and 60 pp/km² respectively. The population density in the County is 125 persons per Km².

2.3 Political and administrative units

Administratively, Makueni County is subdivided into six (6) Sub Counties, which are the electoral constituencies. The County has 30 electoral wards, with two sub-wards in each, totalling to 60 sub-wards. There are 3,612 villages clustered into 300 village clusters.⁹

2.4 Social- economic profile

The County's economy is largely in subsistence agriculture, which is rain-fed crop farming, indigenous livestock rearing, horticulture and apiculture. Being a water stressed region, the County government has focused on water management through community projects like dams, irrigation schemes and boreholes to boost agriculture. There is high level of unemployment among employable youths contributing to relatively high levels of poverty (34.8%).¹⁰ The poor in the County have limited access to basic needs such as food, shelter, clothing, health, water and education. About 17% of Makueni County residents lack formal education. The illiteracy rate stands at 22.41%.¹¹ The majority of the poor are women, children and persons with disability. Poverty is most severe amongst the women due to inequality, limited access to and ownership of land, lack of income generating opportunities, isolation in essential economic services and decision making.¹² However, Makueni County is embarking on livelihood-transforming projects such as fruit and milk processing projects. Recently the County received a grant of KES 110M from the European Union (EU) to support its fruits and milk-processing project. The grant is meant to enable construction of markets, abattoirs, fruit and milk processing factories, food storage, dairy, seed production and multiplication and fish processing.¹³

2.5 Settlement patterns

As of 2018, the rural population stood at 962,379 people, the County is predominantly rural with only 8% of the population living in urban areas. Wote, Emali and Mtito Andei are the major urban centers. Other urban centers of significance are; Machinery, Makindu and Kibwezi, Malili, Kambu, Kiundwani, Kiboko and Sultan Hamud. They are located along the Nairobi – Mombasa highway and have a total population of 39,879 projected to be 45,233 in 2026¹⁴.

2.6 Land tenure

At 21.9%, land ownership within the County is below the national average of 39.4%¹⁵. The lowlands of Nguu, Kibwezi/Dwa, Masimba, Makindu/Kiu, Kulula, Kiboko, Kevanda/Tarada have the lowest land ownership ratios. Most of the land remains un-adjudicated, with only 35% percent bearing title deeds.

⁸ Makueni County Spatial Plan (2019-2029)

⁹ Makueni County CIDP (2018-2022)

¹⁰ KIHBS 2015/2016)

¹¹ Makueni County Government Factsheets (2018)

¹² Kenya Integrated Household Budget Survey 2015/2016

¹³ <https://makueni.go.ke/departments/agriculture/ksh-110-million-boost-for-makueni-fruit-processing-project/>

¹⁴ Makueni County Spatial Plan (2019-2029); Makueni County CIDP 2018-2022

¹⁵ "Lands, Mining and Urban Planning – Makueni CIDP II."

The titled areas are mostly in the County's upper and middle zones while the adjudication process in 25 settlement schemes in the Kibwezi area remains incomplete but plans are in place to finalize the process.

About 90% of the rural land is held under freehold while 10% is public urban lands, held under leaseholds. Most plot owners in urban areas however have no titles to their land. However, the County has surveyed most of the major urban areas and submitted the files to the Director of Surveys for approvals and onwards processing of leasehold titles.

In Kenya generally, land ownership has implications on sanitation in both urban and rural settings. Households and landlords do not see the need to invest in long term sanitation solutions on un-adjudicated land. Temporary and makeshift sanitation facilities are therefore commonplace in such settings. Most of the applications received for development of plots ranges from commercial to residential with minimal industrial development. All the applications are accompanied by plans for septic tanks and soak pits, which often are not constructed to the required standards of depth and size occasioning spills on underground and surface water.

3.0 POLICY LEGAL AND INSTITUTIONAL FRAMEWORK FOR SANITATION

Kenya has broadly evolved an enabling legal and policy environment for advancement of sanitation as described below.

3.1 National Level

The legal framework for sanitation consists of a plethora of laws including the Constitution of Kenya, Public Health Act Cap 242; the Health Act 2017; Water Act 2016, Environmental Management and Co-ordination Act(EMCA 1999), Physical Planning Act 2019; County Governments Act 2012; Urban Areas and Cities Act 2011; Occupational Safety and Health Act 2007; Meat Control Act 2010; Veterinary Surgeons and Veterinary Para-Professionals Act 2011; Food, Drugs and Chemical Substances Act; Tobacco Control Act, 2007; Alcoholic Drinks Control Act, 2010; Bio-safety Act 2009; Malaria Prevention and Control Act (Cap 246); Chief's Act; Standards Act; Agriculture, Fisheries and Food Authority Act among others.

The Constitution of Kenya(2010) under Articles 43 and 42 guarantees every person the right to reasonable standards of sanitation, a clean and health environment, health, water, housing, education, food and social security. For these rights, the State in Article 21 is required to take necessary policy, legislative and other measures including setting of standards to ensure their progressive realization. It also provides the framework for addressing the needs of vulnerable groups within society, including women, older members of society, persons with disabilities, children, youth, members of minority or marginalized communities and gives every person the right to institute court proceedings when his/her rights to sanitation has been denied, violated, infringed or threatened. The Fourth Schedule of Constitutions assigns the County governments' powers and functions with respect to provision of water and sanitation services including licensing and control of undertakings that sell food to the public, cemeteries, funeral parlours and crematoria, refuse removal, refuse dumps and solid waste disposal and storm water management in built-up areas.

The Water Act 2016 vests provision of water and sanitation services in the County governments who delegate this function to water service providers responsible for direct provision of water and sanitation services at the household/premises level.

The Basic Education Act of 2013 sets out a number of requirements to be met by all basic education and training institutions before they can be licensed.¹⁶ Among the requirements, include the requirement that premises and accommodation must conform to the prescribed requirements of the occupational health and safety regulations, which include sufficient and clean sanitation facilities for each gender.¹⁷

The Public Health Act2017 outlines the proper standards of sanitation and provision of adequate supply of water.¹⁸ The Act therefore declares that any building or premises which has not observed proper standards of sanitation, has adequate supply of water and/or risk the spread of diseases as nuisances.

The Environmental Management and Co-ordination Act 1999 (amended in 2015) provides the legal and institutional framework for the management of the environment and the enforcement of the right of every person to a clean and healthy environment. The relevant provisions to this effect relate to prohibition of water pollution, control of discharge of effluents into sewerage system and the

¹⁶ Section 82 of the Basic Education Act, 2013

¹⁷ Section 52 of the occupational and Safety Act, 2007

¹⁸ Section 118 of the Public Health Act

environment, standards for waste management including wastes disposal sites and plants and standards for pesticides and toxic substances.

Globally, **Sustainable Development Goal 6 (SDG 6)** aims to ensure access to water and sanitation for all by 2030. In respect of sanitation and hygiene, the SDG 6 aims to: by 2030 - (a) achieve access to adequate and equitable sanitation and hygiene for all; (b) end open defecation; (c) improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials; (d) halve the proportion of untreated wastewater and substantially increasing recycling and safe re-use; and (e) support and strengthen the participation of local communities for improving water and sanitation management.

The Kenya Vision 2030 is the country's long-term national development blueprint. It aims to transform Kenya into a newly industrialized, middle-income country providing a high quality of life to all its citizens in a clean and secure environment by 2030. The Kenya Vision 2030 commits to ensuring that 'every Kenyan has access to clean, safe water and improved sanitation by the year 2030. This is to be realized through various strategies including rehabilitation and expansion of water supplies and sanitation in urban and rural areas; promotion of the use of hygienic toilets including ventilated and improved pit (VIP) latrines and septic tanks in rural areas and schools on a ratio of one toilet for every 30 boys and one toilet for every 25 girls; construction of sanitation facilities to support a growing urban and industrial population; development and expansion of sewerage schemes especially in urban areas; promotion of public health education on sanitation; encouraging planned rural and informal urban settlements to ensure access to improved and safe sanitation; innovations in rural waste disposal combined with relevant incentives; encouraging public-private partnerships (PPPs) in the development and management of sewerage systems; and promotion of solutions that can provide total hygienic sanitation that includes clean toilets, safe sludge removal and effective sludge treatment. As such, Vision 2030 lays a good basis for improvement of the sanitation situation nationally, covering both off-site (sewer systems) and on-sanitation sanitation facilities, and providing linkages with other related services like solid waste management.

Beyond the Constitution and the Kenya Vision 2030, the Government of Kenya through the relevant ministries has put in place various policies frameworks to provide guidance and enforcement mechanisms for water and sanitation service provision.

The Kenya Environmental Sanitation and Hygiene Policy (KESHP) 2016-2030 provides the overarching policy framework for achieving universal and sustainable access to improved sanitation in Kenya by 2030. KESHP 2016-2030 envisions: a clean, healthy and economically prosperous Kenya, free from sanitation and hygiene related diseases by 2030; make Kenya Open Defecation Free (ODF) by 2030; achieve and sustain 100% access to improved rural and urban sanitation by 2030; and increased public investment in sanitation and hygiene from 0.2% to at least 0.5% of the GDP by 2020 and to 0.9% of the GDP by 2030. To support the implementation of this Policy, the MOH developed the Kenya Environmental Sanitation and Hygiene Strategic Framework 2016-2020 and the National ODF Campaign Framework (2016-2020). The country through the MOH and technical assistance from the WB is in the final stages of developing an Environmental Health and Sanitation Bill, which has aligned sanitation service provision to the Constitution.

The Draft Sessional Paper on National Water Policy (25 February 2019) aims to guide and provide a framework for sustainable management and financing of water resources; water harvesting and storage; and for equitable, efficient, and universal access to water supply and reasonable standards of sanitation, for domestic, economic use and ecosystem sustenance. In relation to WASH, the policy seeks to prioritize

progressive and equitable realization of sewerage and non-sewer sanitation services using technologies appropriate for urban and rural areas and household needs by creating effective and efficient human, institutional, infrastructure and management capacities, as well as putting in place required standards to promote consumer protection to be applied by all cadres of sanitation service providers. The Policy further aims to put in place mechanisms and resources to enhance the mainstreaming of affirmative action and gender considerations in water sector planning, decision making and implementation of actions towards progressive attainment of equity and gender equality in the water sector.

The National Water Master Plan (NWMP) 2030 sets out the national investment targets to achieve the Kenya Vision 2030 water and sanitation targets. Among the objectives of the NWMP 2030 is to ensure improved water and sanitation are available and accessible to all by 2030. Specifically, the targets for sanitation development include: (a) increase coverage rate of improved sanitation to 100% (Improve sanitation by sewerage system and on-site treatment facilities); (b) increase coverage rate of sewerage system to 80 percent for urban population; and (c) install improved on-site treatment facilities for remaining population not covered by sewerage systems.

The Kenya Health Policy Framework 2030¹⁹ identifies unsafe water and sanitation as some of the leading risk factors and contributors to mortality in Kenya. The Kenya Health Policy Framework therefore aims to ensure among other things, that the health sector interacts with, and influences interventions across sectors that have an impact on health including the promotion of access to safe water and adequate sanitation and the promotion of good hygiene practices.

The National Environment Policy, 2013 recognizes the need for special attention to the most pressing environmental health problems associated with air and water pollution, water supply and sanitation, waste management, chemical and food safety, which directly affect human health. The National Environmental Policy, 2013 therefore aims to improve the management and conservation of water supply sources; promote technologies for efficient and safe water use, especially in respect to wastewater use and recycling; and provide incentives for private sector investment and development of appropriate water and sanitation technologies and infrastructure for wastewater management. In relation to waste management, the policy aims to promote the use of economic incentives to manage waste including waste recovery, recycling and re-use as well as Environmental Health Impact Analysis (EHIA) for all development projects.

The National School Health Strategy (2011-2015) recognizes water, sanitation and hygiene as critical towards creating an improved learning environment and achievement of Education for All (EFA). The aim for improving school Water, Sanitation and Hygiene (WASH) is to reduce water-borne and sanitation-related diseases e.g. cholera and other diarrheal diseases, worm infestation, skin infections among others.

3.2 Makueni County

The Makueni County Vision 2025, which is anchored on the Kenya Vision 2030 and is in line with Africa Union's Agenda 2063 and the SDGs, overarches all social- economics transformation development plans in the County including plans to accelerate access to improved water and sanitation of the people of Makueni. The County's Vision 2025 envisions a *prosperous value- based County with high quality of life*. Holistic Water Harvesting and Management (*Kutwiikany'a Kiwu*) is one of the commitments under the County's Vision 2025²⁰. To achieve the commitment on Holistic Water Harvesting and Management, the

¹⁹Sessional Paper No. 6 of 2012 on the Kenya Health Policy 2012-2030

²⁰ Government of Makueni County Vision 2025

water sector of Makueni County has developed a Water Policy 2019. The Water Policy provides a framework for harvesting, storage, treatment, distribution, management, governance, and utilization of water resources in the County²¹. The Water Policy is expected to guide operations of water service providers and community water schemes including protection and management of water catchment areas and wetlands. The County has developed a Water Bill and Regulations 2019 (draft) for Community Water Service Providers.

The Makueni County Integrated Development Plan (2018-2022) generally captures provision of water (access) and safety (potable). There are plans to connect 7 urban centres with reliable piped water for use all the year round (Mtito Andei, Wote, Emali, Tawa, Makindu, Nunguni and Kasikeu). Safe and clean drinking water is captured under the holistic water harvesting, storage and management of water.

In the area of sanitation, Makueni County still lacks a County level policy and legal framework to guide and regulate sanitation services. The County therefore relies on the National Policy guidelines including the Kenya Environmental Sanitation and Hygiene Policy (KESHP) 2016-2030, National ODF Campaign Framework (2016-2020), the Kenya School Health Policy 2018 and the Health Care Waste Management Plan 2016-2021 to guide implementation of sanitation services in the County. Despite the MOH developing a Prototype County Environmental Health and Sanitation Bill to enable counties fast track formulation of County level sanitation legislation, Makueni County is yet to domesticate the Bill or develop its own specific County law that would enable regulations, implementation and enforcement of sanitation services.

The Makueni County Integrated Development Plan (2018-2022) in reference to Universal Health Care (UHC) through community Health services emphasizes the need for environmental hygiene and sanitation at level I (Community). Apart from the small-scale sanitation activities captured in the Departmental Annual Work plans developed for various departments, there no specific policy and strategy for sanitation for the County.

The Makueni CIDP 2018-2022 has captured plans to develop waste management systems in 6 urban centers (Mtito Andei, Wote, Nunguni, Emali, Kibwezi, Sultan Hamud). However, the County does not have a specific Solid Waste Management Policy save for a chapter on solid waste management within the draft Environment policy. The Environment Policy awaits tabling to the cabinet and eventual submission to the County Assembly.

A draft solid waste management Bill, 2018 exists, though it is yet to be submitted to the County Assembly for discussion and approval. To address climate change issues, the County has a Climate change policy and Climate change regulation 2015 that is anchored on the Public Finance Management Act. A County Environment Action Plan (MCEAP, 2016-2020) is in place.

The Makueni County Water Policy 2019 has addressed management of storm water. The policy proposes promotion of flood control mechanisms by constructing sand-dams, gabions, and storm water drains and recycling of stored storm water.²² The draft Makueni County Climate change policy also addresses the issues of storm water through the “Roads 4 Water” initiative that involves harvesting excess road water runoff using mitre drains. Additionally, the Makueni County draft Water Bill, 2019 has provisions for storm

²¹ Makueni County Water Policy 2019

²² Makueni County Water Policy (draft) March 2019

water management including provision for Storm Water Infrastructure like farm ponds.²³ The County's 2019-2029 Spatial plan (CSP) also proposes construction of drainage systems in all markets in the County.²⁴ The County has developed and submitted to the County Assembly, 10 Urban Land use Plans for selected urban centers (Wote, Kathonziweni, Kikima, Mbumbuni, Sultan-Hamud, Emali, Machinery, Kambu and Kasikeu and Nunguni). For the financial year 2019/2020 the department has prepared plans for the following markets; Kitise, Mavindini, Kinyambu, Nthongoni, Matiliku, Kalongo, Makindu, Salama, Kalawa, Mtito Andei, Kibwezi and Malili. The plans have captured all land use proposals and development of drainage and storm water management systems along designated road reserves. A case in point is the Wote and Emali drainage channels which has complemented well with cabro paving's providing an opportunity for surface runoff to be fully tapped and directed to natural reservoirs. Implementation of these projects will be through the County Department of Transport, Roads and Infrastructure, the National Government and any other relevant stakeholders.

3.3 Institutional Framework for Sanitation

The Constitution under the Fourth Schedule has devolved provision of sanitation services to the 47 counties with the National Government retaining the responsibility for national policy, public investment, training, capacity building, technical assistance and standards formulation.

The County governments are specifically responsible for County sanitation services including licensing and control of undertakings on: Sales of food & Drinks to the public, sand conservation and utilization/harvesting, liquid waste management, cemeteries and funeral parlours, refuse removal, transportation, Dumpsite management including solid waste disposal and storm water management in built-up areas. The Constitution also requires County governments to decentralise their sanitation functions to lower tiers of County governments including establishing urban management authorities to ensure proximate and efficient delivery of services. Table 1 below shows the distribution of sanitation-related functions between national and County governments.

Table 1: Distribution of sanitation related functions between national and County governments

Functions of County Government vs. National Government (4 th Schedule) related to sanitation	
National Government - CK 2010 4 TH Schedule Part I	County Government - CK 2010 4 TH Schedule Part II
9. National economic policy and planning 11. National statistics and data on population, the economy and society 14. Consumer protection 19. National public works 22. Protection of the environment 24. Disaster management 28. Health (sanitation) Policy 32. Capacity building and technical assistance to counties 33. Public investment	2. County health services, including, in particular— (c) Promotion of primary health care; (d) Licensing and control of undertakings that sell food to the public; (f) Cemeteries, funeral parlours and crematoria; and (g) Refuse removal, refuse dumps and solid waste disposal. County planning and development including (a) statistics, and (d) housing 11. County public works and services, including— (a) storm water management system in built up area and (b) water and sanitation services.

²³The Makueni County Draft Water Bill 2018

²⁴ Makueni County Spatial Plan 2019-2029

3.3.1 National level

The institutional responsibility for sanitation at the national level lies with both the State and non-state actors. Broadly, the Constitution of Kenya 2010 assigns sanitation powers and functions that are typically mapped as institutional roles and responsibilities divided between entities at both national and County levels. These powers, functions, roles and responsibilities include **policy and regulation; financing, production and provision of services**. At the national level, the institutional arrangements for sanitation are fragmented and involve various ministries, departments and agencies.

Currently, the key sanitation functions are shared between the following four ministries:

- a) **The Ministry of Health** under the Public Health Act and other related laws, oversees the general public health, sanitation policy management, onsite environmental sanitation and hygiene portfolio and is mainly responsible for national policy and strategy formulation, coordinating sanitation and hygiene activities and enforcement of public health laws and regulations;
- b) **The Ministry of Water and Sanitation** is the key institution in charge of the formulation of national policies and strategies relating to water, sewerage and sanitation management, sector co-ordination, national investment planning and resource mobilisation. Service delivery regulation is through the Water Services Regulatory Board (WASREB) and Water Resources Authority (WRA). The Water Service Boards/Water Works Development Agencies are responsible for the water and sewerage works development.
- c) **The Ministry of Environment and Natural Resources** through the National Environmental Management Authority (NEMA) is responsible for environmental regulation, enforcement, and providing guidelines for solid waste, industrial, hazardous and other waste management and pollution control.
- d) **The Ministry of Education** is responsible for implementation of school water, sanitation and hygiene (WASH) programmes.

The primary regulatory responsibility for sanitation at the national level vests in three key departments and agencies as follows:

- a) **The Director of Public health:** The Director of Public Health and the Environmental Health Division of the Ministry of Health is responsible for enforcement of Public Health Act and related laws, regulations, standards and procedures; taking all lawful measures for preventing the occurrence or dealing with any public nuisance, outbreak or prevalence of any infectious, communicable or preventable disease; safeguarding public health; and ensuring compliance to international health regulations and rules.
- b) **Water Services Regulatory Board (WASREB):** WASREB is a non-commercial State Corporation established under the Water Act 2016 with the principal object of protecting the interests and rights of consumers in the provision of water and sanitation services including prescribing national standards for the provision of water services including sewerage services and asset development for service providers; evaluating and recommending sewerage tariffs to the County water services providers and approving the imposition of such tariffs in line with consumer protection standards; setting license conditions and accreditation of water and sewerage services providers; monitoring and regulating licensees and enforcing license conditions;

- c) **The National Environment Management Authority (NEMA):** NEMA, established under the Environmental Management and Co-ordination Act (1999), is the principal government agency responsible for the implementation of all policies relating to the environment, and exercising general supervision and coordination over all matters relating to the environment. NEMA is responsible for prescribing and enforcing regulations, measures, standards and guidelines and ensuring compliance with standards for collection, transportation, treatment, disposal and recycling of wastes. It is also responsible for taking all practical steps to ensure that all wastes including industrial, hazardous and toxic, pesticides and toxic substances, biomedical wastes, and radioactive substances are managed in a manner that protects human health and the environment against the adverse effects, which may result from the waste.

To strengthen and harmonize environmental health and onsite sanitation regulatory environment, the Kenya Environmental Sanitation and Hygiene Policy 2016-2030 (KESHP) and the Draft Environmental Health and Sanitation Bill 2019 has proposed the establishment of *the National Environmental Health and Sanitation Coordination and Regulatory Authority* to: (a) oversee the implementation of environmental health and sanitation policies; regulate environmental health, onsite sanitation and hygiene services; and prescribe and enforce regulations, rules, guidelines and standards for environment health and onsite sanitation.

3.3.2 Makueni County

At the County level, the main sanitation functions²⁵ are shared within the departments of Health services, Water, Sanitation and Environment, Roads and Public Works, Lands, Physical Planning and Education as well as urban authorities including municipality board and town committees and water service providers (utilities). These departments, authorities and agencies are broadly responsible for delivery of sanitation services and County regulation and enforcement of laws, regulations and standards within their respective jurisdiction in collaboration with the national regulatory agencies.²⁶ The WSPs are responsible for provision of water and sanitation services within the area specified in their license. The roles and responsibilities of key Makueni County departments in sanitation are as follows:

- **Department of Health Services:** The Public health unit is charged with the role of providing sanitation and hygiene services at community level including education, advocacy and promotion of sanitation services and uptake programmes such as CLTS; ensuring compliance to standards and guidelines in institutions such as schools and health facilities; management of sanitation facilities such as incinerators; oversight, law enforcement as well as to provide technical support to communities, institutions and other departments of the two levels at governments within the County .
Until recently (2018), management of sanitation facilities such as dumpsites and supervision of collection, storage, and disposal of both solid and liquid wastes was the role of the public health unit. These functions have since been transferred to the department of Water, Sanitation, Environment and Climate Change.
The County Executive Committee Member (CECM) who is in-charge of policy formulation heads the Health Services Department. There is a Chief Officer (CO) responsible for resource allocation and appropriation. Technically, the department has three (3) Directors who ensures that department

²⁵ The Constitution of Kenya; Constitutional Functional Context: Article 186 & Schedule IV: Part II. The powers and functions include refuse removal, refuse dumps and solid waste disposal; licensing and control of undertakings that sell food to the public; cemeteries, funeral parlors and crematoria; storm water management system in built up areas; water and sanitation services; control of air pollution, noise pollution and other public nuisances; control of rearing and straying of animals; and burial of animals

²⁶ WSUP (2017) Situation analysis of the urban sanitation sector in Kenya.

plans and programmes are implemented as planned. The Directors are supported by the unit Head in-charge of public Health (Environmental Health Services). They also work closely with the unit Heads in charge of school health and community Health Services. The Department currently has a workforce of ninety-seven (97) public Health Practitioners who are responsible for sanitation. The training level varies i.e Degree level (Public Health Officers, 23); Diploma level (Assistant Public Health Officers, 60) and Certificate level (Public Health Assistant, 14).

- **Department of Water, Sanitation, Environment and Climate change:** The department is mandated to govern, develop and sustain all public water resources and supplies progressively, ensuring that all County residents have access to safe, reliable and affordable water, sanitation services (sewerage), solid waste management and market cleaning. The role and responsibilities of the department includes: market cleaning; garbage collection; dumpsites management; disposal sites management; supervision collection, storage and disposal of solid waste; awareness creation on proper solid waste management; organizing of monthly clean ups and ensuring enforcement and compliance on proper solid waste management. In addition, the directorate of environment, sanitation and climate change manages the public toilets in the markets/urban areas. The County Executive Committee member heads the department. There are 2 COs under this department i.e CO water and sanitation and CO - Environment and Climate Change. The Chief Officers (COs) being the accounting Officers, are responsible for resource allocation and appropriation. There are 2 assistant directors who provide technical leadership in water, sanitation environment and climate change activities. The department has a workforce of 106 staff and casual cleaners engaged in cleaning selected markets. Currently, the County has three water companies majorly supplying water to urban areas. These are Wote Water and Sewerage Company (WOWASCO), Kibwezi Makindu Water and Sewerage Company (KIMAWASCO) and Mbooni Water and Sanitation Company (MBONWASCO). The companies are mandated to supply water within their areas of jurisdiction²⁷
- **The Departments in-charge of Roads and Infrastructure and Lands & Physical Planning** are mandated with the responsibility of drainage and storm water management. Specifically, the department of Lands and physical planning is responsible for the designation of land for development of drainage and storm water systems along road reserves, while the department of roads and public works is mandated to provide designs, bill of quantities, construction and supervision of drainage channels²⁸.
- **Department of Education:** Most of the function of education are not devolved. However, Early Childhood Development and Education Centres (ECDECs), Community libraries and County Technical Training Institutes (CTTIs) are functions of the County Governments. The Makueni County Department of Education is therefore responsible for provision of sanitation facilities to ECDEs and CTTIs in the County, including latrines, hand-washing facilities, provision of water storage (tanks) facilities and health education in schools. A County Executive Committee for education heads the department. There are 2 Chief Officers (COs) i.e CO Education and CO ICT. There are 5 Directors in this department (Director of ECDE, CTTI, Support to Education, Sports and ICT) with two assistant directors- ECDE and CTTI. In the ECDE directorate, there twelve ECDE officers who work in the 30 wards supervising 2000 ECDE teachers in 1268 ECDE centers. Handwashing facilities in ECDE centers are inadequate. Most of the center's lack adequate sanitation facilities with ECDE children sharing the available sanitation facilities with the primary school sections²⁹. School sanitation facilities in Makueni

²⁷ Makueni County Water Policy 2019

²⁸ Makueni County, Department of Roads and public works and Land Use/physical planning.

²⁹ MOED (2011) basic report on spatial analysis of school mapping data.

County are generally unhygienic and unsafe for children. For instance, majority of the school latrine squatting holes are unsafe for the ECD children. Most learners walk to school bare feet and are likely to get diseases because of the poor hygiene of the sanitation facilities in school.

- **Department of Gender, Children, Culture and Social Services**

Department of Gender, Children, Culture and Social Services is mandated to deliver on Gender issues, provision of Children services, Persons with Disability (PWDs) services and older persons and other special interest groups' services. The department's mandate is in tandem with Sustainable Development goals specifically goal number 5 and goal number 11. It also draws its strength from the Constitution of Kenya 2010, which establishes the County governments and subsequently County government departments. However, not all social services are devolved. Some services are provided by the national government and are delivered by line ministries and state corporations like the National Council for Persons with Disability, Department of Children Services, Ministry of Labour and Social Security, National Gender and Equality Commission. The department is also involved in construction of social halls from time to time, whereby by now the department has been able to construct a total of 11 social halls. Some of the halls have pit latrines while others are lacking. The department is currently advocating for disability mainstreaming in the provision of sanitation facilities in the County .

The Departmental structure is headed by a ECM and served by a Chief officer. There are two directorates (Directorate of Gender and Social Services and the Directorate of Culture and The Arts), each headed by a substantive director. Under each Directorate, there are units headed by unit heads that is, Children Unit, Gender Issues unit, Disability Unit, Music and The Arts and Culture Unit. The department is represented in Devolved Administrative Units at the Sub County level with Social Development Officers in each unit coordinating department mandate at the sub county level. The department is currently running an interest free loan project - dubbed as *Tetheka (get help)*. The department works with 38 OVC institutions most of which are affiliated to primary schools. Majority of these OVC centres lack sanitation facilities within their space and therefore share with the affiliate primary school. The available sanitation facilities in both institution and public places are not child or disability friendly.

4.0 SANITATION FINANCING

4.1 National Level

Kenya aims to achieve universal access to improved sanitation by 2030. Achieving universal access to improved sanitation however requires huge capital expenditure. There are three funding streams for sanitation and hygiene in Kenya as outlined below.

1. **On-budget** – Treasury funds transferred directly from the Treasury to the executing ministry or department;
2. **On budget funds transferred from donors** to the executing ministry/department or agency and;
3. **Off budget** funding mainly from NGOs and donors implementing sanitation activities directly. This type of funding is not effectively captured as part of the overall national or County budgets.

In respect of investment, Kenya has over the past allocated only about 0.2 percent of GDP to sanitation as compared to the global target of 0.9 percent and Ngor/eThekwini Declaration commitment of at least 0.5 percent of GDP to sanitation and hygiene.³⁰

To achieve investment targets for at least 80 percent sewerage coverage by 2030, the National Water Master Plan 2030 estimates that about US\$5.2 billion (KSh 520 billion). will be required for urban sewerage infrastructure development in 95 urban centers of which 96 percent will be targeted for new sewer infrastructure and the remainder for rehabilitation. Generally, sewerage development depends largely on the government budget. However, according to the government’s projections, the available budget for the sewerage subsector covers only 6.5 percent of the required investment cost, which would lead to a funding shortfall of 93.5 percent as shown in Table 2 below.

Table 2: Sanitation financing gap for Vision 2030 targets, Ksh. 540 billion

Development	Required investment	National Government resources (2013/14 – 2030/31)	Shortfall
Urban sewerage	476.5	30.9 (6.5 percent)	445.8 (93.5 percent)

Source: National Water Master Plan 2030, Ministry of Environment, Water and Natural Resources, Republic of Kenya, 2013.

In addition, construction of new sewer systems will be expected to generate additional operation and maintenance costs of almost KSh 80 billion, bringing the total financing needs to about US\$5.4 billion (KSh 540 billion).

Despite the high targets and funding shortfall, both national and County level investment and budget allocation for sanitation remain very low. At the national level, the budget allocations directed to sanitation are negligible with sanitation expenditures not readily identifiable within the Program Based Budgeting (PBB) framework and IFMIS classifications. While there is a budget code for Water Supplies and Sewerage – 3110502, there is no budget code for general sanitation. The situation in Makueni County is not any different.

4.2 Makueni County

The situation in Makueni is not different from the National state of sanitation financing. In the absence of a specific budgeting code, sanitation is not prioritized across all departments. Under the department of health, WASH activities are funded through the Primary Health care component. Similarly, under the

³⁰ WaterAid, 2011, Off track, off target: Why investment in water, sanitation and hygiene is not reaching those who need it most, WaterAid, Nov. 2011 - http://www.wateraid.org/documents/plugin_documents/offtrack_offtarget.pdf

department of Water, Sanitation, Environment and Climate Change, there is no budget code for sanitation in urban areas. A higher proportion of the budget allocated to this department goes to delivery of water services. The remaining is allocated to solid waste management i.e market cleaning and public toilets construction and maintenance. Facility Improvement Fund (FIF), which is the cost shared revenues collected at public health facilities, has been the only source of sanitation financing especially for rural sanitation such as Community Led Total Sanitation (CLTS) activities. The County largely relies on financing (off- budget) from NGOs and development partners to support sanitation interventions. Some of the NGOs currently implementing sanitation interventions in Makueni include: The USAID/KIWASH (CLTS activities in 2 wards of Kibwezi East, 308 villages); World Vision (CLTS in one ward of Mbooni sub-County - about 188 villages) and Kitise Rural Development Program (CLTS in 20 villages in Makueni sub County). The UKAID and DFID through the African Development Services Eastern are supporting climate resilience-water projects including the Masue Rock Catchment in Emali and Ngai Ndethya Sand Dams and water sumps. Action Aid has providing hand-washing facilities to schools in Kitise/Kithuki and Mavindini wards. Safaricom and Red -Cross-constructed water treatment works in Athi (Kitise Water project) and Kaiti (Wote Water project) Rivers respectively.

Table 3: Budget allocation in the last 5 financial years³¹

FY	Budget allocation (KES)		
	Primary health care (WASH incorporated)	Water supply and Sanitation	Solid waste Management
2018/2019	35 000 000	500,000	30,000,000
2017/2018	35 000 000	500,000	30,000,000
2016/2017	35 000 000	600,000	34,000,000
2015/2016	-	533,760	25,000,000
2014/2015	-	279,316	16,000,000

Budgets for Drainage and storm Water management activities have previously been incorporated within other projects such as bus-parks, market sheds, mostly domiciled in the department of Lands or Transport, Roads, Energy and Public Works.

³¹ Budget and Expenditure Unit of the County department of finance and socio-economic planning; Departments of water, Sanitation and Environment, department of Health Services

5.0 SANITATION SITUATION ANALYSIS

5.1 National sanitation situation

While the Constitution of Kenya guarantees the right of every person to reasonable standards of sanitation and clean and safe water of adequate quantities and the Kenya Vision 2030 commits to ensuring that ‘every Kenyan has access to clean, safe water and improved sanitation by the year 2030, progress towards realizing these rights and targets remains slow. The WHO/UNICEF Joint Monitoring Program (JMP) classified Kenya as having made ‘little to no progress with regards to improved sanitation and ‘good progress’ in relation to water access.³²

According to the JMP, in 2015, Kenya’s access to improved sanitation facilities (now basic) was at 30 percent, 21 percent relied on shared facilities, 37 percent on unimproved facilities, while 12 percent were practicing open defecation. With the shift to SDGs and the focus on safely managed sanitation, an analysis undertaken for Kenya in April 2017 revealed that only about 20

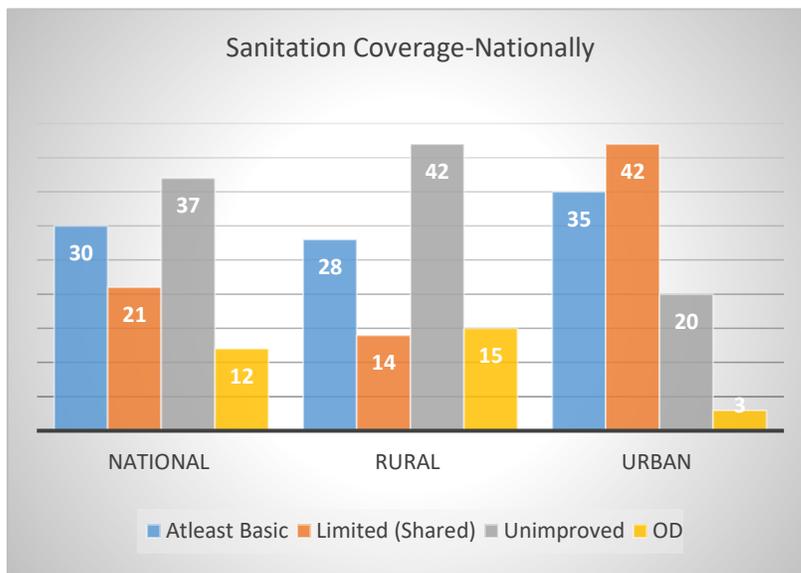


Figure 4: National Sanitation Coverage

percent of the population has access to safely managed sanitation, compared to 30 percent that had access to improved sanitation in 2015³³. Sewerage coverage currently stands at 16%³⁴ and only 5% of sewage is effectively treated due to failures of the sewerage system and inadequate wastewater treatment facilities³⁵. Overall, sanitation coverage in rural areas lags behind that of urban areas.

With respect to water, the JMP estimated that in 2015, 63% of Kenyans (82% in urban areas and 57% in rural areas) had access to improved drinking water sources, compared to 60% in 2010 (83% urban, 53% rural)³⁶. The Kenya National Bureau of Statistics (KNBS) 2013 survey estimated the access to improved water sources including piped water, rain harvested water, borehole water and water from protected wells at only 53%. The level of accessibility was higher in urban areas (72%) compared to rural areas (43%).³⁷

³² WHO/UNICEF 2015

³³ WHO/UNICEF 2015

³⁴ A Performance Report of Kenya’s Water Services Sector 2015 / 16 and 2016 / 17; Impact issue No 10. Published in 2018

³⁵ Impact issue No 10. Published in 2018

³⁶ WHO/UNICEF 2015

³⁷ KNBS 2013

5.2 Makueni County

5.2.1 Water Supply

Water sources

The available sources of water within Makueni County include; dams (sand, earth dams), boreholes, shallow wells, water pans, rivers, springs, rock catchments and roof catchments. The County has one permanent river, the Athi. There are other semi-permanent rivers such as Kibwezi, Kiboko, Kaiti, Muooni, Kikuu/Kiangini, Thange, Kambu, Makindu, Thwake, Mtito Andei and others all of which are seasonal and therefore provide limited surface water resources³⁸. There are 5 springs, luani, Umanyi, Kibwezi, Kiboko, Mzima and wetlands in places such as Kiu, Mang'elele and Thange. The County has over 159 dams, 415 boreholes³⁹ and water pans including some that are privately -owned. About 39 % of the County has high groundwater potential. These aquifers are however threatened by degradation of upland water catchments, encroachment and destruction of lowland riparian vegetation, lack of landscape restoration and uncontrolled sand harvesting upon riverbeds.⁴⁰



A riparian reserve in the forest should be protected and kept serene from encroachment, as they are important water sources.

³⁸ Makueni County Water Policy 2019

³⁹ Makueni boreholes database between the year 2013 to 2018

⁴⁰ Makueni County Water Policy 2019

Access to water

Despite having a dense network of rivers, Makueni is a water scarce County, partly because most water sources are seasonal. It is estimated that the average distance to a water point, particularly in the lowlands, is 5 kilometres. The three water companies (WOWASCO, KIMAWASCO and MBONWASCO) are mandated to supply water within their areas of jurisdiction⁴¹. The Nolturesh Water and Sewerage Company is shared between Makueni, Machakos and Kajiado Counties. Water sharing conflicts exist amongst the 3 counties receiving services from the Nolturesh Water and Sewerage Company. However, there are ongoing water sharing Agreement plans aimed at addressing the existing situation.

The current daily water production in the County is less the demand for water by about 26 305 m³/day. This provides a water coverage of about 35.6%⁴², with approximately 30% of households in Makueni County being connected to piped water⁴³ and about 64.3% rely on unimproved sources of water⁴⁴. The WSPs currently service only 15 percent of the population.

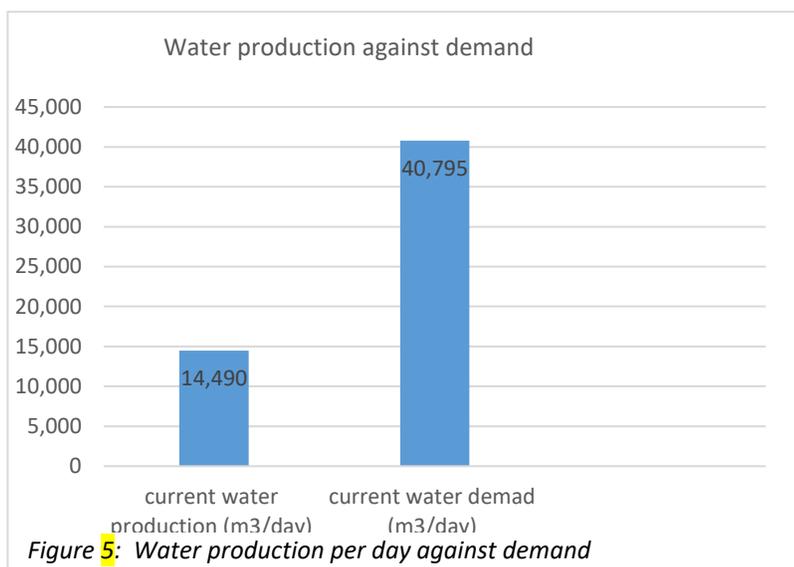


Table 4: The water production capacity and coverage of WSPs

WSPs	Production capacity (Daily)	Coverage area
WOWASCO	1500m ³	10km ²
KIMAWASCO	3000m ³	36km ²
MBOONIWASCO	550m ³	15km ²

The rural water supply in Makueni County is mainly through community water schemes. There are a total of 347-community water schemes in the County⁴⁵. These community water schemes are however faced with major challenges including inappropriate technology, poor governance and limited/lack of community /user participation in decision-making.

⁴¹ Makueni County Water Policy 2019

⁴² Makueni County Vision 2025

⁴³ Department of Water, Sanitation, Environment and Climate Change

⁴⁴ Makueni County Vision 2025

⁴⁵ Department of Water, Sanitation, Environment and Climate Change Makueni County

On-going Water Projects

Major ongoing water projects in Makueni County include The Thwake Multi-Purpose Dam, the Kaiti-Kamunyii sand dam water project, Kwa Ndulu earth dam in Nguu/Masumba, Katilinidam in Kiima Kiu/Kalanzoni ward, and Kwa Mbila earth dam in Kathonzweni ward. The Kaiti- Kamunyii sand dam water project has the potential to supply water to Wote town and its environs with a capacity of 2,000M³ per day,

Table 5: Ongoing Water Projects

Major Ongoing Water Projects	Donor/ Financier	Expected Production capacity (Daily)	Targeted Coverage area
Thwake Dam	National Government/ADB	688,000,000M ³	4000KM ²
Rehabilitation of Kamunyolo earth dam	National and County Government	84000m ³	25km ²
Kaiti-Kamunyii sand dam Water Project	Tanathi (Tana Athi Water Services Board)	2000m ³ /day	10km ²
Ndukuma Earth Dam	County Government	Proposed(not funded)	
Kia Nzou Earth Dam	County Government	Proposed	
Kilombo Earth Dam	County Government and National Agriculture and Livestock Extension Policy (NALEP)	300,942m ³	100 Acres irrigation

5.2.2 Sanitation coverage

According to the 2014 Kenya Demographic Household Survey (KDHS), majority of the population in Makueni County are using unimproved sanitation facilities⁴⁶ with about 2.4% of the population still practicing Open defecation⁴⁷. Makueni County adopted the Open Defecation Free (ODF) Rural Kenya Campaign and initiated CLTS activities in 2016.

During the 2017 County sanitation benchmarking, Makueni County was ranked number 34 out of 47 based on a set of variables⁴⁸. This was a drop from the 2014 County benchmarking (27 out of 47)⁴⁹.

Overall, majority of the households in Makueni County use pit latrines. The latrine coverage in Makueni County is estimated at 86%. About 24% of the households in the County are reported to have installed hand-washing facilities⁵⁰.

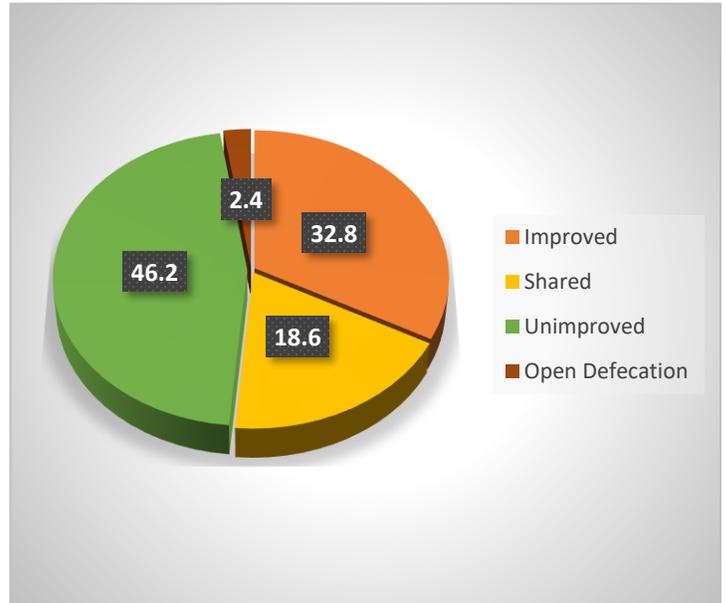
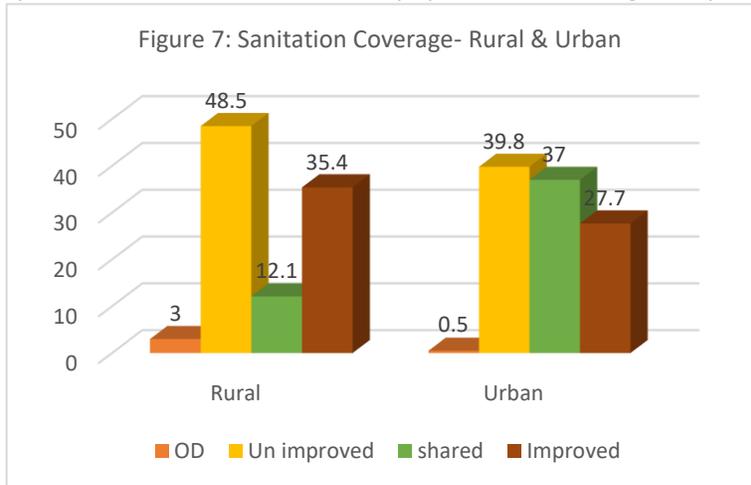


Figure 6: Overall County Sanitation Coverage

Rural Sanitation

The Rural population in Makueni County is estimated to be about 88%. Based on the 2014 KDHS computations, about 3% of the rural population in Makueni is defecating in the open, and a large proportion of both rural and urban population are using unimproved sanitation facilities.



⁴⁶Sanitation Profile for Makueni County , 2017

⁴⁷Sanitation Profile for Makueni County , 2017

⁴⁸ Variables included: timely reporting; budget allocation for sanitation; number of ODF claims; cost per ODF village; economic costs of poor sanitation; latrine coverage for girls; latrine coverage for boys; household improved latrine coverage rate; number of hand washing facilities per school; number of ODF villages (DPHO Certified); percent of ODF targets achieved; and percent of ODF villages

⁴⁹ GOK/MOH, Sanitation Profile for Makueni County 2017; State of Sanitation in Makueni County , 2014

⁵⁰County Public Health Office

To date, only 277 out of 3473 (8%) villages have been certified as ODF⁵¹. However, about 417 have been verified, while about 304 more are claiming ODF⁵². Kibwezi East has the highest number of ODF villages with 154, whereas Kaiti sub County has no village declared ODF yet. KIWASH and World Vision are supporting CLTS in Kibwezi East and Mbooni sub counties respectively hence the high numbers of ODF villages. Resource limitations have hindered acceleration of the CLTS process including verification and Certification processes. Currently, there are only 14-trained ODF certifiers supporting with ODF certification in the entire County. A minimum of 24 ODF certifiers is required to enable acceleration of ODF certification process.

Urban sanitation

About 12% of the population in Makueni County live in areas classified as urban⁵³ with Wote (20,764) and Mtito Andei (13,419) being the major urban centres⁵⁴. Other urban centres of significance are all located along the Mombasa – Nairobi highway namely; Kambu, Machinery, Makindu, Emali, Kiboko, Sultan Hamud, Salama and Malili and have a total population of 39,879, projected to be 45,233 in 2026. In total, the County has a total of 1,165 market centres. There is no urban area in Makueni County with a Centralised sewer system. In the absence of a conventional sewer system, the County collaborated with Nolturesh Water and Sanitation Company to set up a decentralized treatment facility in Sultan Hamud Township. Similar plans for another DTF within Mtito Andei Township are underway through KIMAWASCO (Kibwezi Makindu Water and Sanitation Company). The Makueni County Referral Hospital has a sewer system connected to lagoons⁵⁵ but suffers illegal connections to the main trunks. Majority of the premises and institutions use septic tanks and pit latrines, which are not constructed according to any code or regulation resulting to poor and ineffective waste disposal⁵⁶. The public sanitation facilities in the market places are inadequate and are poorly managed. The high rate of urbanization (11.8%) in Makueni County calls for proper planning for services and infrastructures including sanitation services that will support the large urban population that is expected in a few years.

Table 6: Toilets at Major Urban Centers

Sub County	Number of public toilets
Wote	5
Makindu	2
Kibwezi	1 with 6 compartments
Mtito Andei	1 with 6 compartments
Sultan Hamud	1
Emali	1

⁵¹ Department of Health Services Makueni

⁵² Department of Health Services Makueni

⁵³ Makueni CIDP 2018-2022

⁵⁴Data from the County Statistics Unit in the Department of Finance and Socio-Economic Planning

⁵⁵ BTOR, WB Makueni Mission 25-26 March 2019

⁵⁶ Makueni County Water Policy 2019 (draft)

Sanitation in Health Care Facilities

Makueni County has a total of 325 health care facilities (public 235, Faith Based 28, NGO-4, Private owned 58)⁵⁷. About 80% of the health facilities have WASH facilities (i.e. water supply, latrines and hand-washing facilities)⁵⁸. The rest lack adequate WASH facilities⁵⁹. All the ten (10) Level 4 Hospitals have septic tanks installed for receiving liquid wastes generated from various units. The Makueni County Referral Hospital has a private sewerage system discharging waste into lagoons. The Referral hospital has put efforts towards facility hygiene and cleanliness with hand washing facilities installed at strategic places for use by patients and health care workers. The hospital has outsourced facility-cleaning services for general cleaning and maintenance of the hospital compound. The Hospital has a full time sanitarian (Public Health officer) who advises and supervises general hospital cleaning.



Handwashing Facility at the Makueni County Referral Hospital

Health care Waste Management

Health care waste in Makueni County is inadequately managed. Only the Makueni County Referral hospital and the Makindu Sub-County hospital have incinerators. The County lacks shredding and microwave

machines. The Incinerator at the Makueni County Referral Hospital lacks the capacity to burn high volume waste, and is therefore dedicated to incineration of sharp objects only.

The only burning chamber, is used to burn waste including general and highly infectious waste. The rest of the health facilities



HCW Management -Makueni County Referral Hospital



Incinerator -Makueni County Referral Hospital

⁵⁷ 10 hospitals; 43 Health centers; 182 Dispensaries; 28 Faith based facilities.

⁵⁸County public health office

⁵⁹County Public health Office

transport waste to the nearby facilities for incineration. The County lacks designated vehicles for transportation of hazardous waste. Ordinary vehicles are therefore used putting the communities and Health Care workers at risk of health problems.

Sanitation in Schools

Education is not a devolved function and so counties are only responsible for the Early Childhood Development Centers (ECDCs). Makueni County has approximately 1500 ECDCs (both public and private), 983 primary schools and 381 secondary schools⁶⁰. About 54% of the schools have access to drinking water mainly from roof catchment but some have boreholes⁶¹. On average, sanitation facilities in schools have been provided according to the required ratio⁶², however, inequalities exist amongst schools based on whether the schools are rural or urban, remote or high-end areas, private or public schools.

Table 7: School Latrine Coverage⁶³

	Public primary schools	Private primary schools
Average Pupil to Latrine Ratio for Boys	28:1	19:1
Average Pupil to Latrine Ratio for Girls	24:1	16:1

**National standard of 1 cubicle for every 30 boys; 1 cubicle for every 25 girls*

Vocational Training Centres popularly known as County Technical Training Institutes (CTTIs) in Makueni, have an enrolment of 4460 trainees against a total 185 toilets giving a ration of 1:24. Currently, there is a deficit of 48 toilet blocks. For most institutions, solid waste is disposed by use of compost pits or burning. Liquid waste mainly from dormitory bathrooms and kitchen sinks is drained through soak pits and/or open trenches or at the best is reused to water plants and flowers. Collection bins have been adopted in some of the CTTIs as a means of collecting assorted solid waste materials, which is then burnt or buried.



Solid waste bins for waste segregation in one of the CTTIs in Makueni

⁶⁰ Makueni County Vision 2025

⁶¹ Makueni County Public health Office

⁶² National standard of 1 cubicle for every 30 boys; 1 cubicle for every 25 girls (MoE, School Infrastructure Standards Manual 2010)

⁶³ Ministry of Education, 2014 Basic Education Statistical Booklet: As per the national standard of 1 cubicle for every 30 boys; 1 cubicle for every 25 girls (MoE, School Infrastructure Standards Manual 2010)

Menstrual Hygiene Management (MHM)

Menstrual Hygiene Management is a key component of WASH in schools. The National government under the Kenya National Sanitary Towels programme, through Ministry of Gender has been providing all schools both primary and secondary with sanitary towels⁶⁴. However, the Ministry of Education had not yet received the 2019 batch by the time of this report. In Makueni County, the Department of Health conducts health education on MHM including uses and safe disposal of used sanitary towels. The department also leads in celebrations of MHM day (every 28 May). The current Makueni County First lady is a MHM champion in the country. She chairs the County first lady Association in the country. The association targets about 10 schools in each County with MHM materials.

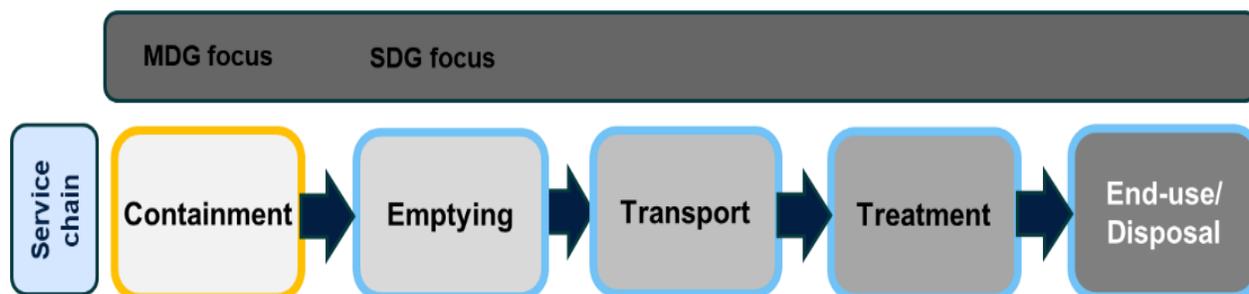
A number of development partners and NGOs are supporting MHM interventions in the County. The Red Cross in particular has supported 3 schools with dignity kits⁶⁵ for both boys and girls from class 6-8. Health education on hygiene and sanitation is provided to pupils before the issuance of the kits. Other NGOs providing MHM education and materials to school -girls in the County include Child fund, Aids HealthCare Foundation, PS Kenya and World Vision.

Faecal sludge management

Kenya is among the many countries in the world that shifted from the Millennium Development Goals to the Sustainable Development Goals in 2015. While the MDGs focused on containment of wastewater and faecal sludge only, the SDGs (Goal 6) aims to ensure sustainable water and sanitation management for all by 2030. This includes access to adequate and equitable sanitation and hygiene for all, and an end to open defecation (Goal 6.2) and improving water quality by halving the proportion of untreated wastewater, and increasing recycling and safe reuse (Goal 6.3). Access to clean water and sanitation is critical and impacts on other indicators including health and economic growth of any country.

To achieve sustainable sanitation services, counties will need to adopt a comprehensive sanitation service chain that would address not only the health of households but also environmental protection. This means proper planning and managing faecal sludge from containment to end use/disposal as illustrated on Figure 8 below.

Figure 8: Components of the Sanitation Service Chain



In Makueni County, faecal sludge from septic tanks is emptied through exhausting. Private companies provide exhausting services as the County government does not have exhausting services. There are no designated faecal disposal sites in Makueni County, the private service providers transport faecal sludge

⁶⁴<http://www.gender.go.ke/sanitary-towels-program/>

⁶⁵ A dignity kit for girls comprises of one-year pack of sanitary towels, tooth paste and brush and bar soap. For boys comprises 3 boxers, tooth paste and brush and bar soap

via trucks and tractor-towed bowsers, which is then emptied in privately managed disposal sites (ground dug pits). This causes pollution and exposes communities to health risks and hazards.

There is ongoing construction of two Decentralised faecal sludge disposal sites (Decentralised Treatment Facilities), in Kibwezi and Sultan owned by KIMAWASCO and Nolturesh Water and Sewerage companies respectively. The Kibwezi faecal sludge treatment plant is 98% complete and it is designed to treat 22m³ per day. The DTF at Sultan Hamud was completed, launched and operated for some time. However, operations have been put on hold due to complain from the surrounding community citing potential nuisance and lack of involvement in the siting of the deposal site⁶⁶.

5.2.3 Solid Waste Situation

Management of solid waste is under the Department of Water, Sanitation, Environment and Climate change. Most Solid waste is generated from the market places. The County has employed a total of 424 casual cleaners to provide daily cleaning services under the supervision of 38 market superintendents. Garbage collection services for both markets and households in the urban areas are provided by the County Government. Currently, the County does not charge for household garbage collection. There are designated transfer points within the market centres where waste is deposited openly.

Solid waste transportation is largely done using open trucks, hand carts wheelbarrows and donkey carts. There are two tractors and a lorry/tipper borrowed from Department of Roads, Transport and Infrastructure, which serves the entire County⁶⁷.

The County lacks effective solid waste transportation and management equipment such as skips and skip loaders. Old handcarts, tractors belonging to the defunct County councils and wheelbarrows are still used to transport waste in the rest of the sub counties. These equipment require regular maintenance to be fully operational. The poor transportation modes have led to littering of waste in the environment. The dumpsites are not designated and are not fenced hence continuous littering in the vicinity.



Off-loading of Solid waste in one of the undesignated sites in Makeni County



Waste disposal site in Wote (undesignated)

⁶⁶ Department of Water, Sanitation, Environment and Climate change

⁶⁷ The two Tractors are based in Kibwezi West & Kibwezi East. The only lorry/tipper serves Makeni sub County (Wote).

There is no landfill and waste is dumped or burnt in an open site. It is not known how much tonnage of solid waste is generated in Makueni County per day. However, plans are underway through The Institute on Social Accountability (TISA) to conduct a County wide solid waste audit for Makueni. None of the dumping sites in Makueni County are designated or licensed by NEMA. The current dumpsite in Wote is located near the banks of the Ndue Nguu stream, posing high health risks to people utilizing the water downstream⁶⁸. The County has plans to relocate the dumpsite. However, identification and purchase of a suitable site is yet to be done.

Garbage collection has not been privatized. However, there are ongoing partnership discussions with private entities such as The Institute of Social Accountability (TISA), cleaning service providers among others.

Table 8: Distribution of casual market cleaners in the major market centers*

Name of Market	No. of Casuals cleaners	Number of litter bins allocated in 2014*
Wote	47	50
Emali	30	30
Makindu	30	30
Kibwezi	20	30
Sultan hamud	15	20
Mtito andei	15	20
Nunguni	15	20
Kikima	15	10
Mukuyuni	10	10

Although garbage bins have been procured and distributed in the various centres, the county lacks a structured mechanism for maintenance and retaining of the garbage bins in the designated transfer points. It is reported that garbage bins have not been replenished since 2014.

5.2.4 Drainage and Storm Water Management

Currently, the County has the conventional open drains type of storm water drainage system. Closed drains are in very few urban centres i.e Wote, Emali, Nunguni, Mtito-Andei and Kibwezi. The Kibwezi town drainage system was developed under the Kibwezi-Kitui road construction project under Kenya National Highway Authority (KeNHA)⁶⁹. Storm water drainage system coverage, in each of these towns is below 20% and is occasioned by blockages⁷⁰. The County has set drainage and storm Water management targets in its 2018-2022 CIDP, targeting 18.5 kilometres coverage by 2022.

⁶⁸ Finding from a field mission to Makueni- 25-26 March 2019 (BTOR)

⁶⁹Kenya National Highway Authority

⁷⁰ Department of Roads, Transport, Energy and Public works

6.0 TECHNOLOGY AND INNOVATIONS IN THE SANITATION SECTOR

A number of sanitation innovations have been introduced and uptake is on is ongoing albeit slow. The USAID/KIWASH program is supporting communities to adopt the SATO pans⁷¹ and SAFI latrine technology⁷². To date, about 560 latrines have been installed with SATO pans and 3 SAFI Toilets have been constructed (1 school and 2 in a health facility) in Kibwezi East sub County. The uptake of both the SATO pans and the SAFI latrines is low due to challenges related to lack of adequate skilled artisans across the County, low awareness of the available technologies, costs of the technology (SATO pan KES 500-800; SAFI latrine is KES 30,000⁷³) and unavailability of construction materials in the local market centres. However, efforts are being made to train artisans and expand this initiative Countywide.



7.0 MONITORING AND EVALUATION FOR SANITATION

The County targets to be ODF by 2020, however only 6.9% of the villages (241 out of 3473) were ODF by the time of this report⁷⁴. The Community Led Total Sanitation (CLTS) monitoring tools (form A-D), monthly MOH 708 and supervision checklist forms are used to track progress of rural sanitation activities. Villages claiming ODF are verified and certified by a team of certifiers and data is then transmitted to the National CLTS hub WASH⁷⁵ (Real Time Monitoring Information System).

Additionally, WASH data is monitored and reported through the community strategy reporting system. i.e MOH 514 and MOH 515 tools. Key indicators tracked under this system are: Number of Households with functional latrines; Number of households using effective methods of treating drinking water; and number of households with hand washing facilities. This data is then transmitted to the DHIS-2 system.

Water supply and urban sanitation sectors in Makueni County have a target to develop sewerage and waste management systems in six (6) urban centers i.e Mtitu Andei; Wote, Nunguni, Emali, Sultan Amund⁷⁶. County WASH targets are monitored through the Service Delivery Unit (SDU) and regularly monitoring by the M&E directorate. It should be noted that the County has not put in place a monitoring and evaluation system that would enable tracking of water and sanitation access progress in accordance to the SDG indicators.

⁷¹Safe Toilet pans: Pan with a self-sealing trap door that closes quickly, seals tightly, and can be fitted to an existing latrine

⁷²The SAFI (Kiswahili for “clean”) latrine. Has concrete walls designed to withstand soil pressure and prevent structures from collapsing. It eliminates smell and flies.

⁷³Makueni County Public Health Office

⁷⁴Makueni CPHO office; <http://wash.health.go.ke/clts/index.jsp>

⁷⁵<http://wash.health.go.ke/clts/index.jsp>

⁷⁶Makueni CIPD 2018-2022

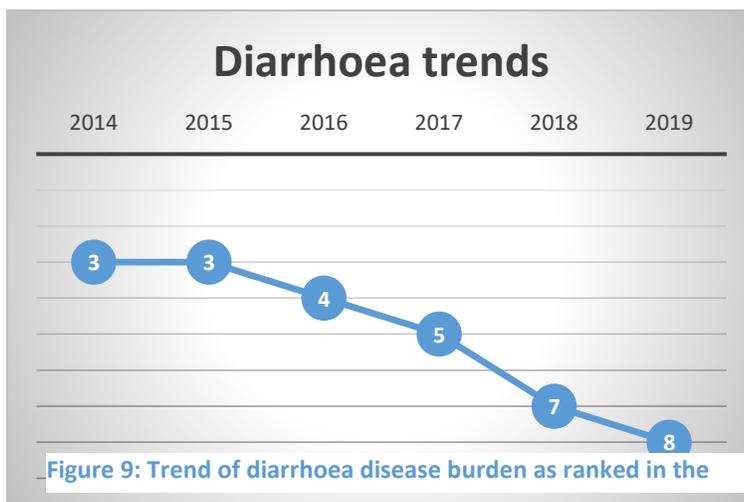
8.0 COORDINATION AND USER PARTICIPATION

Makueni County is one of the counties that is known to have intense community engagements and public participation models on development issues including water and sanitation projects. Public consultations start at the cluster level to the sub ward level, ward level, sub County level up to County level. Community participation is meant to engage stakeholders in the prioritization of needs for planning and budgeting. The sanitation sector in Makueni County does not however have a structured sanitation stakeholder's coordination mechanism. Development partners often meet with their line departments on need basis.

9.0 THE IMPACT OF POOR SANITATION ON HEALTH AND DEVELOPMENT

Diarrhoea

Poor access to Water, sanitation, and hygiene can have a profound effect on health and nutrition. Poor sanitation is linked to diarrhoea diseases, which mostly affects children under the age of five years. In Kenya, diarrhoea is among the top ten morbidity and mortality causing diseases in most counties. In Makueni County, although diarrhoea is ranked among the top 3 diseases between 2014 and 2015, the burden of diarrhoea disease reduced in the years between 2017 and May 2019⁷⁷. The county attributes this to the adoption and implementation of Community Led Total Sanitation activities in the county.



Cholera

The WHO is currently monitoring hygiene related disease outbreaks, including Cholera outbreaks in Kenya. Cholera is endemic in several counties in Kenya, with cases reported annually. Between December 2014 and December 2016 alone, 17,156 cases of cholera were reported in 30 counties, with 85 deaths (Case Fatality Ratio of 1.5%). Between January and April 2019, different cholera outbreak waves were reported in Narok, Kajiado, Nairobi, Garissa and Machakos Counties. However, no cases had been reported in Makueni County since devolution save for one imported case from Nairobi, which was reported in Kikoko Mission Hospital, Kaiti Sub-County in September 2019.

The surveillance unit was however able to investigate and isolate the case in less than 24Hrs with only four close contacts developing Cholera like symptoms.

The September 2019 cholera case

The Makueni County Department of Health has put in place a high sensitive well-structured surveillance system from the County to the village level. A County surveillance coordinator manages the surveillance unit, with sub County disease surveillance coordinators (SCDSC) based at the sub County level. At the health facilities, there are Surveillance focal persons. Community Health Volunteers (CHVs) and other community leaders provide the linkage between the health facility and the community.

⁷⁷Ranking/ position based on the top 10 diseases causing morbidity and mortality County sanitation profiles 2017; report from Department of health Makueni County

Children Stunted Growth

A significant proportion of diarrhoea disease especially among children, contributes to malnutrition through reduction in food intake and decrease in absorption of nutrients. The World Health Organization estimates about 50 % of childhood under nutrition is associated with poor WASH. Nationally about 26% children under five are estimated to be stunted. The prevalence of stunting in Makueni County is at **25.1%**⁷⁸. Stunted children are prone to higher mortality due to infectious diseases such as diarrhoea, pneumonia and measles as well as being more likely to have poorer cognitive and educational outcomes.

Economic Impact

According to the 2014 County sanitation profiles, Makueni County loses **KES 638 million (US\$6.4m) annually** due to poor sanitation. This includes losses due to access time, premature death, health care costs and productivity. This estimate does not include some costs that could be significant (such as water pollution and tourism) and is therefore likely to under-estimate to true cost of poor sanitation⁷⁹.

⁷⁸ Kenya Demographic Health Survey 2014

⁷⁹ Economics of Poor Sanitation in Kenya, WSP (2014)

10. CONCLUSION AND NEXT STEPS

Makueni County has a well-articulated vision to achieve accelerated and inclusive economic growth with access to improved water quality and health services “*Kila nyumba O’kalila*” meaning “**Opportunity for every household**”. This sanitation situation analysis report highlights key policy, institutional, financing and program implementation challenges that will require to be addressed if the County is to achieve its vision 2025 targets that are related to improved water quality and health services. Key highlights have been summarized below:

- Key milestones are being made towards development of Policy and Legal framework for Water supply. However, the County lacks County level policy and legal framework to guide and regulate sanitation services.
- Financing for sanitation has not been prioritised in the County budgeting process. The County depends largely on NGOs and development partners’ support, which is off- budget with very low coverage e.g coverage of 1 to 2 wards in a sub County. The status quo is likely to continue, unless there are changes to ensure sanitation is accorded the attention it deserves including development of an investment plan and provision of a budgeting code. This applies to the both National and County level.
- Capacity in terms of available workforce vis a vis the population coverage in the key departments i.e Department of Health Services and the department of Water Sanitation, Environment and Climate Change is limited.
- With over 65% of the land in Makueni being un-adjudicated, uptake of long-term sanitation solutions among households in the rural and urban settlements may be slowed by the uncertainties that come with investing in land without ownership prove.
- Though there is low Open Defecation (OD) in the County (2.4%), the pace of declaring villages ODF is slowed down by lack of adequate resource allocation to the CLTS process and especially the verification and certification processes.
- Currently there is no urban center with a sewer system in the County and the current fecal sludge management methods are not safe. With the rapidly growing urban population of Makueni County, it is important for the County to begin planning for sanitation infrastructures that will support the growing urban population. As a priority, the County may want to consider accelerating the completion of the already ongoing DTF projects in Kibwezi and Sultan Hamud.
- With only two health facilities having incinerators in the entire County, management of health care waste in the County is a concern. Moreover, the mode of HCW transportation to health facilities with incinerators is not safely managed and therefore poses environmental and human contamination risks.
- Management of general solid waste in Makueni County requires to be prioritised. Currently, solid waste is dumped and burnt in open sites, with risk to water source pollution.

The analysis above, also finds that by recognizing **sanitation** as a link to improved water quality and health, there are solutions available that could accomplish actions aimed at improving access to improved water and sanitation services more efficiently. Implementing a *Countywide Inclusive Sanitation*, specific strategic planning processes will therefore be beneficial for the County. This is a process to move from basic sanitation to safely managed sanitation along the sanitation service chain. The approach will help Makueni adapt sanitation interventions to external factors such as urban development, technological interventions, climatic variability, stakeholder initiatives and available funding, making them easier to implement and more sustainable in the long term.

Next Steps for Makueni County

Following the situation analysis, the next steps for Makueni County would be:

1. Establishment and formalization of multi-sectoral technical steering team and County wide Inclusive Sanitation coordination mechanism
2. Identification, recognition and engagement with the County “Sanitation Champions”.
3. Finalization of the sanitation strategy formulation process (considering the 5- step framework of participatory planning - Who? Why? How?;What for? and Then What?)
4. Development of stakeholders engagement and communication framework
5. Development of an Implementable County Sanitation Action Plan/Strategic investment plan

Annex 1: MACOSAT – Members list

NO.	NAME	DESIGNATION	RESPONSIBILITY
1.	Dr. Patrick Musyoki	C.O – Health services	Co-Chair
2.	Mbenge Mary	C.O – Environment	Co-Chair
3.	Dr. Ndolo Stephen	Director of Medical Services	Secretary
4.	Dr. Kanyange James	Director Health Commodities	Member
5.	David Kiuluku	Director Health Planning	Member
6.	Leonard Mutuku	Director County Administration & Enforcement	Member
7.	Joseph Munyao	Assistant Director Environment	Member
8.	Bii Ngeny	Director Physical planning	Member
9.	Henry M Kivuva	County Public Health Officer	Member
10.	Josephine N. Mwende	MD, WOWASCO	Member
11.	Stephen Mutiso	MD, KIMAWASCO	Member
12.	Samuel Malonza	MD, MBOWASCO	Member
13.	Peter Githinji	Sanitation - Liquid Waste Officer	Member
14.	Alex Nthitu	Sanitation - Solid Waste Coordinator	Member
15.	Elizabeth Katenge	Director Water	Member
16.	Urbanus Mbindyo	Wote Municipal Manager	Member
17.	Jackline Kamusa	EIA Officer	Member
18.	Dan Okeyo	Public Works officer	Member
19.	Dominic Kiwia	Water engineer	Member
20.	Justus Nyangoka	Dept. of Water & Environment	Member
21.	Kelvin Kingoo	EIA Officer	Member
22.	Salome Kamau	Public Health Officer	Member
23.	Sarah Kioko	Education & ICT	Member
24.	Mulonzya Patrick	Gender, Children, Culture and Social Services	Member
25.	Romeo Nguuti	Office of the Governor	Member
26.	Gladys	Quality Assurance and Standards Officer	Member
27.	Joshua Mutua	Compliance and Pollution Officer	Member

Annex 2: Sustainable Development Goals

On 25th September, 2015, the UN member countries adopted a set of goals to end poverty, protect the planet and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years. SDG Goal 6 is set to ensure access to water and sanitation for all (see box below). Sanitation access will also contribute to several of the other SDGs as it improves health and the environment, which in turn leads to improved economic growth, equality and more sustainable cities (see below). School sanitation is an important factor in achieving education for all, especially for girls.

The Sustainable Development Goals. Improved access to sustainable sanitation contributes to the goals in circles



Sustainable Development Goal 6: Ensure access to water and sanitation for all

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity.
- By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.
- By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.
- By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies.
- Support and strengthen the participation of local communities in improving water and sanitation management.

Annex 3: Principles of Countywide Inclusive Sanitation

The concept of Countywide Inclusive Sanitation builds on the principles of Citywide Inclusive Sanitation as defined by the World Bank and partners in their Call to Action, with added emphasis on rural inclusive sanitation:

1. **Everybody benefits** from adequate sanitation service delivery outcomes
2. Human waste is **safely managed** along the whole sanitation service chain
3. Allow for **integrated planning, design and service provision.**
4. **Responsibilities** and service provision mandates are **clearly defined across** the rural-to-urban spectrum to address fragmentation and maximize economies of scale while providing customer-oriented services
5. **Comprehensive approaches** to sanitation improvements needed, with long-term planning, technical innovation, institutional reforms and financial mobilization.
 - A **diversity of technical solutions** is embraced, being adaptive, mixed and incremental.
 - **Effective resource recovery and re-use** is considered
 - Combines **both onsite sanitation and sewerage solutions**, in either **centralized or decentralized systems**, to better respond to realities faced in cities
 - Needs to consider **complementary services: water supply, drainage, greywater, solid waste** and integrate sanitation in other national programs.
6. Counties will need to demonstrate **political will** and technical and managerial **leadership**, and to manage **new and creative ways of funding** sanitation.
7. Emphasize **changing and sustaining behaviours** by empowering communities and engaging multiple stakeholders across different sectors affected by sanitation outcomes
8. **Targeted measures to support the poor and vulnerable** - financial and non-financial
9. Ensure all **gaps of the different market segments are filled** (e.g. rural water supply for agglomerated rural communities and for dispersed rural communities)
10. Bolster the robustness of institutions through **capacity building** of staff.

Annex 4: Situation Analysis Assessment framework

Review of Provision Sanitation Services in Makueni and Turkana Counties

Assessment Framework/Template

Introduction

The assessment framework, has put into consideration themes and indicators that would assist assess the service provision of sanitation services at the County level under the devolved systems as guided by the SOW. To an extent, the assessment framework has been aligned to the GLAAS⁸⁰ Survey themes as well as the SDG6, NGOR commitments and the Sanitation and Water for All framework⁸¹ that promotes effective sector collaboration in the provision of WASH services.

The framework is organized in the following themes:

- a) Background information
- b) Enabling environment
- c) Financing
- d) Existing situation of Water supply, sanitation (of site and on site). Solid waste management and drainage
- e) Monitoring
- f) Coordination mechanisms
- g) Recommendations for improvements

The assessment template will further be used to develop tools/questions for specific audiences of the Key informants interviews i.e. department of public health, Directorate of water , environment, physical/urban planning, roads and transport, social services among others.

⁸⁰UN-Water Global Analysis and Assessment of Sanitation and Drinking-water (GLAAS)

⁸¹ Sanitation and Water for All framework promotes effective sector collaboration in the provision of WASH services

Assessment Framework/Template

Assessment focus	Questions	Data	Source of data(cite documents, reports etc
1. Background information			
<ul style="list-style-type: none"> • Physical and geographic characteristics/features • Political and administrative • Population and demographic • County economy and poverty profile • Housing (typologies and conditions • Settlement patterns (urban, rural, formal/planned informal/unplanned/peri-urban settlements • Land tenure 	<ol style="list-style-type: none"> 1. What are the geographic characteristics/features of this County ? 2. List the Political and administrative units of this County 3. List and describe Population and demographic 4. Describe the County economy and poverty profile 5. Describe the settlement patterns 6. Describe the land tenure issues in the County 7. A map of the County 		
2. Enabling environment for sanitation service delivery			
<ol style="list-style-type: none"> a. Is there an enabling environment for sanitation provision, including policy/institutional/governance, social & environmental, financing, technology etc? b. What is the level of institutionalization and implementation of existing sanitation policies, acts, strategies and ODF-roadmaps for each County 			
Legal and policy framework/ environment	<ol style="list-style-type: none"> 1. Do you have a sanitation policy guideline on sanitation, hygiene and drinking water for this County ? <ol style="list-style-type: none"> a. If yes, does the policy guidelines include institutional WASH? (schools, HCFs i,e IPC, HCW? b. Does the policy, guidelines, plans, targets, address vulnerable groups eg poor, PWD, population living in slums/informal settlements, hard to reach/remote areas IDP/refugees? 2. Do you have sanitation byelaws or regulations governing the Private garbage collectors, waste water, fecal sludge management, re-use and pit emptiers in this County ? 3. Do you have sanitation byelaws or regulationse.g. open defecation, indiscriminate sludge disposal, raw sewage, untreated industrial waste water? See documents 4. Are there governing mechanisms put in place to enforce compliance? 		

	<ol style="list-style-type: none"> 5. Are sanitation and hygiene activities aligned to KESHP 2016 – 20130, vision 2030, presidents big 4 agenda? 6. To what level has the policies/acts been institutionalized/implemented in the County ? 7. Does your County have a County development plan? <ol style="list-style-type: none"> a. If yes, what is the timeframe? b. If yes does the plan address sanitation and drinking water? c. If yes, how is sanitation and drinking water addressed? d. If yes, does the plans include institutional WASH? (schools, HCFs i,e IPC, HCW) e. What is the role of development partners in development of the Water sanitation & Hygiene component of the CIDPs? f. Do development partners align their plans with the CIDPs?. 8. Do you have a County plan for sanitation? 		
Institutional framework	<ol style="list-style-type: none"> 1. Describe the role and responsibilities of each of the department responsible for sanitation (health, water, environment) - 2. Describe the organizational structure of Public Health/water/ environment department 3. Describe the Human resource for Public health/water/environment department in this County . 4. What are the roles and responsibilities of the different levels of personnel in the above organizational structure as pertains to sanitation and hygiene? <ol style="list-style-type: none"> a. Any Overlaps/conflicts /implications 5. Are roles and responsibilities placed according to capacities / skills/ qualifications? <ol style="list-style-type: none"> a. How is Human resources assessed? b. <i>Are there any gaps in capacities etc?</i> c. If yes, what plans does the County government have towards <i>filling the gaps?</i> 6. Describe capacity-building process for Human resource in your department? 		
Financing for sanitation/ Budgetary allocation and expenditure	<ol style="list-style-type: none"> 1. Is there a financing plan for WASH in this County ? 2. Is there a budget line for WASH activities in your County (department- Health, water, environment)? 		

	<ol style="list-style-type: none"> 3. If yes, what was the budget allocation for the last 3 financial years (2018/2019; 2017/2018; 2016; 2017) 4. What is the actual spending and committed? 5. What is the proportion of the allocated amount to the total County budget? 6. Specific activity allocations e.g solid water waste, latrine construction etc 7. What are the sources of funds for WASH activities within the County ? <ul style="list-style-type: none"> • Government or public authority • Exchanger allocations • External sources • On budget funds transferred from donors (grants only) • Off budget funds from NGOs/Donors • Repayable financing <ul style="list-style-type: none"> ○ International public transfer (loans only) ○ Other debts (commercial loans, bonds etc) • Users/HHs <ul style="list-style-type: none"> ○ Tariff (for WSP) ○ For utilities cost recovery are O&M covered by tariffs or by HHs contributions 8. Is there a budget code for sanitation, sewerage, general sanitation? 9. Are there specific measures in financial planning to target the vulnerable groups (poor LIE, IDP/refugees; PWD) 		
Technology	<ol style="list-style-type: none"> 1. What are the available technological innovations in the sanitation sector? <ol style="list-style-type: none"> a. For On- site sanitation, off-site b. ICT 		
<p>3. Existing situation of Water supply, sanitation (off- site and on site) Solid waste management and drainage</p> <ol style="list-style-type: none"> a. What is the current situation? b. How is provision of sanitation services is working under devolution in each of the counties 			
Sanitation profile	<ol style="list-style-type: none"> 1. What are the Public health indicators and their determinants within this County ? 2. Describe the risk factors of morbidity and mortality in this County (Environmental, unsafe water, poor sanitation and hygiene, health care waste). 3. What are the top ten causes of morbidity in this County ? 		

	<ol style="list-style-type: none"> 4. What is the proportion of WASH related diseases among the top ten causes of Morbidity? 5. Which is the burden of WASH related diseases (Cost per year)? 6. What is the current latrine coverage in this County ? 7. What is the current proportion of households with hand washing facilities within this County ? 8. What is the proportion of HH with access to improved sanitation? <ol style="list-style-type: none"> a. What % of HHs is ODF b. What % is connected to sewage 9. What is the proportion of HH with access to improved water services within this County ? <ol style="list-style-type: none"> a. What % is connected to piped water 10. Describe the status of school WASH including MHM 11. Describe the status of WASH in health care facilities 12. Does the County have an existing strategy of dealing with sanitation challenges? 13. Describe the current Public Health interventions within this County (CLTS, UCLTS, Community Strategy e.t.c) 14. How has the County targeted the Marginalized and vulnerable populations eg LIE, PWD 15. are there technologies to address the challenges of the vulnerable populations eg PLW, aged 16. What are the Strengths, Weaknesses, opportunities, and threats existing in the County (SWOT analysis) in relation to Sanitation service provision? 17. Do you have a sewerage network? 18. Do you have designated faecal sludge disposal site 		
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	<p>19. Do you have any land earmarked for construction of sanitation infrastructure (sewerage plants, fecal sludge disposal site, public toilets, solidwaste disposal site)?</p> <p>20. How are exhauster services currently managed?</p>		
Water supply/sources/quality situation	<ol style="list-style-type: none"> 1. Describe the available sources of water within this County 2. What are the possible sources of water pollution within this County ? 3. What are the available/ commonly used water treatment methods at the HH level? 4. Describe the quality of water per various sources within this County (Roof Catchment, Springs, Bore holes, Taps e.t.c) 5. What is the capacity and the state of the utility water treatment plant within this County ? 6. What % is connected to piped water 7. Are there proper guidelines governing the water vendors from the source to the consumer to check the quality? 8. Are there mechanisms put in place to ensure water quality controls and guidelines are adhered to? 9. How has the County targeted the Marginalized and vulnerable populations eg LIE, PWD 10. Are there technologies to address the challenges of the vulnerable populations eg PWD, aged 11. What are the County plans to ensure that there is universal access to water and sanitation by 2030 		
Sanitation situation – sewerage, onsite/offsite	<ol style="list-style-type: none"> 1. What is the proportion of HH / population served by sewerage, onsite / offsite sanitation within this County ? 2. How is the County building and sustaining enabling legal and regulatory environment for safe fecal sludge management? 3. How are the service providers (pit emptiers) regulated and managed? 4. What are gaps in implementation of sanitation and hygiene activities within this County ? 		

	<ol style="list-style-type: none"> 5. Are there plans for future expansion and up scaling of the offsite system? 6. Are the offsite systems well maintained and functional? 7. Is there point water pollution emanating from our existing infrastructures? 		
Drainage/storm water	<ol style="list-style-type: none"> 1. What are the effects of the urban pollution on the County ? 2. Describe the existing storm water drainage system? 3. What is the status of the existing storm water drainage system (Functionality, abuse, blockages, e.t.c) 		
County infrastructure	<ol style="list-style-type: none"> 1. Are there adequate public toilets within County ? 2. Describe the state of the available public toilets within the County ? 3. Are there utility vehicles dedicated to WASH activities? 4. Does the County have adequate infrastructure to provide and monitor water quality? 5. What is the extent of the drainages coverage? 6. How well is the maintenance of the existing drainage coverage? 7. Are there plans for future expansion using better /modern technology? 		
Solid Waste management & Pollution	<ol style="list-style-type: none"> 1. Describe the process of solid waste management in this County (Segregation, storage, transportation & disposal) 2. Is there a land fill for solid waste disposal? 3. Is there PPP in health care waste management? If yes describe. 4. Describe the availability of personnel, equipment & vehicles for solid waste management. 5. Are there special vehicles for transportation of hazardous wastes (Health care wastes)? 6. Describe the capacity for Operation and maintenance of the available HCW shredding and microwave machine. 		
Environment/Climate change and Vulnerability	<ol style="list-style-type: none"> 1. Describe the Climatic Risk factors in this County 2. What are the causes of Environment /Climate change in this County ? 3. Which are the effects of climate change in this County 4. Which are the most viable public health mitigations against climate change 		

	<ol style="list-style-type: none"> 5. Describe the environmental challenges that affect health in this County 6. What is the proportion of the population affected / climatic factors by the above? 7. Describe the geological factors affecting sanitation in this County 8. Describe rainfall and temperature patterns across this County 		
Socio-cultural profile	<ol style="list-style-type: none"> 1. What are some of the Socio-cultural practices affecting sanitation and hygiene in this County ? 2. How has the service provision reached to vulnerable groups eg poor, PWD, population living in slums/informal settlements, hard to reach/remote areas IDP/refugees? social inclusion as pertains to sanitation within in this County ? <ol style="list-style-type: none"> a. Any social inclusion strategies/plans? 3. Gender mainstreaming in sanitation service provision (urban, rural) 		
4. Monitoring and Evaluation of sanitation interventions			
WASH targets	<ol style="list-style-type: none"> 1. Has the County set any sanitation targets for: <ol style="list-style-type: none"> a. Rural sanitation? Eg attainment of ODF, improved sanitation, b. Urban sanitation Sewerage connection; c. water supply connections? d. Hygiene – Handwashing, access to MHM materials e. WASH in schools f. WASH in health facilities 2. How are the targets monitored? 3. What is the progress towards achieving the targets? 		
M&E of sanitation service provision	<ol style="list-style-type: none"> 1. Describe how M&E is carried out for Onsite sanitation, Off-site sanitation 2. Who does M&E <ol style="list-style-type: none"> a. What are the gaps if any? 3. Do you have agreed monitoring indicators for water and sanitation? 4. Which tools are used for off-site, on site sanitation? 5. How does the County track provision of services to the vulnerable groups (poor, IDP/refugees; PWD etc) 6. How is data disseminated? 7. How is this data used for decision making? 8. How does the County work with the national government in the management of data? 9. Who provides capacity building for M&E? 		

	<p>10. Is there a functional Management Information System (MIS) in the County ?</p> <p>11. Is there a mechanism to validate accuracy of data reported?</p>		
<p>5. Coordination /Collaborative behavior/ mutual accountability in provision of sanitation services</p> <p>a. How are services delivered? Is there collaborative behavior between different partners and the County ? documentation of on-going and planned sanitation initiatives both by public and non-governmental and private organizations and drawing good practices and lessons from such initiatives</p>			
Stakeholder analysis	<p>1. which are the ministries/national institutions/non-governmental stakeholders with responsibilities in sanitation sector?</p> <p>2. list key responsibility for each, based on the following areas:</p> <p style="margin-left: 40px;">a. <i>governing/setting regulations;</i></p> <p style="margin-left: 40px;">b. <i>providing service (including planning, financing, and operating);</i></p> <p style="margin-left: 40px;">c. <i>monitoring and surveillance</i></p> <p>mention if they have the LEAD, CONTRIBUTE or NO RESPONSIBILITY</p> <p>3. Which are the development partners providing water and sanitation services?</p> <p>4. What is the role of each partner in water and sanitation in the County ?</p>		
Ongoing Interventions:	<p>1. What are the on-going/and planned sanitation interventions by:</p> <p style="margin-left: 40px;">a. public/County government (water, sanitation, solid waste, drainage and storm water management, environment/climate change?</p> <p style="margin-left: 40px;">b. development partners (NGOs)</p> <p style="margin-left: 40px;">c. private sector (profit making)</p>		
Coordination mechanism- Coordination between actors:	<p>1. Does a mechanism exist to coordinate the work of different ministries, institutions, and organizations with responsibilities for WASH (water, sanitation, hygiene, health, education, environment, agriculture, public works)?</p> <p style="margin-left: 40px;">a. If yes, is it FORMAL, INFORMAL DEVELOPING, DOES NOT EXIST.</p> <p>2. What is the role of a stakeholder’s coordination forum if it exists?</p> <p>3. Who are the stakeholders (government ministries, development partners, donors)?</p> <p>4. How often does the mechanism meet?</p> <p>5. Are there joint planning reviews for WASH in the County ?</p> <p>6. Is there a budget allocation for coordination mechanism?</p>		

	<ol style="list-style-type: none"> 7. Is there a mutual accountability mechanism in place? 8. Have you established a coordination Hub for water and sanitation activities eg the CLTS hub 		
Community and User participation	<ol style="list-style-type: none"> 1. Are there defined procedures in law for public participation by HHs/communities? 2. How is budget for public participation allocated? 		
6. Recommendations for improvement What are the practical and workable approaches for the County to: (i) reach ODF status; (ii) achieve their sanitation targets?			
Suggestions for achieving attaining ODF status; achieve their sanitation targets	<ol style="list-style-type: none"> 1. Provide your County context in terms of ending open defecation <ul style="list-style-type: none"> • Is the CLTS protocol sufficient in terms of addressing challenges of open defecation free • How can we FastTrack achievement of ODF bearing in mind that we are almost in 2020. • What will you do differently, to declare your County open defecation free by 2020 2. What needs to be done to achieve the targets in sewerage coverage? 		

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Annex 5: Baseline Sustainability Development Goals

(Indicators and targets- work in Progress by the Makueni team)

Indicator	Indicator description	Countywide baseline (2019) for Makueni County	Comments
6.1.1	Proportion of population using safely managed drinking water services	***%	Combined value for rural, peri urban and urban areas
6.2.1.	Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water	***%	Combined value for rural, peri urban and urban areas
6.3.1	Proportion of wastewater safely treated	***%	Estimate based on FSDs to be prepared for zone
6.3.2	Proportion of bodies of water with good ambient water quality	***%	
6.4.1	Change of water use efficiency over time	N/A	Current (2019) estimate of the use of existing capacity which can be used as the baseline to measure change
6.4.2	Level of water stress: freshwater withdrawal as a proportion of available freshwater resources	***%	Based on the installed capacity of ground water abstraction facilities compared with sustainable yield
6.5.1	Degree of integrated water resources management implementation (0-100)	***%	Storm water management, aquifer recharge, re-use and demand management interventions are low priority at this stage
6.5.2	Proportion of transboundary basin area with an operational arrangement for water cooperation	***%	Working agreements for Nol Turesh, Thwake and other systems not in yet place
6.6.1	Change in the extent of water-related ecosystems over time	N/A	Baseline information not available. Hydrological resources are under the jurisdiction of TAWSB. Results of monitoring to be shared.
6.A.1	Amount of water and sanitation related official development assistance that is part of a government coordinated spending plan	***%	Non-governmental funding not coordinated through the treasury has been quite active during the and private sector funding is not consistent
6.B.1	Proportion of local administrative units with established and operational policies and procedures for participation of local	***%	Percentage of sub-County and wards with policies enforced and executed.

<i>Indicator</i>	Indicator description	Countywide baseline (2019) for Makeni County	Comments
	communities in water and sanitation management		

