



Work programme

# Increasing Financial Flows for Urban Sanitation

Case study

Nairobi, Kenya

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Abbreviations

AFD	Agence Française de Développement
AWSB	Athi Water Services Board
KFW	Kredit fuer Wiederaufbau
NCWSC	Nairobi City Water and Sewerage Company
WASREB	Water Services Regulatory Board
WB	World Bank
WSTF	Water Services Trust Fund
MDG	Millennium Development Goals
SDG	Sustainable Development Goals
KPI	Key Performance Indicators
PPP	Public Private Partnership
NWMP	Nairobi Water Master Plan
KESSHP	
KESSF	

## 1 Introduction

The World Water Council officially launched the project “Increasing Financial Flows for Sanitation”, under the “Cities: At the heart of growth” Task Force’s work plan.

The project aims at identifying the most appropriate financial mechanisms that could better support the development of the sanitation sector of cities around the world, with the purpose of raising awareness about innovative financing instruments to increase sanitation provisions and of involving more actors in the national sanitation financing plans.

Under the guidance of a coordinating consultant, eight national consultants are developing the analysis for the eight cities selected as case studies, of which Nairobi is one.

## 2 Background of Kenya

### 2.1 Socio-political and economic data

Kenya is among the lower-middle income country in sub-Saharan Africa and is located in East Africa. It has a population of 48.6 million people, a GDP of USD 70.529 Billion and a GNI per capita of USD 1,380 (World Bank, 2016). The national population growth rate was 2.6% but urban areas grew at 5.2%. Based on the national population census of 2009, the urban population was approximately 30% and it was estimated to grow to 45% in 2015 and 54% in 2030 (GoK, 2010; GoK, 2015). At national level, the access to improved water stood at 63% while access to improved sanitation was much lower at 30% (World Bank, 2016). Within the last 10 years, the country has experienced an average annual growth rate of 5% while ranking fairly high compared to the neighboring countries in terms of human development index. However, Kenya has high poverty rates observed in the arid and semi-arid regions which account for 80% of the land mass and 20% of the total population. The main contributor to Kenya’s economy is the service sector accounting for close to 60% of the annual gross domestic product followed by the agricultural sector which accounts for 29% of the annual gross domestic product. In 2015/2016 financial year, the annual budget stood at 2.1 trillion Kenya shillings which was a 17% increase from the previous year, the largest budget in Kenya’s history. This budget was largely anchored on economic growth and sustainable development with a key focus on food security, agriculture, and transport infrastructure and water security.

Kenya has been going through rapid social, political and economic changes in the last fifteen years. Devolution remains the biggest gain from the August 2010 constitution, which ushered in a new political and economic governance system that has strengthened accountability and public service delivery at local levels. From 2010, Kenya has two levels of governance namely: National Government and County Government. The rights of Kenyan citizens as well as the functions of national and county government are stipulated in the constitution. With regard to sanitation, the constitution states:

- I. Article 42: Every person has the right to a clean and healthy environment.
- II. Article 43 (1) (b): Every person has the right to accessible and adequate housing, and to reasonable standards of sanitation;
- III. Fourth Schedule Part 2 states the functions of the County government as:
  - Section 2: County health services, including, in particular (a) county health facilities and pharmacies; are a function of the county.

- Section 8: Planning and development, including housing
- Section 11: County public works and services, including (a) storm water management systems in built-up areas; and (b) water and sanitation

## 2.2 National level data on water and sanitation

In the Millennium Development Goals (MDGs) era, Kenya had committed to reduce the proportion of the population without access to improved sanitation by 63% by 2015. By the end of 2015, Kenya was off target with regard to the MDG goal for sanitation. The coverage with improved sanitation was only 31% by June 2015. Sewerage coverage was at 15% in 2014/2015 in the areas served by Water Service Providers (WSP) against a target of 40% (Impact 2016). To meet universal access to sanitation by 2040, Kenya needs to increase the acceleration rate from the current 0.75% per year to 3.5% per year. An even higher level of acceleration is needed if the goal of universal access is to be achieved by 2030. This calls for substantial investments in water supply and sanitation (WSS) infrastructure for both rehabilitation of existing infrastructure and expansion into non-served areas. Although Kenya has the largest economy in East Africa, in terms of access to improved sanitation, it lags behind Burundi and Rwanda but does better than Tanzania and Uganda especially in rural areas (Table 1).

Table 1 Status of four East African countries towards attaining the MDG on sanitation

Country	Year	Use of sanitation facilities (%)					
		Urban		Rural		Total	
		Improved	Unimproved	Improved	Unimproved	Improved	Unimproved
Burundi	1990	31	69	42	58	42	58
	2015	44	56	49	51	48	52
Kenya	1990	27	73	24	76	25	75
	2015	31	69	30	70	30	70
Rwanda	1990	61	39	32	68	33	67
	2015	59	41	63	37	62	38
Uganda	1990	28	72	11	89	13	87
	2015	29	71	17	83	19	81
Tanzania	1990	6	94	7	93	7	93
	2015	31	69	8	92	16	84

Source: UNICEF (June 2015)

Kenya loses an estimated US\$324 million annually or 1% of GDP due to poor sanitation (KESHP, 2016). This translates to; (1) 21 million Kenyans use unsanitary or shared latrines (2) 5.6 million have no latrine at all and defecate in the open and (3) the poorest quintile is 270 times more likely to practice open defecation than the richest. Open defecation alone costs Kenya US\$88 million per year, yet eliminating the practice would require less than 1.2 million latrines to be built and used. The urban population in Kenya account for close to a third of the total population. The urban centers in Kenya are characterized by high populations, poor infrastructure, lack of planning and only less than 10 towns have sewerage

infrastructure and good wastewater treatment systems. Water supply and sanitation is characterized by low levels of access in both the urban and rural areas, this is exacerbated by the seasonal variations in water supply across majority of the urban centers that rely on surface water. According to the Joint monitoring programme (JMP) for water supply and sanitation in 2015, two thirds of Kenyans (82% in urban areas and 57% in rural areas) had access to improved drinking water sources. However, JMP data also reports a 10% decline in access to improved water sources in urban areas between 1990 and 2016. On sanitation, the JMP estimates a third of the Kenya population (31% in urban and 30% in rural) have access to improved sanitation including sewerage. The Water Services Regulatory Board report of 2015 did not report on access to sanitation in the broad sense but estimated 1 in every 6 people in the urban areas have access to sewerage services.

The total number of people lacking access to improved water services in 2016 is estimated, by most reports, to be 17 million people while the total number of people lacking access to sanitation is estimated to be 32 Million people. These statistics show large populations with poor or without access to environmental sanitation and hygiene which are a pertinent link to health and socio-economic development at both the household level and nationally. Poor access to sanitation in Kenya is largely driven by societal, policy, structural and systematic challenges within the institutions responsible for sanitation services, i.e., ministry of health and its partner the ministry of water and irrigation. These challenges include; poor perception of sanitation, Low sanitation priority in the national development agenda, Low public investment in sanitation, Institutional fragmentation, Inadequate multi-sectoral coordination mechanisms, Inadequate information management system, Low sanitation and hygiene awareness, Insufficient institutional operational and technical capacity, Inadequate appropriate technology solutions, Weak research and development systems and Cultural beliefs and practices among others.

### 2.3 Institutional responsibility for sanitation at national and county level

The institutional framework of the WASH sector in Kenya has undergone significant changes in the last 10 years. In 2010, Kenya signed in a new constitution that advocated for decentralization of the national government to 47 County governments across the whole country. Services in the water sector, health, agriculture, among other sectors, have been decentralized since then. The fourth schedule part II Articles 2(c) through to 2(g) and 11(a) and (b) of the new constitution of Kenya devolved the sanitation functions and services to the county governments while the national government continues with the responsibility for national policy, training, capacity building, technical assistance and formulation of standards. Given these changes in the governance, policy and the service delivery environment, the 2007 National Environmental Sanitation and Hygiene Policy (GoK, 2017) had to be reviewed leading to the formation of a new sanitation Policy, the Kenya Environmental Sanitation and Hygiene Policy 2016-2030, KESHP (GoK, 2016).

The new sanitation policy (KESHP) agenda is to direct the country's movement towards achieving universal access to improved sanitation and clean and healthy environment culminating in better health, dignity, social well-being and quality of life for all the people of Kenya by 2030. This new policy recognizes the devolution of the sanitation services while taking the rights based approach. It also heavily advocates for an increased public and private sector investments through public-private partnerships to enable realization of its goals. The policy further provides clarity on the roles and responsibilities of the stakeholders and agencies involved in the sanitation sector, i.e., the roles of the County and National government in service provision and providing an enabling environment for Public Private Partnerships (PPPs). It

further addresses the institutional fragmentation and financial bottlenecks for sanitation by formation of the National Environmental Sanitation Coordination and Regulatory Authority (NESCRA) and the National Sanitation Fund (NSF).

The institutional setup for sanitation at national and county level is as follows:

At the national level, the ministry of health leads as far as planning, coordination, policy formulation and regulation of health services is concerned. The health ministry has many subdivisions; sanitation falls within the department of preventive and promotive health under public health and environmental health. Other national ministries dealing with water and environment have sanitation roles as well. The ministry of water has staff at the national level who deal with policy issues. Following the Water Act 2002 (GoK, 2002) the following organizations under the Ministry of Water were created: The Water Service Boards, the Water Service Providers and Water Services Regulatory Board. The Water Service Boards develop bulk water and sewerage infrastructure while the Water Service providers manage the infrastructure leased from the Water Service Boards. Under the environment line ministry is the National Environmental Management Authority NEMA. NEMA was established under the Environmental Management and Coordination Act (EMCA) of 1999 as the overarching national institution dealing with environmental policy formulation and enforcement. At the County level there are also ministries dealing with health, water and environment. The Physical Planning office at the County level is very crucial in ensuring planning integrates sanitation facilities alongside other works.

The challenges arising from this setup are:

- There is a dispersion of human resource capacities and financial resources among the different institutions so that it becomes difficult to assign responsibilities and to monitor activities that are contributing to improved sanitation. The ministry of health has strength in public health and hygiene while the ministry of water has strength in planning and design of sewerage services and onsite-sanitation. These two ministries do not seem to be coordinated in a way that would speed up the growth of improved sanitation access.
- Some of the roles e.g. policy formulation, implementation and regulation are duplicated.
- There is poor monitoring of sanitation services provision by water utilities. Whilst WASREB is supposed to monitor performance of water and sewerage, its role in monitoring sewerage services has lagged behind that of water supply services.
- Failure of the physical planning departments at the county to enforce regulations that facilitate development of sanitation facilities has contributed to reduced access to improved sanitation especially where on-site facilities are the main solution.

#### 2.4 National and county level financing mechanisms for water and sanitation

The fifth strategy of the KESHP focuses on financing sanitation in Kenya and obligates the national and county governments as well as the municipal authorities to establish enabling and sustainable financing mechanisms for sanitation services and development and to make yearly budgetary provisions with timely release for the implementation of sanitation plans, programmes, activities, services and functions. The private sector, communities and all individuals are equally encouraged and mobilized to contribute towards funding hygiene and sanitation services. The policy recognizes the major constraints in the provision of sustainable sanitation services to be the low levels of funds allocated to the



sanitation sector, the non-economic tariffs charged for sanitation services as well as low revenues collected by urban service providers such as Nairobi City Water and Sewerage Company Limited. Another part of the problem in financing sanitation is linked to high priorities given to fundraising finances for water and little to none for sanitation and hygiene.

The key sources of sanitation funding and investment in Kenya consist of the private sector, public sector, civil society organizations, development partners, communities and households. The sanitation financing approach that Kenya currently is implementing is comprised of three key approaches;

1. Sector wide sanitation financing: this comprises of sourcing for funds from all sectors of the economy including individual households. These funds will go to remedy the current deteriorating sanitation incrementally matching the population growth.
2. Cost Sharing: this spells out a cost sharing arrangement moderated by the Intergovernmental Budget and Economic Council between the national and county governments on financing capital investments in sewerage, on-site sanitation, storm and waste water management both in peri-urban, slums and informal settlements.
3. Cost Recovery: this comprises of direct cost recovery where the private sector service providers participating are allowed to charge full commercial price covering all operating costs for sanitation service as long as it is feasible. In the case where this is not feasible, then the County government shall subsidise the full cost of providing sanitation services from additional revenues generated in other sanitation services, Constituency Development Funds, Equalisation Funds among other streams of finances.

From the NCWSC 2014-2019 Strategic plan, the water company requires an estimated Ksh 42 billion to implement the strategic plan. Wastewater management is allocated approximately 40% of this budget. The company planned to raise the bulk of these funds through revenues from water and sewerage services and the balance from PPPs and development partners. The PPPs will generate funds for secondary and tertiary sewer reticulation.

Kenya National Water Development Report 2006, MoWI)

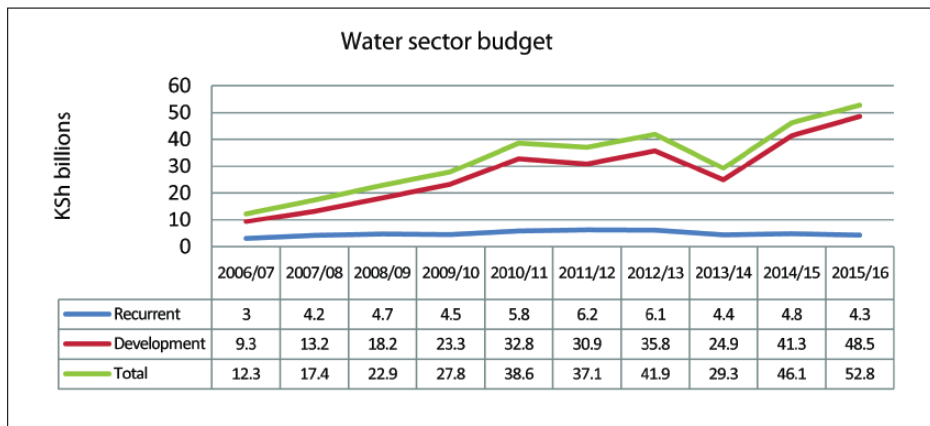
Annual water Sector Review 2016:

The funding to the water sector increased from just under KES 1.0 billion in 1998 to almost 8 Billion in 2004 (GoK 2006). From the most current annual water sector review report (GoK, 2016), the Water Services Trust Fund WSTF has reached over 2,500,000 people with safe water supply and over 350,000 people with improved sanitation since 2008. This shows that on average for every ten people supported by WSTF to access safe water, only one person gets access to improved sanitation. The received actual budget for the water sector for the financial year (FY) 2014/15, at national level, was KSh 31.80 billion (development: KSh 28 billion and recurrent: KSh 3.80 billion). The received actual budget for the water sector at the national level in 2015/16 was KSh 33.55 billion (development: KSh 29.50 billion and recurrent KSh 4.05 billion). In FY 2014/15, KSh 10 billion was received from development partners and KSh 18 from the Government of Kenya (GoK). In FY 2015/16, KSh 27.4 billion came from development partners and KSh 6 billion from GoK. More GoK funds were received in 2014/15 because of the transfer of irrigation development to the ministry responsible for water. Funds received by the sector as loans amounted to KSh 8.3 billion while grants amounted to KSh 1.7 billion in FY 2014/15. These funds were KSh 22.4 billion and KSh 5.0 billion, respectively, in FY 2015/16. Internally-generated funds

within the sector were about KSh 3.6 billion in FY 2014/15 and about KSh 3.2 billion in FY 2015/16. Thus the total water sector investment in 2014/2015 at national level was approximately KSh 28 billion, which is about 10% of the required annual sector investment as per the Sector Investment Plan (SIP) of May 2014. The total water sector investment budget in 2015/16 was KSh 29.5 billion, which is about 10% of the required annual investment. A big financing gap still exists in the annual development budgets for the water sector. This requires urgent, innovative, resource mobilisation strategies. If it is not bridged rapidly, the sector may not achieve its Vision 2030 objective for universal access. Customers can contribute to the full cost of providing water services in urban areas so long as the services provided are reliable, affordable and of good quality. Operating costs can also be fully covered by consumers in rural areas to increase sector self-financing.

The budgets for the water sector at the national level grew continuously from 2006/07 to 2015/16 during implementation of the reforms. The budgets showed a significant drop in 2013/2014 because some funds were transferred to the counties for devolved functions (figure 3.1). No accurate statistics are available to show the budget growth with regard to the water sector at county level and in CSOs. Tracking of budgetary expenditure at County level needs to be improved so that investments to different sectors can be accounted for. At the same time, the expenditures by civil society organizations in the water and sanitation sector need to be monitored.

**Figure 3.1: Growth in original sector budget from 2006/07 to 2015/16**



Source: GoK (2016) Annual water sector review 2014/2015-2015/2016

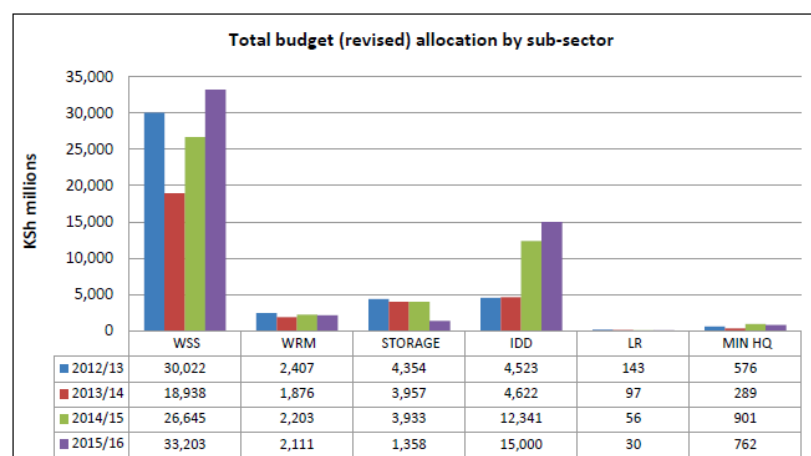
The current investment level is only about 10% of the required annual investment.

**Table 3.1: Required investment as per SIP**

Sub-Sector	Required investment (KSh millions)	
	2014/2015	2015/16
Water supply and sewerage services	58,099	64,784
On-site sanitation systems and services	66,898	68,868
Water resources	112,813	116,141
Land reclamation, drainage and irrigation	31,985	32,623
Sector management	3,641	3,722
Total required investment	273,436	286,138

Source: GoK (2016) Annual water sector review 2014/2015-2015/2016

**Figure 3.10: Total budget (revised) allocation by sub-sector from 2012/13 to 2015/16**



Source: GoK (2016) Annual water sector review 2014/2015-2015/2016

## 2.5 Awareness about circular economy

Circular economy in sanitation in Kenya is fairly known in Nairobi but it's not yet mature in terms of uptake. This is evident from when one looks at the shit flow diagrams for a number of counties in Kenya. These shit flow diagrams are generally comprised of 4 stages namely; containment, emptying, transport and treatment phases. For example, in Nairobi County there are at least two existing shit flow paths; the sewered section of Nairobi ends up with a treatment system that thereafter returns the treated waste water back into the environment. This system only serves at least 45% of the population, leaving slightly more than half of the population relying on either a system that terminates at the containment phase or a lack of a sanitation system all together. In a circular economy, one expects to see entrepreneurial innovations after the emptying phase of the shit flow diagram; these innovations may convert waste into other products of economic value such as fertilizer. In Nairobi, Sanergy is one of the few examples of a private company that collects waste from pit latrines in the urban slums of the city and safely converts it to fertilizers for sell to farmers. This model has however been

faced with challenges of financial sustainability and currently requires a better business model to grow to scale. More is discussed about this in section XXX below.

### 3 Background of Nairobi City

#### 3.1 Social, political and economic data

What is the importance of the city? The population and its annual growth rate and related to other cities? What is Nairobi's contribution to national economy? What makes Nairobi non-typical of other cities in Kenya and region? Any special characteristics of Nairobi County that might make it non-typical of other Counties in the country?

Nairobi is the capital city of Kenya and it contributes significantly to Kenya's economy. The population of Nairobi stood at 3.1 million during the 2009 national census and was estimated at 3.9 Million in 2017. A report published in 2015 and ranking the 47 Counties in Kenya on wealth basis put Nairobi at the eighth position. It had the highest contribution to the national GDP at 13% and its per capita wealth was estimated at USD 1,081 (World Bank, 2015). The contribution to national GDP was however much lower than the 60% stated in an earlier brief (CSUDP, 2013). The water and sewerage services are provided by Nairobi City Water and Sewerage Company (NCWSC). NCWSC was incorporated in December 2003 and appointed by Athi Water Service Board (AWSB) as its agent in providing water and sewerage services within the city of Nairobi. It is one of the 84 regulated public utilities in Kenya and has the highest annual turnover of Ksh 7,175 Billion. Its non-revenue water stands at 38%. (WSRB, 2016). After the Constitution of Kenya 2010, NCWSC became wholly owned by the County Government of Nairobi (ESAWAS 2015). There are unresolved issues with AWSB and Nairobi County Government laying claim of ownership of assets.

#### 3.2 Sanitation in the city

According to the WASREB's Impact Report 2016, the population of Nairobi City was 3,9 Million in 2016. The area of the city is 695 km<sup>2</sup> giving a population density of 5600 persons/km<sup>2</sup>. The population increased by almost four times between 1979 and 2009; it rose from 0.8 million to 3.1 million.

Two thirds of Nairobi's population lives in slums with poor access to clean drinking water and a sewerage system among other services (APHRC, 2014). This number continues to grow as more people migrate from their rural homes to the city. A similar picture is observed in other cities in Kenya with urban population growth and little to no improvements in water services, health services, sanitation services and infrastructural constraints. Nairobi City loses KES 1.7 Billion each year due to poor sanitation. This includes loses due to poor access time, premature death, health care costs and productivity (WSP, 2014).

About 80% of the population in Nairobi is supplied by Nairobi Water Company while 46% is covered by sewer infrastructure. The total water connections in April 2017 were 293,446 while the total connections to sewer were 204,842. From January to March 2017, 3,123 new connections were added; out of these 2,542 had sewer connections. The classification of customers is based on consumption rather than type of consumer (high consumers -- >100 units/month, low consumers (Mbugua Pers. Com, 2017). Compared to the information given by Nairobi Water

Company, the Impact Report 2016 gives a much higher number of total active and inactive connections of 564,834 of which 93% were active. The poverty rate in Nairobi County is 21% and is considered to be the most significant predictor of open defecation after controlling for unimproved water supply and population density (Njuguna and Muruka, 2017).

NCWSC uses an increasing block tariff for water and sewerage services are charged at 75% of the water bill for all customers with a sewer connection. Those with no water connection but are connected to the sewer system pay a flat rate of Ksh. 200 per month (USD \$2/month). The average tariff of water is Ksh 53/m<sup>3</sup> (WSRB, 2016). Those with septic tank system incur an estimated cost of approximately Ksh. 4,000 – 5,000 for emptying by NCWSC exhauster trucks while sewer connection charges range from Ksh. 5,000 to 15,000 depending on user (domestic, commercial, and industrial). The private exhausters are allowed to discharge the sewage collected from users into the sewer system managed by NCWSC at a cost of Ksh. 15,000 per truck per month. The revenue collected from water and sewerage services has grown from KSh 5,613 Billion in 2010/2011 to KES 7,175 Billion in 2015/2016 (WSRB, 2012, 2016). Over the same period the sewerage coverage, based on proportion of city population served, has grown from 35% to 48%. The coverage of O&M costs was reported as 169%, 104% and 157% in 2006/2007, 2010/2011 and 2014/2015 respectively (WSRB, 2008; 2012; 2016).

Table X below summary of sanitation coverage in Nairobi City and institutions within the city.

Table X Summary statistics on sanitation coverage in Nairobi City

	Total	Per cent coverage	Data Source
Total Population in Nairobi	3,138,369		KNBS Census 2009
Number of households	985,016		KNBS Census 2009
Population covered by sewer network in absolute values and as percentage of total population as per 2009 census	1,379,059	45%	Own GIS analysis, NCWSC interview, WSRB (2016)
Total connections for water by April 2017	293,446		NCWSC interview
Total number of sewer connections in April 2017 in absolute values and as percentage of total water connections	204,842	70%	NCWSC interview
Population living in informal settlements		60-70%	APHRC (2014)
Population practicing open defecation		< 1 %	WSP and MoH 2014, Njuguna and Muruka (2017)
Population with improved sanitation		47%	WSP 2014
Population with unimproved sanitation		12%	WSP 2014
Population with shared sanitation facility		40%	WSP 2014
Number of Schools in Nairobi	1254		Kenya Open data
Number of Schools Sewered	611	49%	Own GIS assessment

Number of County Public Health Facilities in 2014	81		Nairobi County Government Website
Public ECD Centres and Primary Schools	225		Nairobi County Government Website
Public Secondary Schools	225		Estimated
Private Secondary Schools	109		Nairobi County Government Website
Number of Health Centres Sewered	50	56%	Own GIS analysis
Number of Market Centres	45		Nairobi City County Government Website
Population in Informal Settlements	512,350		NCWSC GIS data and Own GIS analysis
Number of Ablution blocks in Informal Settlements	789		NCWSC GIS data and Own GIS analysis

Water and Sanitation Program and Ministry of Health 2014

Breaking down sanitation access by type of facility, we see that over one third of the population use traditional pit latrines while 1 in 10 have a septic tank. Those with septic tanks are characterized by high standards of living and are more likely to be private homes. This data is summarized in the table below.

Type of sanitation facility	Proportion of population
A. Sewer connection (cistern or pour flush toilet connected to sewer, shared or not shared)	45%
B. Septic tank (with or without regular emptying by vacuum trucks, shared or not shared)	10%
C. Improved Pit latrine (with or without regular emptying of faecal sludge to sewer by vacuum trucks, shared or not shared)	3%
D. Open defecation	< 1%
E. Traditional Pit latrine (with or without regular emptying of faecal sludge to sewer, shared or not shared)	38%
F. Public ablution blocks (some with biogas digester)	< 1%
G. Urine Diverting Dry Toilets or in short UDDTs (with separate containers for faeces and urine which is collected and for fertilizer production at an off-site factory (operated by Sanergy)	< 1%

H. Peepoo (a biodegradable, single use slim bag containing urea which kills pathogens in human waste). After use the bag is deposited at a collection centre and composting is done off-site. This is a project in Kibera slums that has an unproven business model.	< 1 %
I. Sequencing-Batch-Reactor (SBR) Wastewater Treatment Plants – these are suitable for households where wastewater generation is not continuous. The units take in wastewater and release clear water that can be use for gardening and other similar functions that require low quality water. Sludge is also a by-product that has to be removed regularly. It can be used for agriculture or forestry.	< 1 %

Source: KNBS 2009

Some households with flush toilets may also have a pit latrine for use during periods with no water supply. Some cistern flush toilets become pour flush toilets when there is no flowing water. For shared facilities this presents some health concerns as the flushing may not be regular. Reduced water for flushing also causes clogging of the sewers.

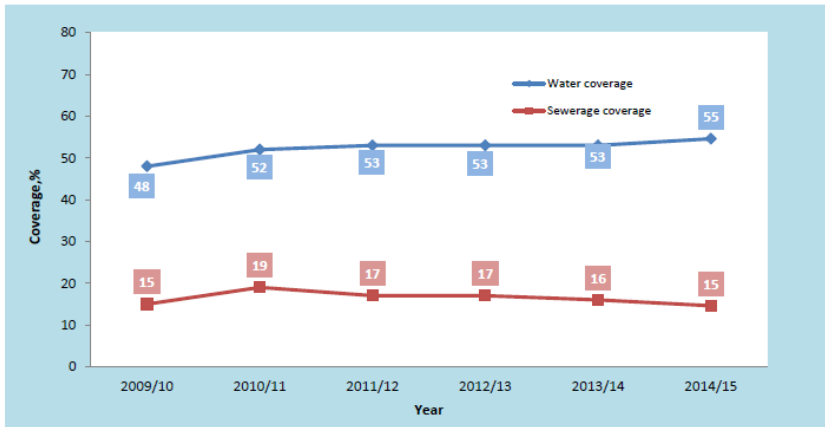
There is need to find out how many households use traditional pit latrines, improved pit latrines and septic tanks and the growth rates of the three types of sanitation in areas that are not sewerred. Enforcement of the physical planning and public health regulations plays a vital role in ensuring that private developers invest in the best option among the three.

#### National Trend

In Nairobi’s informal settlements, households using flush toilets increased from 7.3 percent in 2000 to 46.2 percent in 2012; that notwithstanding, this is far below 82.0 percent of households in the rest of Nairobi who use flush toilets. The use of traditional pit latrines decreased from 78.8 percent to 44.0 percent between the two surveys (APHRC, 2014).

The sanitation coverage as reported by 86 utilities in urban and urbanizing areas that are monitored by WASREB has been declining over the last six years (Impact 2016). It was only 15% in 2016.

Figure 2.1: Trend in Water and Sewerage Coverage



Trend in water and Sanitation coverage in 86 urban utilities in Kenya that are monitored by WASREB (Source: Impact 2016)

In the National Water Master Plan (NWMP, 2013), 95 out of the 215 urban centres are to have sewer systems by 2030. This plan will cost Ksh 476.5 Billion plus an additional Ksh 25 billion for sewerage maintenance. In the Athi Catchment Area (ACA) where Nairobi is located, the development strategy is to rehabilitate and expand existing sewerage system for the 25 Utility Companies, construct new sewerage systems in 19 Utility companies that have no systems. On-site sanitation facilities will also be improved outside sewerage service area. Table x compares the sanitation situation in 2010 with that of 2030 (NWMP, 2013) for Athi Catchment Area. The capacity of the sewerage system is expected to reach 1.4 million m<sup>3</sup> to serve a population of 16 million, while on-site sanitation facilities will serve a population of 4.3 million. For Nairobi City, which is the largest urban centre in ACA, the service population is projected to be 6,085,297 by 2030 and the sewerage capacity was to be increased from 152,000 m<sup>3</sup>/day in 2010 to 568,367 m<sup>3</sup>/day in 2030.

Table x Sanitation situation in 2030 in the Athi Catchment Area

Items		Sewerage System	On-site sanitation facilities
Service Population (million)	2010	2.15	6.95
	2030	16.26	4.28
Required treatment capacity (m <sup>3</sup> /day)	2010	244,000	-----
	2030	1,389,000	-----
Operating body		Registered Water Service Providers	Individual, Community, etc
Target town areas		25 Urban Centres	10

The Athi Water Services Board (AWSB) is mandated to plan, develop and expand bulk water and sewerage infrastructure within its area, which includes Nairobi City. In its 2012-2017 Strategic plan, a budget of Ksh 72 Billion was foreseen. AWSB planned to extend trunk sewers within Nairobi and in the metropolitan area around Nairobi City. They also aimed to expand the Dandora Wastewater Treatment Plant by 40,000 m<sup>3</sup>/day, to prepare national water and sewerage development plans and to develop a sewerage master plan for Nairobi Metropolis by 2014. In the medium



term the financing would come from lease fees from the Water Service providers like NCWSC, Government grants, concessionary loans from development partners such as ADB, AFB, WB, KFW and EU. In the transition period it hoped to increase funds from the private sector and in the long-term to achieve financial sustainability through innovative financing mechanism such as infrastructure bonds, private equity placement and public-private partnerships. It also

In the 2012-2017 strategic planning period, AWSB hoped to increase its revenue by 5% through tariff restructuring, introduction of bulk water tariffs, generation of income from energy from hydropower and wastewater treatment plant in Dandora. It also planned to raise the Ksh 72 billion from the national and county government, the private sector, development banks, Capital Markets and Project Finance.

### 3.3 Financing of sanitation in the city

The Kenya Environmental Sanitation and Hygiene Policy (KESHP, 2016) lists three funding streams for sanitation and hygiene in Kenya.

- Funds from Treasury transferred to the Ministry of Health or the Water Service Boards.
- Funds from donors transferred to Ministry of Health or Ministry of Water via various mechanisms.
- Off-budget funding – these are not effectively captured as part of national or county budgets. These could include private funds or funds coming to communities through NGOs.

Kenya has allocated 0.2% of GDP to sanitation; this falls below the global target of 0.9% (KNSHP, 2016). In 2010, Kenya's expenditure on water and sanitation was 0.86% of GDP compared to 1.10% in 2010.

Table x: Analysis of financing mechanisms for different sanitation systems

Sanitation facility	Owner / Operator	How are O&M costs covered?	How are CAPEX covered?
Wastewater treatment plant	County Government	NCWSC from tariffs of water and sewerage services	AWSB from Grants/ Loans / GoK (taxes and transfers)
Trunk sewer	County Government	NCWSC from tariffs of water and sewerage services	AWSB from Grants/ Loans / GoK (taxes and transfers)
Lateral sewer lines	County Government	NCWSC from tariffs of water and sewerage services	NCWSC from tariffs of water and sewerage services
In-house flush toilet connected to central sewer	Private owner	Own funds	Own funds

Public ablation blocks in informal settlements and CBD	NCWSC	Tariffs paid by users	Tariffs
Toilets connected to septic tanks and pit latrines in private residences	Private owner	Own funds	Own funds
Toilets connected to septic tanks and latrines in private and public institutions	Private / GoK / County Government	Private and public funds	Private and public funds
Vacuum trucks	Private owner NCWSC	Own funds Tariffs	Own funds Tariffs

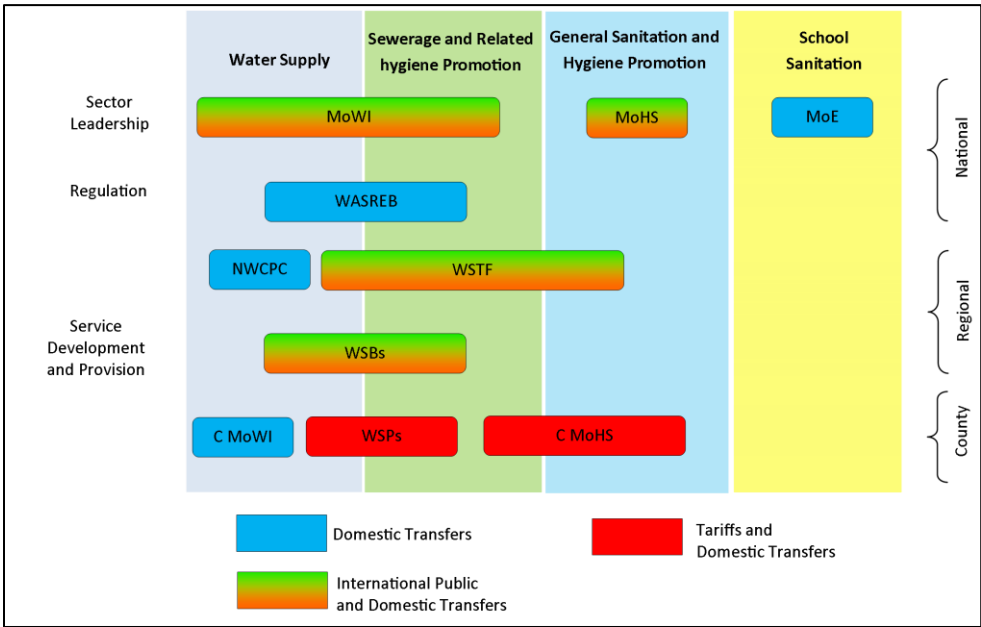


Figure 1 Institutional Financing Mechanisms of WASH in Kenya

### 3.4 Institutional and policy aspects

#### Centralized sewerage services

The maintenance and expansion of the centralized sewerage system in Nairobi is a responsibility shared between Athi Water Services Board (AWSB) and Nairobi City Water and Sewerage Company (NCWSC). In its mandate, AWSB states that it is the owner and custodian of water and sewerage assets in Nairobi City and is responsible for infrastructure planning, development and expansion. Thus it plans and mobilizes funds for development of trunk sewers within the city. The AWSB is financed from government budget allocations, subsidies, grants and charitable contributions. AWSB is expected to prepare ten-year capital works plan which includes detailed investment strategy and financing plan. The investments in capital works are recovered from NCWSC from the tariffs paid by the customers. NCWSC is expected to operate and maintain the water and sewerage infrastructure leased from AWSB. The finances come from the water and sewerage fees collected from its customers. To ensure this happens smoothly, an agreement is signed between AWSB and NCWSC in which the lease fees to be paid by NCWSC to AWSB are articulated. However, there has been a misunderstanding between the Nairobi City County Government and the AWSB regarding the ownership of the assets which formerly belonged to the Nairobi City Council before the 2010 constitutional reform.

In its 2012-2017 Strategic Plan of AWSB, a budget of Ksh 72 Billion was foreseen in the medium-term and long-term. In the medium term, AWSB planned to finance itself from lease fees from water service providers, the national government, development partners and private investors. For the long term AWSB hoped to achieve financial sustainability by innovating new financing models to mobilize funds for infrastructure development and expansion. This would be done by raising money from the private sector through infrastructure bonds, equity financing and Public-Private-Partnerships. It is unlikely that AWSB will achieve financial sustainability within the 2015-2017 strategic plan period given that this goal was also in the 2007-2012 strategic plan.

Therefore AWSB makes decisions about the technical types of infrastructure needed to expand sewerage infrastructure and how to mobilize resources for this development. In deciding what sewerage infrastructure is needed in Nairobi City, the engineers in AWSB are expected to work in consultation with those in NCWSC and agree on what needs to be prioritized. This does not always work well. There are obvious power games and AWSB assumes superiority over NCWSC. Also AWSB tends to prioritize development of trunk sewers without due attention to the development of laterals needed to allow the consumers access the sewer network. This task of developing the laterals is assumed to be a responsibility that NCWSC can bear but the financial resources to do this are not always sufficient. In some areas, trunk sewers have been developed but no plan was put in place to lay out laterals that can be accessed by the developers. Such infrastructure remains unused and does not generate revenue. However the funds used for their development have to be recovered. This is one area where private investors could be encouraged to fill the financing gap. Meanwhile private investors who want to have their buildings occupied develop their own on-site facilities. The total cost of individual investments in most cases is higher than what the collective solution would have cost. Also standards are

sometimes compromised due to challenges in enforcing environmental and public health regulations and the environment is polluted.

AWSB decides makes decisions on how to finance infrastructure development. It does this in consultation with the major stakeholders namely: central government, county government and NCWSC. The consultation with NCWSC is crucial because the payments for loans spent to finance these developments is passed over to the water company and ultimately to the consumer.

The Water Act 2002 created new institutions in the water sector with the aim of separating the functions of coordination and policy formulation, water and sewerage services provision, water resources management and regulation. The Water Act 2002 also aimed to create financially efficient water companies that could attract funding from government, development agencies and the private sector. The Water Services Regulatory Board (WASREB) role is to issue licenses to Water Service Boards and determine the standards of services to consumers. The Water Service Boards in turn contract and license the Water Service Providers with the consent of WASREB. The Water Service Boards were created to plan, develop and expand water and sewerage infrastructure. WASREB gives guidelines and standards and approves appropriate tariffs for water and sewerage services provision.

The Water Act 2016 recognizes the devolved government with separate functions for the national and the county government. As per the Kenya Constitution (2010), the County Government now has the responsibility to deliver water and sewerage services to the County. WASREB still has the mandate to license and regulate water and sewerage service providers nationwide. The Water Act 2016 allows the WASREB to impose a sewerage services levy on water services to cover a reasonable part of the cost of disposing wastewater. With the approval of WASREB, the water utility company may withhold a portion of the levy and set it aside for expansion of the sewerage system. This is one measure that was introduced to ensure that expansion of sewerage services is not neglected in favour of water services.

The Kenya Constitution 2010 guarantees every Kenyan the right to basic sanitation and a clean and healthy environment. The Kenya Vision 2030 envisions universal access to improved sanitation by 2030. Kenya is also committed to achieving ODF status and access to improved sanitation for all in line with the international Sustainable Development Goals.

The Kenya Environmental Sanitation and Hygiene Policy (KESHP) of 2016-2030 provides broad guidelines towards achievement of universal access to improved sanitation by 2030. This includes measures to achieve ODF status by 2030, meeting the MDG goals that were missed, and increasing public investments to sanitation and hygiene from 0.2% to at least 0.5% by 2020 and 0.9% of the GDP by 2030. The interventions set out in the policy include scaling up access to sanitation in urban areas, fostering private sector investments in sanitation, building governance and leadership capacity for sanitation, building enabling legal and regulatory environment and strengthening monitoring and evaluation systems for the sanitation sector.

The Kenya Environmental Sanitation and Hygiene Strategic Framework (KESFF) of 2016-2020 is the implementation instrument of KESHP. KESHP aims to tackle the financial, policy and structural challenges that led to the

underperformance of the sanitation sector in the MDG era. Some of the strategic interventions of KESHP are scaling up sustainable access to improved sanitation in rural and urban areas, promoting private sector participation and sanitation marketing, ensuring sustainable sanitation financing and building an enabling legal and regulatory environment for sanitation. Under the KESHP, high quality standards of sanitation products and services will be promoted, a National Sanitation Fund will be set up, advocacy for increased public sector investments to sanitation will be done, private sector financing for households, utilities and small-scale independent service providers will be promoted. A resource mobilization strategy would also be developed.

One of the weak areas that affect provision of sanitation services is the failure of the county governments to enforce regulations on buildings and other physical infrastructure that needs sanitation services. In some cases, development plans that are supposed to incorporate plans for sanitation end up being approved or constructed without complying to the building regulations.

The financing towards county public works is weak and the money allocated to sanitation services is low. The budget towards Nairobi County public works transport and infrastructure in 2015/2016 was USD 74 million (25% of total County Budget) and 80% of it targeted maintenance of existing infrastructure and not development of new infrastructure. Sewerage was not targeted at all. This could be due to the fact that Nairobi Water Company is perceived as having adequate resources to maintain and expand sewer network.

There are some sanitation-related projects going on in the city that provide evidence that principles of the circular economy have been accepted in the city. Some of these are:

- The Sanergy model – This is a private company that operates UDDTs in the informal settlements of Nairobi. Urine and faecal sludge are deposited in two separate containers which are then collected every day and transported to a central facility for the production of fertilizers, energy and insect-based animal feeds. These toilets are franchised to members of the community who operate them as a business. Users pay about Ksh 5 per use. This company started in 2011 and is financed through a venture capital initiative. The toilet owners get a 12-24 month interest-free loan from a microfinance institution to purchase a unit for USD 500.
- Umande Trust, a Kenyan NGO has installed communal ablution blocks equipped with flush toilets and shower cubicles in Kibera slums. Human waste is fed to a biodigester to produce methane gas which is sold to the residents or used in communal kitchens. Residents pay Ksh 5 to use the bathrooms or the toilets and Ksh 10 to cook in the communal kitchen. The faecal sludge from the biodigester is composted for use in agriculture. Some of these so called biocentres are located in schools and other public areas.
- Elikham Systems is a local company that installs (sequencing batch reactor (SBR) units to residential homes and rented apartment blocks. These SBR units treat wastewater and recover clear water for reuse in gardening. These SBR units are best suited to high end residential areas.
- Peepoo (a biodegradable, single use slim bag containing urea which kills pathogens in human waste). After use the bag is deposited at a collection centre and composting is done off-site. This is a project in Kibera slums that has an unproven business model.
- There has been discussions on the possibility of generating methane gas from the wastewater treatment plants in Nairobi.

These initiatives can be scaled up. The Sanergy model has the potential to become a self sustaining business outfit once the develop markets for the fertilizer generated from the production units. The SBR units installed by Elikham could be promoted by giving subsidies and tax-discounts to people who invest in such systems.

## 4 Analysis

### 4.1 Major financing gaps and obstacles to urban sanitation

The investments in the water sector averaged Ksh 20 billion in the last three years against a budget of KSh 300 billion required annually (WB, 2015). The Annual Water Sector Review of 2016 gives a total investment requirement of Ksh 273 and 286 for 2014/2015 and 2015/2016 financial year. The budget over the same period was KSh 46 and 53 billion indicating a huge budget shortfall. The National Water Master Plan of 2014 shows that the investments required for rehabilitation and expansion of sewerage to achieve 2030 goals is Ksh 477 billion and the available government budget is only Ksh 31 billion.

The main sources of funds for WSS in Kenya are

1. Budgetary allocations
2. Equalization Fund
3. Decentralized funds (from the Counties)
4. Donor funds (either through treasury or directly to Projects)
5. WSS Development Funds (WSTF)
6. Consumer Tariffs and contributions

The gap in the financing of the water sector can be closed by

- Reducing the costs
- Increasing the revenue
- Improving the enabling environment to attract new financing

The challenges to financing urban sanitation

- The low public budget allocation to sanitation both at national level and at county level – This has been a problem in the past but hopefully with the new government commitment to increase the funding to 0.9% of the GDP, this problem will be sorted.
- Limited involvement of the private sector in financing sanitation services
- Lack of a dedicated budget for sanitation at national and county level – this problem needs to be addressed so that there is transparency and accountability in the way funds are allocated and utilized.
- Lack of clear performance targets focusing on sanitation for urban water utilities – the performance measures and reporting mechanisms have a heavy focus on water and very little on sanitation. The national regulator has not developed sufficient tools to hold water utilities to account with regard to delivery of sanitation services.

- Lack of a clear mechanism to plan, coordinate and account for the total financing for sanitation that comes through the different public, private and NGOs channels – currently the funding for sanitation is channeled through the line ministries of health, water, environment and public works at national and county levels, the national environmental management authority (NEMA), various NGOs and the private sector.
- Bigger focus on sanitation software rather than hardware – most of the actors in sanitation sector have tended to spend human and financial resources in software rather than hardware. This may be due to the fact that it is easier to meet performance targets and account for funds spent when one pursues software rather than hardware options to the sanitation problem.
- Inadequate enforcement of physical planning regulations – the private sector would have been more committed to develop improved sanitation facilities and to set aside adequate land for sanitation infrastructure if the legal and regulatory requirements with regard to development of land in the city had been better enforced.
- The lack of a sanitation and hygiene investment plan has been lacking due to lack of expertise within the sector.
- Legal and regulatory environment is not conducive to allow the needed level of investments in sanitation – the devolution process that started in 2010 brought a huge need to develop new policies, strategies, laws, regulation and institutions at the two levels of government. We have made considerable progress in the seven years but this flurry of activity has meant that a lot of things still need to be fine-tuned to respond to the needs of the sector. For instance, the role of sanitation services delivery falls heavily on the counties but so far, the counties have not adequately appreciated the full weight of this obligation. There is need to develop a coherent legislative and regulatory framework to enable counties and national government meet the national and international goals regarding sanitation. To this end KESSF recommends enactment of a National Environmental Health and Sanitation Bill and a National Environmental Sanitation Coordinating and Regulatory Authority (NESCRA). Among the proposed roles of NESCRA is to provide leadership in the sanitation sector, coordinate stakeholders, issue licenses to sanitation service providers, develop service provision standards and monitor compliance, develop tariff guidelines for sanitation service providers. However some of these roles are perhaps better handled by WASREB.
- Unclear institutional roles and responsibilities – we have several institutions under the line ministries of health, water, environment whose roles and responsibilities are unclear; there gaps and overlaps and power struggles. For instance the role of NEMA and WASREB in regulating effluent discharge and standards of wastewater treatment; the role of Water Service Boards, Water Service Providers and County Governments in asset ownership, asset management, infrastructure development, maintenance and financing is highly contested; the role of the ministry of health and ministry of water in policy formulation and coordination and implementation of strategies cannot pass unchallenged – the engineers who do the planning, design and supervision of sanitation facilities are in the water ministry whereas the ministry of health has been given the lead role on matters of sanitation.

#### 4.2 The future of AWSB in achieving Nairobi City's sanitation goals

The future of AWSB and its engagement with Nairobi City Water and Sewerage Company does not look very good. Even in the past, the relationship between AWSB and NCWSC has always been strained. The general feeling among NCWSC

management is that AWSB feels they are superior to NCWSC and they tend to bulldoze their way during project design and implementation. Even though the Water Act 2002 gave AWSB the mandate of asset ownership, the handover of assets from the former Nairobi City Council was not fully done and with devolved government, the City government has renewed its claim on the assets. Secondly there is a general feeling that AWSB should not continue to borrow money for water and sewerage infrastructure development and push the burden of paying the loans to NCWSC. On the other hand AWSB feels that NCWSC is badly managed; it has over-employed and productivity of staff is low. AWSB feels the water utility could be more profitable and hence more creditworthy if only it reduced its staff and pushed for increased productivity alongside other measures to control wasteful expenditure. AWSB argues that with better financial management, more resources would be available to expand sewerage facilities in the city. The NCWSC is supposed to be independent and free from political interference by the County Government. As the County government seeks to strengthen its claim on the assets, AWSB will have to focus on development of large cross-county water and sewerage projects. Most likely, the greater emphasis of AWSB on water will continue and fewer and fewer resources will target sewerage.

On its own, NCWSC feels they do not have sufficient funds for large infrastructure projects and they blame this on the low water tariffs which are regulated by WSRB. The burden of expanding sewerage seems not to be owned by either NCWSC or AWSB.

AWSB will take a long time to achieve their well meaning goals. This is due to financial and capacity constraints as well as the institutional challenges mentioned above. The area of operation of AWSB is very large, their budget is limited and they have a history of poor performance. The WSRB holds water services providers to account and water utilities are expected to monitor their performance and write quarterly reports to be submitted to WSRB. Apart from Kenya National Audit Office (KENAO) which does financial audits of all publicly funded bodies, there is no other body that regulates performance of AWSB. WSRB is supposed to regulate Water Service Boards but it is not clear how it does that apart from monitoring of the operation of agreements between Water Services Boards (WSBs) and Water Service Providers (WSPs). So it is highly likely that AWSB will fail to meet their goals and not be held accountable.

The greatest hindrance from the government side has been the leadership of the county. In Nairobi as well as in other Counties, financial governance has been very poor. Now that the county has a very optimistic governor, we can only hope that some of the sanitation challenges in the county will be resolved quickly by the county government but maybe not the AWSB.

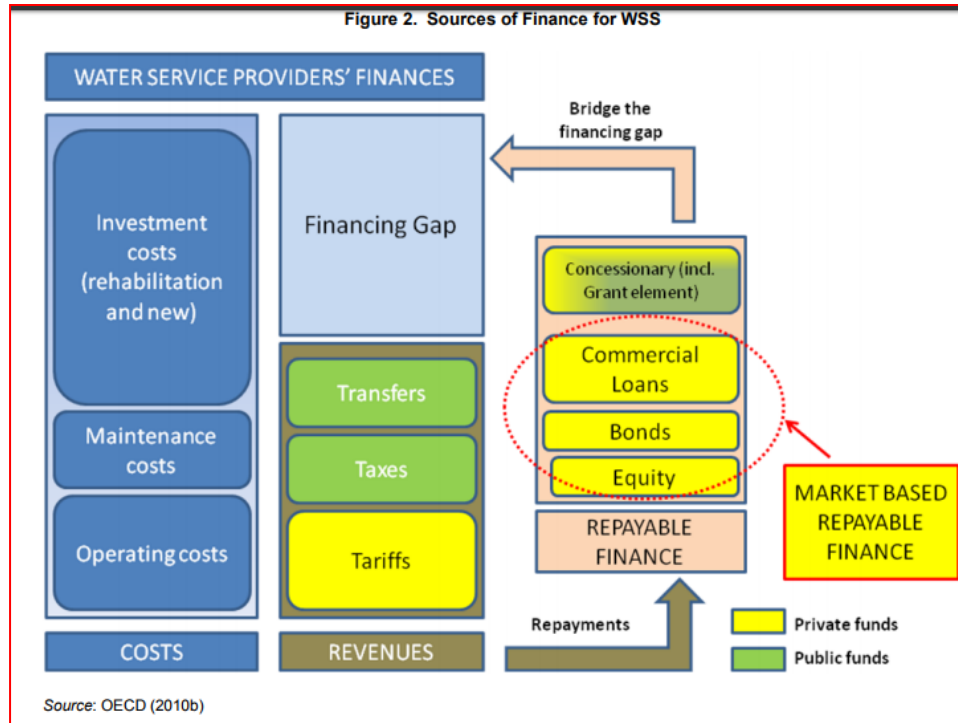
There needs to be discussions on how AWSB, NCWSC and the national government will cooperate to ensure responsibilities are shared, finances are set aside and monitoring and evaluation is done if sanitation is to move forward. But this is not only for Nairobi but for all other urban centres in Kenya.

#### 4.3 Innovative mechanisms to increase financing to sanitation

Some innovative financing mechanisms:



1. PPP - Contractual arrangements, including service contracts, management contracts, lease contracts, concession contracts, BOT (build, own, transfer) contracts. The Northern Collector Water Tunnel is one example of a water project that is being implemented as a PPP.
2. Commercial Loans - Water companies access commercial loans for infrastructure development. Because sewerage infrastructure does not attract as much revenue as water infrastructure, it may be more difficult to develop a bankable sanitation proposal compared. The World Bank has developed a toolkit that can guide WSPs looking for commercial loans.
3. WSTF Results-Based Financing RBF - The projects to be implemented by the water utilities are pre-financed with commercial loans from domestic lenders in Kenya on market terms. These projects can be for construction/expansion of water and sewer networks to reach unserved consumers, rehabilitation/improvement of existing networks, water and/or sewer connections to households and public points, water and sewer treatment facilities. After completion of their projects, the water utilities are incentivised through applying one-off subsidies provided under the RBF sub-programmes for up to 60% under the World Bank's OBA and up to 50% under the KfW's AoD programmes. The challenge with this scheme is that utilities are more likely to utilize the loans for water services where costs can be recovered easily compared to sanitation services.
4. Microfinancing for household sanitation facilities: The centralized sewerage system covers only 30% of the area of Nairobi County and much less if one considers the metropolitan areas. The chances of expanding this system are low. The unserved areas will have to rely on on-site sanitation. Households find challenges in accessing financing for the recommended sanitation facilities. This encourages construction of low quality facilities that pollute the environment or even open defecation. There is need to establish a microfinance loan scheme that supports households to develop quality sanitation facilities. The same approach of results-based financing for water utilities could be used whereby individual households could apply for subsidies once their facilities are approved by public health or NEMA.
5. Household level sanitation services providers are few and not adequately regulated. They also have challenges accessing finances for business development. There is need to encourage more players in this space by providing capacity building, business loans and regulation of services provided to customers. Currently NEMA is supposed to visit all new building sites and approve sanitation facilities. But NEMA does not have enough staff to undertake these tasks. These sanitation service providers could be licensed and approved by NEMA or Ministry of Health and given mandate to offer services to their clients and facilitate their certification by NEMA.



6. The programme Upscaling Basic Sanitation for the Urban Poor (UBSUP) which is implemented by the Water Services Trust Fund and financed by the Bill and Melinda Gates Foundation, KfW and in kind contributions and technical support from GIZ has been running successfully from 2011. The goal of UBSUP is to improve the living conditions of the urban poor by offering access to sustainable plot level sanitation for up to 800,000 and to safe water for up to 200,000 residents of urban low income areas in Kenya. It works across the entire sanitation service chain. The project consists of a technical component (that provides capacity building, advisory services, monitoring and reporting, standardization) and a financial and up-scaling component that provides subsidies for plot level sanitation facilities. It also supports private sector to develop business around sanitation such as exhausting services. It works with the water service providers to develop decentralized treatment plants in urban areas. From the experiences of UBSUP we learn that small-scale private entrepreneurs have the capacity to actively participate in the provision of basic sanitation to the urban low income areas. UBSUP is a good approach but will need to be tweaked to fit Nairobi City which is a complex urban centre with a huge population therefore requiring huge investments to create significant impact. The budget for UBSUP (Euro 18.4 Million = Ksh 2.2 Billion from 2011 to 2018) is very small compared to what is needed to achieve the Vision 2030 sustainable development goals on sanitation. And most of the budget will be used in software not hardware. We can only hope to learn from the model.

Some lessons from UBSUP that can be applied to Nairobi:

- (i) There is willingness to pay for sanitation services even among the poor. This means that entrepreneurs could invest in pay-toilets in areas where these are rare.
- (ii) UBSUP works best through existing institutions. Water utilities like NCWSC could implement the project with the funding from WSTF.

- (iii) There needs to be a national body that holds utilities to account. With the current setup of UBSUP, WSRB, NEMA and Public health are involved in promoting sanitation and hygiene, setting standards, monitoring.
- (iv) The adoption of improved sanitation grows faster where an attempt is made to enforce regulations such as the Public Health act and the Physical Planning Act. This means a combination of incentives.
- (v) A range of options for collection, transport, treatment and reuse of wastewater needs to be offered to fit the different socioeconomic and cultural conditions especially in complex urban settings such as Nairobi.
- (vi) The challenge of acquiring land for decentralized wastewater treatment plants raises the cost of such facilities. Urban centres need to secure land in newly developed areas in advance before the costs escalate.

#### 4.4 Policy and institutional changes needed to enhance sanitation financing

The KESHP 2016-2030 and the KESSF 2016-2020 have clearly articulated the institutional challenges that hampered the flow of finances to sanitation and proposed some changes to tackle some of these challenges. These changes include:

- The enactment of a National Environmental Health and Sanitation Bill
- The establishment of a National Environmental Sanitation Coordinating and Regulatory Authority (NESCRA).
- The establishment of a National Sanitation Fund (NASF) to mobilize sanitation funds from government, development partners and the private sector.

The PPP Policy 2011 articulates the government commitment to public-private-partnerships. The PPP Act 2013 provides for the participation of the private sector in financing the development and maintenance of infrastructure through concessions or other contractual arrangements and the establishment of institutions to guide and regulate this process.

The Water Act 2016 has also just come into force after a lengthy stakeholder driven consultative process. Under this Act, Water Service Providers may enter into a PPP arrangement with a private entity to carry out some or all of its functions.

In view of these very recent policy and institutional reforms, there are adequate measures in place to create an environment that allows increased financial flows to sanitation. What is needed now it to implement the actions that have been proposed in the policy documents and monitor how they impact on sanitation service delivery.

#### 4.5 Chances that sanitation will receive more finances in the future

With the government's commitment to enhance public expenditure to sanitation to reach 0.9% of the GDP, it is highly likely that sanitation will receive more finances in the future. The PPP Policy and Act also pave the way for greater engagement of the private sector in bridging the financing gap. The SDG has introduced more stringent measures

towards monitoring and evaluation and these are likely to contribute to greater accountability in the use of financial resources. The proposed legal, regulatory and institutional arrangements are poised to inject new life into the sanitation space. There are also active programmes to make Kenya ODF by 2020.

Kenya's GDP in 2016 was USD 70.53 billion. If goal of setting aside the equivalent of 0.9% of GDP towards sanitation is met, that would be USD 0.63 billion or USD 633 million or KSh 63 Billion. Given that the budget required to achieve 2030 sanitation goals is Ksh 477 Billion in 15 years or Ksh 32 Billion per year, then the 2030 commitments would be achieved if the investment is raised to 0.9% of GDP. However there are many sectors that need additional government funding such as free primary and secondary education (free secondary education could cost up to Ksh 100 billion per year), agriculture (there is a AU led goal to commit 10% of GDP to agriculture and Kenya has not achieved this) and health. Given that the government scores more through free secondary education, agriculture and health than through sanitation, we will most likely see a scenario where these sectors receive more funds while sanitation receives less attention. Sanitation is housed in the health sector but this sector has very broad mandates and the role of improved sanitation in reducing the disease burden and improving productivity of other sectors has not been properly articulated. Within the Ministry of Health, the WASH department is very small.

Evaluating the cost-benefit of investing in sanitation may help. One could for instance assess the return on investment for sanitation facilities and use this information to appeal to the decision makers.

#### 4.6 Potential areas of intervention

- Given the growth of the sewerage coverage from 33% to 45% over last 10 years, it looks that the growth in sewerage coverage will stagnate at around 50% due to challenges such as financing, lack of land to build new infrastructure to reach new areas of settlement and lack of momentum to overhaul existing sewerage network. It is therefore imperative that any intervention focuses on the 50% of the population that will be living and doing business in the unsewered areas of the city and its environs. There is need to promote business opportunities towards provision of quality sanitation services in these areas. Support towards regulation and enforcement and high engineering standards for sanitation facilities is also needed. These services also need to be cost effective. There should be a focus on environmental protection, recovery of nutrients for agriculture, recovery of bioenergy, recovery of water, and minimal use of water for sanitation. Nairobi is going to be facing a serious water crisis going forward due to population increase and weather extremes.
- The reporting of the performance of the water and sewerage companies has been improving since the first WASREB report in 2008 and the most recent one in 2016. These reports are available at <http://www.wasreb.go.ke/impact-reports>. We note that the reporting on sanitation or sewerage services is weak. It is difficult to establish how the sewerage arm is performing and impossible to delink it from the water services. If these companies have to continue under names 'water and sewerage', there is need to develop performance indicators for the sewerage arm of their mandate and to ensure companies start

collecting the relevant data and report on it. We also note that earlier reports did not report on revenue collected and this has now become standard practice in recent reports. Perhaps it is possible to separate revenue and expenditure from water and sewerage services as well going forward. It should also be clear whether utility companies should report on sewerage and sanitation or sewerage only and how to define these two terms and establish who bears responsibility for them. It is clear that sanitation will be handled by other institutions as well.

- All organizations, both government and civil society, contributing towards sanitation need to have clear guidelines on reporting on their performance so that all efforts towards improving sanitation can be monitored and progress towards national goals seen. This is also an area where WWC can help.

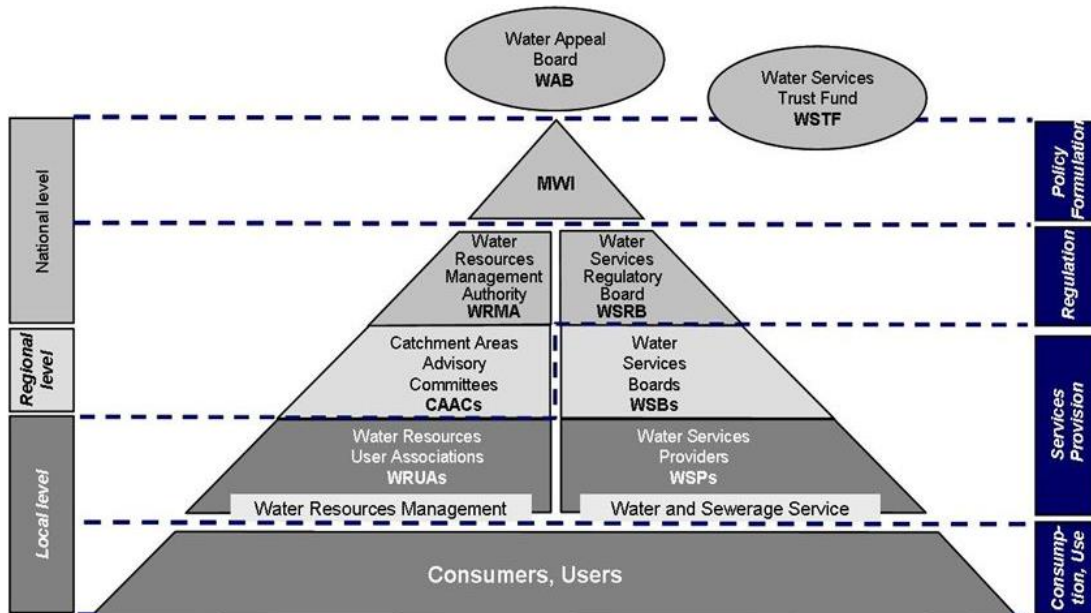
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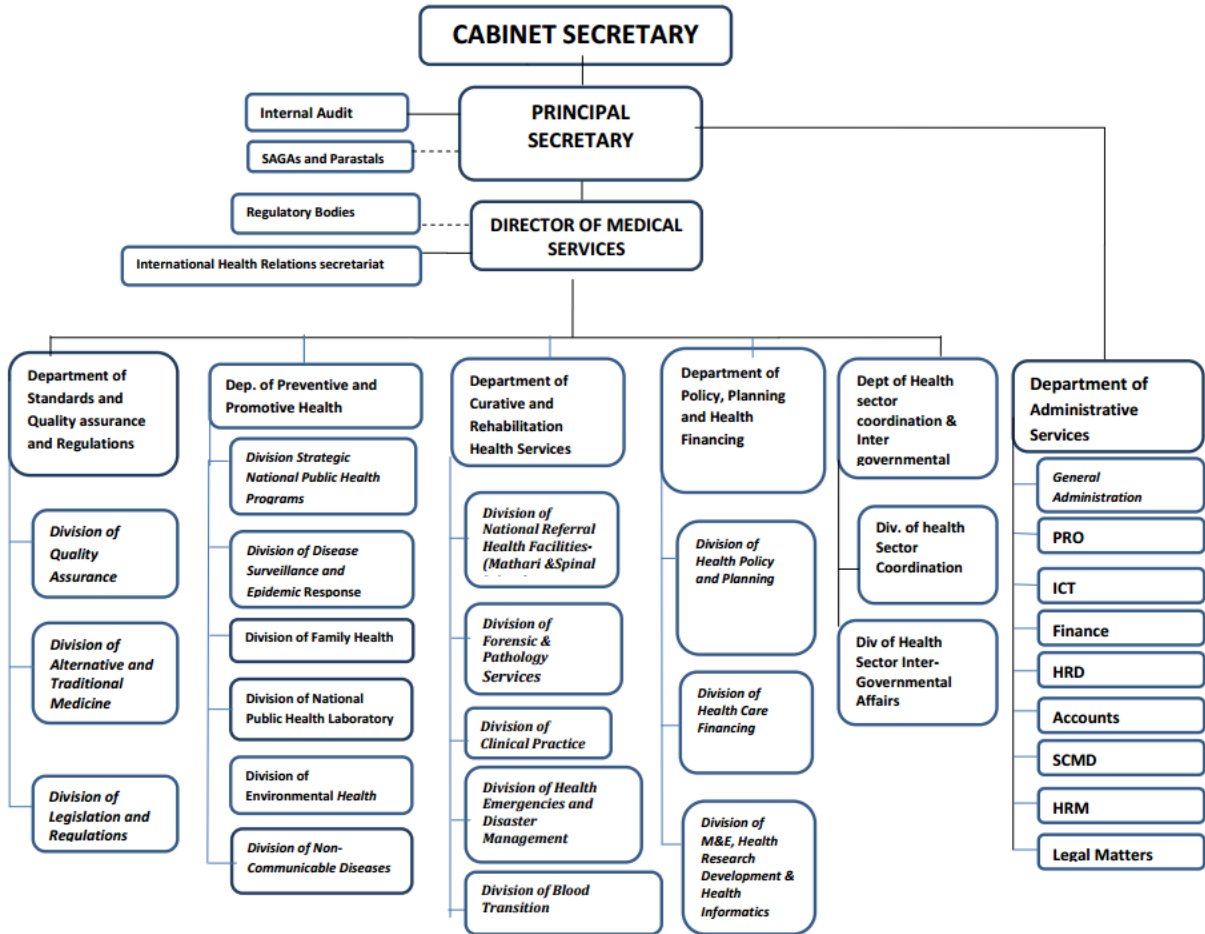
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APPENDICES

Appendix 1: Institutional framework of the water sector under the Water Act 2002



Appendix 2: Organogram of the Ministry of Health at the National Government



Appendix 3: Organogram of the Ministry of Health at the Nairobi County Government

