REPUBLIC OF RWANDA

MINISTRY OF INFRASTRUCTURE

National Sanitation Policy

Kigali, December 2016

FOREWORD

Sanitation plays a vital role in preventive health care and quality of life. For that reason, the Government of Rwanda has made the provision of sustainable sanitation services one of the priorities of the National Development Agenda and is establishing supportive policies and legislation.

The Ministry of Infrastructure has developed the National Sanitation Policy to ensure the proper implementation of activities in the sanitation sub-sector. The Policy outlines initiatives to overcome challenges and exploit existing opportunities in an integrated manner, and will effectively contribute towards achieving the goals of the National Development Agenda.

The Government of Rwanda will ensure expanded access to safe and sustainable sanitation services through a number of means including: establishing District sanitation centres providing a wide range of sanitation technologies; improving operation and maintenance of sanitation facilities; and assisting Districts and the City of Kigali to plan and design projects to mitigate urban storm water issues.

The Government of Rwanda is also encouraging active participation of local private service providers and operators in the sanitation sub-sector and will ensure that the principles advocated by this policy are adhered to in the whole process of sanitation services provision.

The Government further strongly recognizes the initiatives of the international and regional communities and will continue to cooperate in order to achieve the 2030 Sustainable Development Goals.

Germaine KAMAYIRESE
Minister of State in charge of Energy and Water

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Acronyms

CBEHPP	Community-Based Environmental Health Promotion Programme
EDPRS	Economic Development and Poverty Reduction Strategy
	EICV Integrated Household Living Conditions Survey
M&E	monitoring and evaluation
MDG	Millennium Development Goals
MINALOC	Ministry of Local Government
MINECOFIN	Ministry of Finance and Economic Planning
MINEACOM	Ministry of Trade, Industry and East African Community Affairs
MINEDUC	Ministry of Education
MINIRENA	Ministry of Natural Resources
MININFRA	Ministry of Infrastructure
MYICT	Ministry of Youth and ICT
MoH	Ministry of Health
MIS	Management Information System
NGO	non-governmental organization
O&M	operation and maintenance
PPP	public-private partnership
REMA	Rwanda Environment Management Authority
RNRA	Rwanda Natural Resources Authority
RURA	Rwanda Utilities Regulatory Authority
SDGs	Sustainable Development Goals
SWAp	sector-wide approach
UNICEF	United Nations Children's Fund
WASAC Ltd	Water and Sanitation Corporation Limited
WATSAN	Water and Sanitation (equivalent to WSS)
WHO	World Health Organization
WSS	water supply and sanitation (equivalent to WATSAN)

1. INTRODUCTION

1.1 RATIONALE FOR AN UPDATED POLICY DOCUMENT

In the Economic Development and Poverty Reduction Strategy (EDPRS) 2, Rwanda has committed itself to reaching very ambitious targets in sanitation, among them the vision to attain 100 per cent sanitation service coverage by 2017/18. The importance of adequate access to sanitation as a driver for social and economic development, poverty reduction and public health is fully acknowledged in Rwanda's flagship policy documents and national goals.

The need to update the relatively recent sanitation policy of 2010 and the strategy of 2013 arose from the fact that significant institutional reforms have substantially changed the sector context. The decentralization of responsibilities for rural sanitation, private-sector participation in sanitation and solid waste management, the emerging sector-wide approach (SWAp) had all been envisaged in 2010/13, but has gained decisive momentum since. The ambitious development objectives also require a revision of the institutional responsibilities and coordination mechanisms.

There is a broad consensus among key sector stakeholders on the need for a stronger emphasis on sanitation (including urban drainage and solid waste management) in any revised policy on water supply and sanitation (WSS) in order to meet the revised national objectives as outlined in chapter 3. For that reason, it was decided to develop two dedicated distinct policy documents – one for water supply and one for sanitation only – to avoid a situation that sanitation gets neglected or is just seen as an add-on to water supply.

The National Sanitation Policy has been developed as an Umbrella Policy that provides guiding principles for all aspects of sanitation, including liquid and solid waste, industrial waste, nuclear waste, e-waste, health-care waste and hygiene.

Finally, it is also worthwhile to mention that the new 2030 Agenda has water and sanitation at its core, with a dedicated Sustainable Development Goal (SDG) 6 on water and sanitation and clear linkages to goals relating to health, food security, climate change, resiliency to disasters and ecosystems, among many others. In particular, the sub-targets on sanitation are based on a more comprehensive concept of moving beyond basic services delivery and therefore also include environmental protection and faecal sludge management. These additional challenges require also a new set of policy direction and related implementation strategies.

1.2 THE UPDATING PROCESS

The present policy document is the result of a comprehensive sector analysis combined with a discussion and stakeholder consultation process led by a dedicated task force. Four provincial workshops, including the consultation with the City of Kigali and a national validation workshop were held to ensure the adequate participation of all sector stakeholders, including those external to the sector.

At the national level, the following government institutions were consulted and participated in the preparation of this policy: Ministry of Finance and Economic Planning (MINECOFIN); Ministry of Health (MoH); Ministry of Natural Resources (MINIRENA); Ministry of Education (MINEDUC); Ministry of Local Government (MINALOC); Ministry of Disaster and Risk Management (MIDIMAR); Ministry of Youth and Information and Communication Technology (MYICT); Ministry of Trade, Industry and East African Community Affairs (MINEACOM); Provinces, Districts and the City of Kigali; Rwanda Utilities Regulatory Authority (RURA); Environment Management Authority (REMA); Rwanda Natural Resources Authority (RNRA); Rwanda Energy Group (REG); Water and Sanitation Corporation Limited (WASAC Ltd); private sector and other public institutions and development partners. The revised policy document is also the result of a comprehensive desk review of key sector documents (*refer to the bibliography in the Annex*).

1.3 SCOPE OF THE POLICY AND DEFINITIONS

According to the 1997 Kampala Declaration on Sanitation, sanitation encompasses the isolation management of excreta from the environment, maintenance of personal, domestic and food hygiene, safe disposal of solid and liquid wastes, maintaining a safe drinking water chain and vector control'.

For the purpose of this policy, "Sanitation" as a whole is a "big concept" which is understood as the collection, transport, treatment and disposal or reuse of human excreta and domestic and industrial waste (liquid, solid and gaseous) as well urban storm water management. It also includes the management of electrical and electronic waste (e-waste), hazardous waste, health-care waste, and radioactive and other dangerous substances.

Ten concepts impact the formulation of the Policy and Strategy, and their definitions are of significant importance:

- Urban storm water management;
- Faecal sludge management along the entire value chain (new definition);
- Difference between individual and collective sanitation;
- Coverage and access to safe sanitation;
- Definition of safe latrines/toilets;
- Electric and electronic waste;
- Industrial waste;
- Health-care waste;
- Nuclear/radioactive waste; and
- Hazardous waste.

i. Urban storm water management

The rapid urbanization rate alters how water flows during storm events, putting volumes of water and more pollutants into national rivers, lakes and estuaries. In urban areas, roads, parking lots and other impervious surfaces channel and speed the flow of water streams and, when combined with pollutants picked up by storm water, these lead to water quality degradation in urban streams.

Storm water management is a cross-cutting issue that can be addressed by different actors in the Sanitation sub-sector. Given its impact on infrastructure sector development, concerted efforts will be needed to address this issue.

With respect to the scope, this policy considers wastewater, urban storm water and solid waste management as inextricably linked and also focuses on integrated management of urban storm water and wastewater. This is in contrast to the practice of viewing each waste stream as independent and separate from the others. By this policy, the management of wastewater and urban storm water needs to be considered within the context of the overall urban water life rather than as a specific resource in isolation.

ii. Faecal sludge management

The Rwandan Policy 2010 has already proposed an approach based on safe management of the faecal sludge throughout the sanitation value chain. The new SDGs now also entail all the steps of the sanitation management chain, from containment to reuse/disposal as shown below:

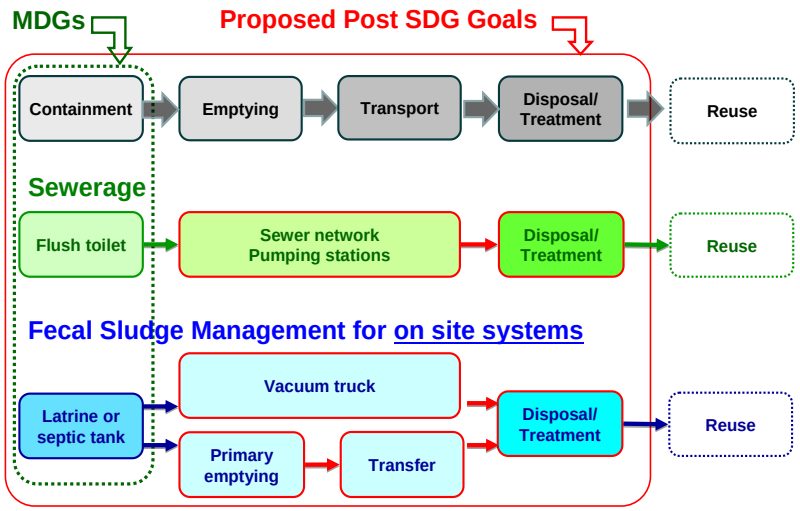

Figure 1: Sustainable Development Goals (SDGs)

This means that it is not sufficient to build only latrines and toilets; a "public service" must provide "safe" services for transportation and treatment for both on-site and off-site systems.[1]

iii. Individual vs. collective sanitation

Unlike water supply, the tasks and responsibilities of sanitation services are much more shared between individual (household level) and collective service providers, and the definitions of (a) individual and collective and (b) on- and off-site sanitation need to be carefully set. The table below offers a definition for each type of the sanitation chain in accordance with the SDGs.

Table 1: Definition of sanitation services

Management	Individual sanitation	Collective sanitation
On-site sanitation	Sanitation facilities at household level (latrines, septic tanks, infiltration pits)	Institutional sanitation: • Collective toilets (schools, health centres…) • Public toilets (markets, squares, bus stations)
Off-site sanitation	Faecal sludge management (collection by vacuum tankers and transportation to a faecal sludge treatment plant)	• Centralized sewerage (conventional) • Decentralized sewerage (condominial) • Wastewater and faecal sludge treatment plants

The definitions in the table above show that all facilities at household level are on-site and individual. However, "individual sanitation" does not imply that all the services are to be provided by households alone: complementary *collective service provision* for emptying, transportation and treatment of faecal sludge from individual on-site sanitation is needed.

iv. Coverage and access to safe sanitation

The sanitation indicators – coverage and access to safe basic sanitation – are most important indicators for the sanitation services sector. They reflect the sector in Rwanda's flagship development documents (EDPRS 2, Vision 2020).

> **Access to basic sanitation**: Per cent of people able to acquire affordable services and improved private sanitation facility as well as safe on- or off-site treatment and disposal of wastewater and sludge.

This definition of **access** means that households (and industries, trade) should have sufficient

[1] Such "public services" can be provided by public utilities or the private sector. In this case, the public sector must regulate the activities of the private sector.

financial resources and the local market should be able to provide solutions and services that are affordable. Households also need to access the suitable information for them to be able to decide on the best solution for their needs and resources in line with environmental standards.

Coverage is different from *access*; coverage goes beyond access and means sustainable, continuous use and access over time.

> **Coverage** of **basic sanitation**: Per cent of people *using* an improved private sanitation facility and safe on- or off-site treatment and disposal of wastewater and sludge.

Access contributes to sustainable coverage. **But it is coverage, not access, that provides Rwanda the return on investment and the economic benefits the country is aiming at.**

"Using" also means that people apply a new social norm, translated into a suitable, responsible and healthy behaviour, both at household and community levels (through formal or informal enforcement of the local social norm). They *use* the facility ("having" a facility is not enough).

Therefore, the policy and the strategy will propose to develop a *coverage indicator* as ultimate objective and sole indicator for (i) coverage; (ii) access; and (iii) adequate hygiene behaviour.[2]

It should be noted that the above definition is for practical monitoring purposes; it follows the SDGs and includes the entire value chain, from improved latrines/toilets to safe reuse/disposal.

Apart from agreeing on definitions, it is essential to develop a viable and sustainable monitoring system, including reliable data collection and calculation methods. The new data-gathering process will require evolving from simply counting the number of latrines/toilets (Millennium Development Goals, or MDGs) to assessing the achievement of the value chain (SDGs), and data may take several years to be reliable and representative. It is particularly important to ensure that the definitions and questionnaires used by the National Institute of Statistics as well as the Management Information System (MIS) are in line with the above definitions. For that reason and for the purpose of the Policy and Strategy, the definition used for access to individual sanitation is still based on the MDG approach.

v. Definition of safe latrines/toilets

The Joint Monitoring Programme for Water and Sanitation (UNICEF/World Health Organization (WHO)) has defined for monitoring that an "improved" sanitation facility is one that hygienically separates human excreta from human contact. It defines improved/unimproved sanitation hardware as follows:

Table 2: WHO/UNICEF definitions of sanitation facilities

Improved sanitation facilities	Unimproved facilities
Use of the following facilities in home/compound: ○ Flush/pour-flush to: ▪ piped sewer system ▪ septic tank ▪ pit latrine ○ Ventilated improved pit (VIP) latrine ○ Pit latrine with slab ○ Composting toilet	○ Use of the following facilities anywhere: ▪ Flush/pour-flush to elsewhere ▪ Pit latrine without slab/open pit ▪ Bucket ▪ Hanging toilet or latrine ○ Use of a public facility or sharing any improved facility ○ No facility, bush or field (open defecation)

This definition remains useful for several purposes. As a benchmark criterion, it will support technical

[2] According to the latest WHO/UNICEF Joint Monitoring Programme (JMP) report 2015, the percentage of Rwanda's population with a hand-washing facility at home with soap and water is estimated at only 6 per cent in urban areas and 1 per cent in rural areas.

strategies while formulating urban master plans and rural sanitation projects. Improved sanitation facilities also remain a starting point for progress data-gathering at the individual house level, although such data are not sufficient to comply with the new SDG and policy requirements to measure adequate sanitation coverage.

vi. Definition of electronic waste management

E-waste encompasses all discarded and disposed electrical and electronic equipment (EEE), which is defined as equipment dependent on electric currents or electromagnetic fields in order to work properly, but also equipment for the generation, transfer and measurement of such currents and fields.

"Electronic waste or e-waste is any broken or unwanted electrical or electronic appliance. E-waste includes computers, entertainment electronics, mobile phones and other items that have been discarded by their original users. While there is no generally accepted definition of e-waste, in most cases, e-waste consists of expensive and more or less durable products used for data processing, telecommunications or entertainment in private households and businesses".

vii. Definition of industrial waste management

Industrial waste is the waste generated by industries and includes solid, liquid and gaseous wastes. In addition, it includes any material that is rendered useless during a manufacturing process, such as that of factories, industries, mills and mining operations. Any waste arising from commercial, trade activities, laboratories or containing substances or materials which are potentially harmful to human beings or equipment are termed as industrial waste.

viii. Definition of health-care waste

The term health-care waste includes all the waste generated within health-care facilities, research centres and laboratories related to medical procedures. In addition, it includes the same types of waste originating from minor and scattered sources, including waste produced in the course of health care undertaken in the home (e.g., home dialysis, self-administration of insulin, recuperative care).

Health-care waste categories include but are not limited to general waste, infectious waste, pathological waste, sharps, pharmaceutical waste, genotoxic waste, chemical waste, waste with high content of heavy metals, pressurized containers and radioactive waste.

ix. Definition of nuclear/radioactive waste

Radioactive waste is any material that is either radioactive itself or is contaminated by radioactivity, for which no further use is envisaged.

Radioactive waste includes solids, liquids and gaseous material contaminated with radionuclide. It is produced as a result of procedures such as in vitro analysis of body tissue and fluid, in vivo organ imaging and tumour localization, and various investigative and therapeutic practices.

Radioactive waste is also generated while decommissioning and dismantling nuclear reactors and other nuclear facilities. There are two broad classifications: high-level or low-level waste. High-level waste is primarily spent fuel removed from reactors after producing electricity. Low-level waste comes from reactor operations and from medical, academic, industrial, mining and other commercial uses of radioactive materials.

x. Hazardous waste

Hazardous waste is waste that is dangerous or potentially harmful to human health or the environment. Hazardous waste can be liquids, solids or gases. Sources of hazardous waste include

hospitals, timber treatment, petrol storage, metal finishing, paint manufacture, vehicle servicing, tanneries, agriculture/horticulture, electricity distribution and dry cleaning.

2. POLICY CONTEXT: COHERENCE WITH DEVELOPMENT FLAGSHIPS

2.1 THE IMPORTANCE OF HYGIENE AND SANITATION FOR DEVELOPMENT

Proper sanitation and hygiene affects broad areas of human life. The provision of adequate sanitation services plays a crucial role in preventive health care and is more generally a prerequisite and indicator for socio-economic development. Poor sanitary conditions promote diarrhoea, intestinal parasites and environmental enteropathy and have complex and reciprocal links to malnutrition in children. Existing evidence demonstrates that poor sanitation and hygiene conditions can affect a child's nutritional status via at least three direct pathways (i) diarrhoeal diseases; (ii) intestinal parasites; and (iii) environmental enteropathy. Malnutrition weakens the body's defences and makes children more vulnerable to disease. At the same time, diarrhoea and intestinal parasites contribute to malnutrition by causing decreased food intake, impaired nutrient absorption and direct nutrient losses.

Studies pointed out that even a relatively mild infestation of parasites can consume 10 per cent of a child's total energy intake as well as interfere with digestion and absorption. Unsanitary environments due to the lack of adequate water supply also contribute to malnutrition by challenging children's immune systems; nutrients that would otherwise support growth go instead towards supporting the immune response. Some researches demonstrated strong relation between diarrhoeal infections in the first two years of life and cognitive functioning when children are between 6 and 9 years old. Numerous studies have also reported that malnutrition and stunting have been found to be related to children's mental and social development, in both the short and longer terms. Children who have suffered from early malnutrition have lower intelligence quotient and school achievement levels and more behavioural problems at later ages.

Closely interlinked with other development sectors, the provision of adequate sanitation services therefore remains to be a core element of development strategies and indicators, including Rwanda's Vision 2020 and EDPRS 2, as well as the recently endorsed SDGs.

2.2 COHERENCE WITH DEVELOPMENT FLAGSHIPS

Vision 2020 Rwanda is politically committed to achieve long-term aspirations and targets in sustainable socio-economic development. The related targets and principles are defined in the following development flagships that primarily include Rwanda's Vision 2020 and EDPRS 2 and the new SDGs.

2.2.1 Vision 2020

Vision 2020 was revised in 2012 in alignment with the new EDPRS 2 2013–2018. The directly relevant statement of Vision 2020 embedded in pillar 4, infrastructure development, is presented in Annex 1.

2.2.2 EDPRS 2 (2013–2018)

The Sanitation Policy is coherent with the EDPRS, Rwanda's medium-term framework for achieving its long-term development aspirations and priority areas, and the very ambitious sanitation targets. There shall be a close link with the EDPRS 2 planning and monitoring framework.

The main policy relevant statements and objectives in the EDPRS 2 2013–2018 are shown in Annex 1.

2.2.3 Seven-Year Government Programme (2010–2017)

The targets of the Seven-Year Programme of the Government of Rwanda further reinforce the EDPRS targets. *(A sanitation-related quote from the programme (2010–2017) is presented in Annex 1).*

2.2.4 Sustainable Development Goals (SDGs)

In September 2015, the United Nations adopted the 2030 Agenda for Sustainable Development to end poverty and promote prosperity for all while protecting the environment and addressing climate change.

The new 2030 Agenda has water and **sanitation** at its core, with a dedicated SDG 6 on water and sanitation and clear linkages to goals relating to health, food security, climate change, resiliency to disasters and ecosystems, among many others.

Reaching the ambitious objectives of the 2030 Agenda demands that Rwanda addresses universal access to drinking water and sanitation along with issues of quality and supply, in tandem with improved water management to protect ecosystems and build resiliency. It includes two main goals:

- Goal 6, "Ensure availability and sustainable management of water and sanitation for all"
- Goal 17, "Strengthen the means of implementation and revitalize the global partnership for sustainable development", in the context of water and sanitation.

In addition to this, SDGs 11 and 12 also propose solid waste objectives, although they do not define the extent:

- Goal 12.5, "By 2030, *substantially* reduce waste generation through prevention, reduction, recycling and reuse"

The post-2015 development road map for sanitation have be developed in tandem with other major parallel intergovernmental processes currently under way, some of which have culminated in 2015, such as the Third World Conference on Disaster Risk Reduction, the discussions on Finance for Development and the international climate change negotiations (COP21).

2.2.5 Health Policy 2014 and Health Sector Strategic Plan (2012–2018)

The objective of the Health Policy is centred on the reduction of burden of disease of the most important health problems in Rwanda – i.e., maternal and child health problems, infectious diseases and non-communicable diseases through access to primary health care. Both prevention and treatment and care services are included in these programs, as well as interventions aiming at improving important health-determining factors, such as behaviour change communication, promotion of adequate nutrition, environmental health and sanitation and access to safe water.
Policy directions with relevance to the water supply sub-sector are as follows:

a) The health cross-sector collaboration has to be strengthened to tackle multi-factorial determinants affecting the health of the population (poverty reduction, nutrition and food security, water and sanitation, human rights, education and social protection, empowerment of youth and vulnerable populations).
b) Environmental health interventions will be strengthened from the national to the village level. Hygiene inspections will be decentralized to empower districts and sectors and the Community-Based Environmental Health Promotion Programme will be scaled up to be implemented country-wide.
c) Inter-sectoral collaboration between non-health departments and the MoH is essential for interventions targeting health determinants: water distribution and sanitation systems to meet essential health needs, and public hygiene activities (domestic and health-care waste management, health inspections).

2.2.6 Rwanda Environment Policy (2003)

The National Environment Policy sets out overall and specific objectives as well as fundamental principles for improved management of the environment, both at the central and local level, in accordance with the country's current policy of decentralization and good governance.

The policy also sets out institutional and legal reforms with a view to providing the country with a coherent and harmonious framework for coordination of sectoral and cross-cutting policies. It furthermore introduces innovations including, among others, the establishment of a Rwanda Environment Management Authority and provincial and district or town committees responsible for environmental protection, which are currently in place and functioning.

2.2.7 National Policy on Injection Safety, Prevention of Transmission of Nosocomial Infections and Health-Care Waste Management (2009)

The National Policy on Injection Safety, Prevention of Transmission of Hospital Infections and Health-Care Waste Management has been developed to help health professionals to improve the quality of care and to establish procedures and evaluation mechanisms to ensure optimal quality of health care to prevent infections. The Policy aims at protecting and/or minimizing the risks due to unsafe injections and management of health-care waste practices for patients, health workers, consumers and the environment from the hazardous health-care waste disposal practices.

2.2.8 National Guidelines on Health-Care Waste Management

The guidelines provide a minimum standard for safeguarding public health and the environment through efficient management of health-care waste. All types of health-care waste are taken into account by these guidelines, and each health facility is recommended to be responsible for managing its waste from the point of generation to the final disposal. These guidelines are recommended to all stakeholders in the health sector and in particular all those involved in delivery of health-care services in Rwanda.

The guidelines provide a framework of waste management strategies outlined below:

- Hygiene and infection prevention control committees for waste management, planning and auditing;
- Reduce, recycle and reuse;
- Waste labelling and containment;
- Proper waste handling, segregation, storage and transport;
- Correct waste treatment and disposal

2.2.9 Rwanda Draft E-Waste Policy (2015)

The draft E-Waste Policy under MYICT stresses that the utilization, purchase and import of electrical and electronic equipment is expected to grow substantially in the years to come, and a conventional estimate would be a growth rate of 20 per cent annually. The increased usage of electrical and electronic equipment would subsequently generate increased volumes of e-waste. Moreover, the current lack of infrastructure to handle e-waste in Rwanda has motivated institutions and private persons to store outdated equipment, which also need to be managed in an environmentally safe manner.

2.2.10 National Industrial Policy (2011)

The National Industrial Policy (April 2011) makes it clear that the waste produced by industrial processes is harmful to the environment and to the businesses and people who rely on it. It is therefore paramount that mitigating measures are taken so that growth can take place in a sustainable long-term manner.

2.2.11 Rwanda Industrial Master Plan (2009–2020)

It is estimated that close to 70 per cent of industry in the country is located in Kigali, which implies a potential concentration of the pollution in the capital. Standard facilities for waste treatment and other sewerage control systems that will be installed on all industrial parks across the country to manage effluents shall need to be put in place.

2.3 STATUS OF RWANDA'S SANITATION SUB SECTOR

2.3.1 Household and institutional sanitation

Rwanda has achieved remarkable progress in health. Since 1990, under-5 mortality has decreased by two thirds and maternal mortality by three quarters, while life expectancy has nearly doubled.[3]

Open defecation has practically been eradicated and most of Rwandan households have already financed and built their on-site private sanitation premises, albeit only about two thirds comply with the international standard definitions of an improved sanitation facility. Very few Rwandan households have installed flush toilettes. The prevailing practice remains that water is used for cooking and washing (grey water, discharged mostly on surface) while excreta are disposed with waterless latrines, which is a rational solution considering the scarcity of the average water supply and financial constraints.

The country has not yet invested in collective (water-borne) sanitation systems for densified urban areas, except a few small sewerage systems in Kigali for about 1,000 households altogether. Major hotels, hospitals, office buildings and some industries have installed their own (pre-) treatment systems. Actually, conventional sewerage and treatment systems for Kigali, Gasabo and Kicukiro are in the planning process.

Community Health Clubs have been established in all of the 30 districts in Rwanda. In addition 98 per cent of all 14,767 villages in Rwanda have registered Community health Clubs (CHCs). Of this number 5,376 villages have trained Village Health Workers (ASOC) who are running health sessions regularly. The remaining districts are set to be trained by 2018. Although sanitation hasn't been the main focus over the past few years, the CHCs provide an excellent platform to promote sanitation improvements.

Rwanda's schools benefited from the Community Health Clubs (replacing the Hygiène et Assainissement en Milieu Scolaire –(HAMS) /(Hygiene and Sanitation in schools) programme that started in 2000) which focuses on behaviour changes in hygiene practice, including considerations for menstrual hygiene.

Progress towards the sanitation flagship targets

Improved sanitation coverage is estimated by the UNICEF/WHO Joint Monitoring Programme at 75% (rural: 71 per cent, urban: 83 per cent)[4] for 2015 but including shared toilets. Rwanda's Joint Water and Sanitation (WATSAN) sector review, November 2015, provides slightly higher figures for 2015 with reference to Integrated Household Living Conditions Survey (EICV) 4 results: overall access to improved sanitation is indicated with 83.4 per cent (rural: 81.4 per cent, urban 93.5 per cent). The fifth Rwanda Demographic and Health Survey (DHS) as of 2014/15 provides similar results (72 per cent including improved and shared facilities). It should, however, be noted that the reliability of the available access figures is limited. This is due to the difficulties in correctly assessing the quality of private pit latrines used by the vast majority of the population. Total latrine (or toilet) coverage, including improved and not improved sanitation facilities, in Rwanda is estimated at 96 per cent,

[3] World Bank, World Development Indicators, 2015, <http://data.worldbank.org/indicator>.

[4] Source: 'Progress on Sanitation and Drinking Water: 2015 update and MDG assessment', Joint Monitoring Programme, 2015.

according to the Census 2012[5] and the fifth Rwanda Demographic and Health survey (DHS) as of 2014/15, which reflects a high household acceptance level for such infrastructure.

However, the facility coverage level contrasts with relatively low hygiene practices as indicated by the Demographic and Health Surveys in 2010 and confirmed in 2016: only 12 per cent of households had a place for hand washing. The proportion of households with a place for hand washing increases with increasing wealth, from 9 per cent among households in the lowest three quintiles to (only) 20 per cent of those in the highest quintile.

To achieve universal coverage with improved sanitation until 2018, and assuming a current improved toilets deficit of 25 per cent, Rwanda will not only have to improve, replace or build annually almost 500,000 facilities at household levels, but also increase hygiene awareness and practices and provide safe (collective) *sanitation services* for several million households throughout the country.

Table 3: Number of latrines/toilets to be built in 2016, 2017 and 2018

Year	Population	Households	New latrines/toilets to be built			
			Deficit	Substitution old	for new households	**Total**
	2,36%	4.3%	**25%**	6.7%		
2016	13,000,000	3,023,256	251,938	151,163	69,767	**472,868**
2017	13,307,087	3,094,671	251,938	154,734	71,415	**478,087**
2018	13,621,427	3,167,774	251,938	158,389	73,102	**483,429**

The indicative calculation for latrine/toilet construction is based on the following assumptions:

Annual growth of population of 2.36 per cent and average number of 4.3 members per household;[6]

(i) An estimated deficit of improved sanitation facilities of about 25 per cent equivalent to approximately 750,000 improved latrines, or 250,000 per year;

(ii) An average lifetime of 15 years for individual pit latrines requiring the annual substitution or reconstruction of about 7 per cent of the existing improved facilities; and

(iii) A new pit latrine/toilet for every new household.

2.3.2 Urban storm water management

Volumes of storm water and wastewater form a very large part of the urban water cycle. Their improved and integrated management offers potentially large environmental, economic and social benefits. The ability to achieve these benefits is increasing as new technologies, system design concepts and management methods are progressively introduced, however, there is little evidence of major moves towards more adoption.

Storm water runoff from the built environment remains a great challenge, as it is a source of contamination and a main contributor to water-quality impairment of water bodies nation-wide. Storm water remains a country-wide problem, especially in country cities, towns, rural centres and grouped settlements (villages) due to the topography and natural conditions of the soil. In addition to entrainment of chemical and microbial containments as storm water runs over roads and rooftops, storm water poses a physical hazard to water bodies.

The serious problem is identified particularly in the City of Kigali and in Secondary Cities. Since 2010, the Government of Rwanda has taken measures to move the population from high risk zones, including flooding zones in urban and rural areas. Actually, all families near flooding zones and

5 Fourth Population and Housing Census, Rwanda, 2012, National Institute of Statistics of Rwanda, 2014.

6 Integrated Household Living Conditions Survey, 2013/14, National Institute of Statistics of Rwanda, 2015.

around dangerous storm water channels have been removed. Several urban master plans are being elaborated should cater for wastewater and urban storm water management issues.

Urban storm water planning and implementation are the responsibility and task of municipalities (Districts and City of Kigali), but no specific task force at the national level is in place and in charge to support decentralized storm water management yet. There is a need to manage both wastewater and urban storm water in linked and integrated manner.

2.3.3 Solid waste management

The 2010 National Sanitation Policy already addressed solid waste management, delegating the task to households, communities, Non-Governmental Organizations (NGOs), the private sector, community associations and district authorities, some of them operating with limited technical and financial means.

Rwanda has not implemented systematically the integrated solid waste management approach but has seen different interventions carried out by districts and the private sector, the latter mostly in Kigali, in line with the (global) principles set out in the Policy 2010 and in the "Practical Tools on Solid Waste Management of Imidugudu, Small Towns and Cities: Landfill and composting facilities", also published in 2010.

Kigali and other towns are undertaking considerable efforts to maintain the urban environment clean, but final treatment and disposal is lagging behind schedule. A promising integrated waste management approach has been developed in the Kigali City Master Plan Report, 2013, but has not yet been implemented: Environmental Treatment Zone.

Problems arise at all stages of waste collection and disposal. Kigali's waste still contains 70 per cent of organic, biodegradable waste, and in rural areas this portion of waste may reach more than 95 per cent. While some waste-sorting, composting and recycling activities have been developed over the past few years, Rwanda did not invest yet in environmentally safe landfills, although several landfills are planned – e.g., in Kigali, Kamonyi, Ngoma, Nyamagabe and Huye – and incinerators were constructed in health centres.

The Government of Rwanda also has encouraged private investment in recycling. These companies receive legal guidance, which still needs more clarification regarding the compliance of all involved parties (customers, companies and authority) and so far, there is no clear technical assistance from the Government and no special financing facility.

Rwanda's market demand for recycled products remains limited except for plastic and paper (broken glass: none; bottles, metal, organic waste: medium).

Regulations are primarily targeted to private waste collecting and recycling companies (obligation to deliver sorted waste) and less to consumers – e.g., no regulation on how to sort at source, no obligation to comply with or to pay for selective collection.

Implementation of solid waste management has been decentralized to municipalities and districts. A specific task force at the national level is not yet in place and in charge to support decentralized solid waste management.

2.3.4 E-waste management

In 2015, MYICT, in collaboration with the Ministry of Trade, Industry and East African Community Affairs (MINEACOM), have formulated a draft special policy on e-waste, which gives a broader policy direction on e-waste management. Detailed guidance and strategies for e-waste management will be provided by the specific e-waste policy.

Considerable efforts have been made to tackle e-waste issues whereby an assessment on e-waste

status and trends in Rwanda was conducted and recommendations for e-waste management were highlighted for consideration by the concerned institutions. The draft regulations on e-waste collection, transportation, dismantling and recycling are being developed by the regulator and at an advanced stage. The E-waste management framework and the capacity to handle e-waste in Rwanda is still a challenge that needs special attention and is addressed by this policy.

2.3.5 Industrial waste management

The Industrial Policy (2011) clarifies that the majority of industrial firms are not endowed with equipment for treatment of their industrial waste in the natural environment. Effluents are poured mainly in waters such as Nyabugogo River. This includes disposal of biodegradable organic products, oils and heavy metals such as chrome, lead, zinc and copper, among others.

The appropriate industrial zones were created whereby most of the industries were relocated from inappropriate areas to ensure environmental protection and the protection of human health.

The Rwanda Cleaner Production Centre was established to promote an integrated strategy applied to the whole of the production cycle to improve the environmental performance of industrial firms in Rwanda. The Centre shall promote more efficient use of raw materials, energy and water, and aims to ensure a life cycle production approach for environmental sustainability.

Much as the Industrial Policy (2011) highlights the need for equipment for treatment of industrial waste, there is no specific policy on industrial waste management, which this policy recommends to be developed going forward for effective industrial waste management.

2.3.6 Radioactive/nuclear waste management

Rwanda has not yet developed the regulatory framework for radioactive/nuclear waste management. The technology to handle, treat and recycle radioactive waste is also limited. Mining activities being undertaken in the country are expected to have radioactive elements, hence there is a need for a specific policy for radioactive waste management considering the likelihood of radioactive/nuclear waste generation. Steps are being taken to put in place the regulatory framework for radioactive waste whereby the draft radiation law is under development by the Ministry of Infrastructure (MININFRA).

2.3.7 Health-care waste management

Policies, guidelines and procedures have been developed to ensure health-care waste management. These include: National Policy on Injection Safety, Prevention of Transmission of Nosocomial Infections and Health-Care Waste Management (2009), National Guidelines on Health-Care Waste Management, and health-care waste management standard operating procedures.

Considerable efforts have been made to establish the policy framework for health-care waste management, but there is still no law governing the management of such waste. Such a law needs to be developed going forward. The 2009 policy also needs to be reviewed to match the newly adopted SDGs.

2.4 KEY SECTOR ISSUES AND CONCERNS TO BE ADDRESSED

Rwanda's economic growth and poverty reduction goals are hampered by a lack of improved sanitary facilities as well as limited service provision for excreta disposal, management of solid and liquid wastes, combined with inadequate hygienic practices and storm water risks,.

To increase sanitation coverage, Rwanda can build on some valuable scalable sanitary achievements. Most Rwandan households have already financed and built their waterless sanitary facilities and

adhere to basic principles regarding garbage disposal and recycling (composting). The decentralization process provides an adequate framework for community participation and sensitization. Large programmes have been launched and capacities installed to improve domestic and school sanitation and hygiene.

Feasible and socially acceptable sanitation technologies are available but not yet affordable for all population segments (funding gap and unavailable options for country-wide household financing). Modern sanitation service provision, solid waste and storm water management require efficient institutional capacities and somewhat costly infrastructure. Investments with high economic but low financial return are usually not very attractive for the private sector and may need public finance and/or subsidies.

Key challenges also include the magnitude of the sanitary improvement agenda over the next few years and the capacity constraints for scaling up the supply side; the combination of sensitization with targeted support for infrastructure development; the enforcement of existing and new regulation (e.g., sludge emptying services, household solid waste separation, storm water standards); limited awareness on hygiene practice; funding requirements (households, private and public sectors); the reformulation of institutional responsibilities and coordination mechanisms; and the lack of a monitoring and reporting system for the sanitation and solid waste sub-sectors.

Climate change is now recognized as one of the defining challenges for the twenty-first century. More frequent and intense extreme weather events have resulted in a higher incidence of flooding, pollution and droughts around the planet. The ensuing adverse impacts on sanitation, for instance on storm water management, industrial waste, e-waste; health-care waste and nuclear/radioactive waste can constitute an increased danger for human health and the environment. In a context of relative uncertainty associated with climate change projections, policy responses shall have to be formulated based on current knowledge to address these consequences.

Climate change considerations may impact the Policy and the Strategy and will strengthen criteria such as sustainability (also related to the SDGs) and resilience.

3. VISION

The vision of the Sanitation Policy is to:

Ensure sustainable, equitable and affordable access to safe sanitation and waste management services for all Rwandans, as a contribution to poverty reduction, public health, economic development and environmental protection.

4. MISSION

The mission of the sanitation sub-sector and its key stakeholders (national, local, public and private) is to:

Promote, plan, build and operate services in a sustainable, efficient and equitable manner. Core instruments, capacities and administrative processes will be established to ensure effective sector programme management and sanitation sector programme steering.

5. POLICY PRINCIPLES

Most of the Rwandese population relies on individual sanitation, and specific approaches for both individual and collective services must be considered.

Households have demonstrated their willingness and capacity for building their own sanitation facilities in most areas of the country – although many of the facilities do not yet comply with the definition of improved facility. The willingness and sense of responsibility existing among the population is a strong asset that should be acknowledged and supported. A second asset is certainly

the dynamic of the Rwandan business sector.

These considerations shall drive the strategy for achieving the ambitious objective of universal coverage in sanitation services, including management of excreta, wastewater, solid waste and storm water, and will define the role and leadership of the Government of Rwanda at all levels: municipal, district and national.

The Policy considers the role of the Government as follows:

1. To motivate and support households, industries and trade so they improve their own *individual sanitation facility, contribute to efficient solid waste operation and improve storm water prevention*.
2. To improve the business *enabling environment* for service providers (masons, constructors, shops, vacuum tankers, solid waste operators, recyclers) so they are able to provide affordable services to households, industries and trade.
3. To plan, invest, operate or delegate operation of *collective sanitation and solid waste services and facilities*, including institutional sanitation, sewerage, treatment plants (for wastewater, faecal sludge and solid waste).

The formulation of this sanitation policy is guided by a number of policy principles. These include:

i. **Priority to basic services:** Each person and community has equal right to access basic sanitation services. Priority will be given to "some for all" rather than "all for some", until the Vision 2020 goal of access to universal coverage for all is reached. Due attention will be given to affordability.

ii. **Water sanitation and hygiene (WASH) services:** Such services will be delivered as an integrated package to ensure maximum health outcomes.

iii. **Decentralization:** The responsibility for sanitation development is vested at the decentralized level. The sanitation sector is committed to building and strengthening decentralized planning, implementation and management capacities.

iv. **Community participation:** The beneficiaries of sanitation services shall be actively involved in planning, decision making and oversight throughout the project implementation cycle. In particular, they will choose the service level that responds to their needs and capacities. The final responsibility for household sanitation shall remain an individual issue.

v. **Cost recovery and financial sustainability:** Operation and maintenance costs of sanitation infrastructure shall be borne by the users. Affordability shall be addressed by the choice of appropriate technologies and by enhancing efficiency, not only by granting subsidies. The **polluter-pays** and **user-pays** principles are to be applied in sewerage and waste management.

vi. **Private-sector participation:** The sanitation sector will continue to promote delegated management through private providers, which is a key strategy to enhance sustainability. The private sector will also be encouraged and supported in developing capacities for investment, construction and service delivery in sanitation and solid waste management.

vii. **Operational efficiency and strengthening of accountability** are seen as priorities for *collective* services (sewerage and solid waste as well as faecal sludge) development and management, in order to improve financial viability, minimize fiduciary risk (checks and balances) and optimize the use of the available resources.

viii. **Emphasis on behaviour change:** The sector recognizes the critical importance of hygiene behaviour change for demand creation and the achievement of sustainable health benefits. Sanitation and hygiene activities and projects shall be developed through strategic cooperation with the health, nutrition and education sectors.

ix. **Interests of women and children:** The crucial roles and the particular interests of women and children are fully acknowledged. All sector activities shall be designed and implemented in a way to ensure equal participation and representation of men and women, and to pay due attention to the viewpoints, needs and priorities of women and children.

x. **Grouped settlements:** The sanitation sub-sector gives preferential consideration to service delivery in grouped settlements where densities are high, taking into account the changing habitat structure.

xi. **Environment and water resources protection:** Sanitation will be developed in close coordination with water resources management, based on an integrated approach. Wastewater and solid waste collection and disposal and storm water interventions shall be planned and managed with a view to minimize costs, environmental impact and ensure the protection of water resources.

xii. **Sector Wide Approach (SWAp):** The Water and Sanitation sector aims to develop a consistent, national approach, to harmonize financing and implementation modalities and to optimize stakeholder coordination under the lead of the Sector Working Group (SWG). The SWAp as well as the sector's capacity-building efforts will consider all sector stakeholders, including NGOs and the private sector. National structures and capacities shall be further developed to replace project implementation units in the short to medium term.

xiii. **Results-based management**: Monitoring and evaluation (M&E) systems will be developed in conjunction with planning and budgeting procedures, involving decentralized actors (in particular the districts), in order to ensure that the activities and investments are in line with the defined sector objectives and priorities. The M&E for Research and Learning approach shall be used instead of M&E.

6. POLICY OBJECTIVES

Specific policy objectives are formulated in a way to be directly used for strategic planning and monitoring. Each sub-sector objective will be associated with its indicators, time-bound targets and implementation responsibilities.

Individual sanitation	1. Raise and sustain household sanitation coverage to 100 per cent by 2020, and promote hygiene behaviour change.
Institutional sanitation	2. Implement improved sanitation for schools, health facilities and other public institutions and locations.
Off-site collective sanitation	3. Develop safe, well-regulated and affordable off-site sanitation services (sewerage and sludge collection, treatment and reuse/disposal) for densely populated areas.
Storm water management	4. Enhance storm water management in urban areas to mitigate impacts on properties, infrastructure, human health and the environment.
Solid waste management	5. Implement integrated solid waste management in ways that are protective to human health and the environment.
E-waste, industrial waste, nuclear waste and health-care waste	6. Ensure safe management of e-waste, Industrial wastes, nuclear waste and health-care waste.

institutional sector framework	7. Develop the sanitation sub-sector's institutional and capacity-building framework.

7. POLICY DIRECTIONS

7.1 OBJECTIVE 1: Raise and sustain household sanitation coverage to 100 per cent by 2020

Individual on-site systems will remain the sanitary solution for the large majority of Rwandan households in reaching the overall coverage objective. *Modern individual sanitation* shall be designed and made available and affordable to the households and operated by them in order to provide affordable and high standings of services. The development of the modern individual sanitation shall take into account disabled people.

7.1.1 Establish a cooperation framework for a comprehensive inter-sectoral program to promote improved household sanitation and behaviour change

A firm, permanent framework of cooperation will be established to coordinate the interventions of the different government institutions involved in sanitation and hygiene promotion – essentially the MoH, MININFRA, WASAC, Ministry of Local Government (MINALOC), MINEDUC and the districts. As stated earlier, MoH, with the involvement of MINALOC, will continue to be the lead in individual sanitation and hygiene promotion at the community level, essentially through its national Community-Based Environmental Health Promotion Programme (CBEHPP). WASAC, on the other hand, will be responsible for the development, evaluation and support of adequate technical sanitation solutions. As sanitation and hygiene components are lagging behind, they shall continue to be incorporated in each water supply project.

7.1.2 Raise sanitation coverage by enhancing the demand for sanitation through a combination of measures

In order to achieve universal access to sanitation in 2018, Rwanda shall improve, replace or build every year almost 500,000 (mostly individual) sanitation facilities – i.e., improved latrines in urban and rural areas. Households are today the country's largest financiers of sanitation, devoting substantial resources to developing their own on-site facilities. Thus, ownership and behaviour change are critical steps for sustainably increasing sanitation coverage and improving hygiene practices, including proper use and maintenance of latrines, hand washing at critical times, safe water storage and handling, as well as improved access to local materials and services.

Government institutions shall therefore focus on promotion and facilitation, while households will remain the main investor. Well-designed sanitation programmes have shown leverage ratios of up to 1:10 between public and private investments.

The demand for improved sanitation shall be promoted through a combination of measures, including:

(i) awareness campaigns related to visible and non-visible health impacts of poor sanitation and aiming at behaviour change;

(ii) marketing the adequate sanitation offer (supply side), targeting people's expectations and preferences such as comfort, status, health benefits, value or safety;

(iii) education and training in schools and universities; and

(iv) provision of limited and selective material incentives or targeted subsidies for the poor and the vulnerable to accelerate the improvement, construction or replacement of sanitary

facilities.

In line with Rwanda's Human Settlement Policy (2009), incentives for new or improved sanitary facilities shall be targeted to the population in densified and actual or planned Imidugudu settlements.

The MoH, through the CBEHPP, shall strengthen the focus on issues and practical solutions for domestic and community sanitation and hygiene. In addition, sanitation improvement promotion shall rely on Rwanda's particular *Umuganda*, *Ubudehe and Kuremera* programmes to target and support (poor) households within the context of communities.

7.1.3 Develop private-sector capacities for improved sanitation

The sanitation implementation programme shall foster enabling conditions for the development of the private sector, which shall produce building materials, construct facilities and provide services such as sludge removal and, eventually, financing facilities. Among the approaches to be considered are vocational and commercial training programmes, the Labour Intensive Local Development Programme and output-based aid.

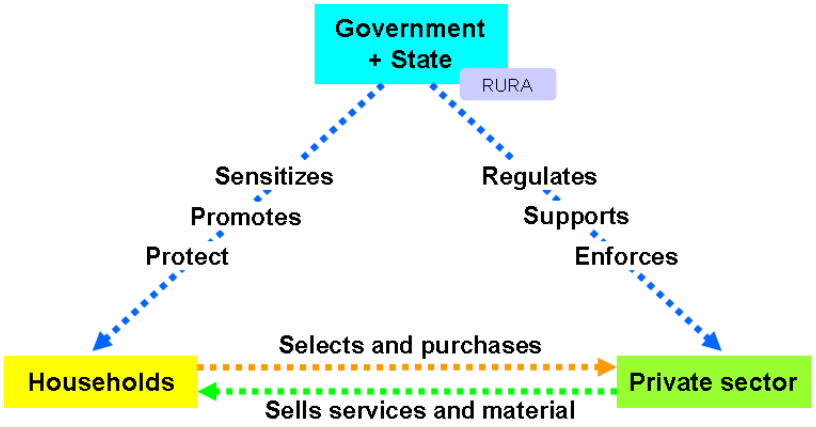

Figure 2: Repartition of roles for the development of individual sanitation projects

7.1.4 Develop, pilot and demonstrate a range of individual sanitation technologies for different standings

The joint sanitation programme shall promote systematic research and development of affordable and inclusive hygienic on-site individual sanitary solutions, including the provision of manuals. For rural and urban households without individual water connections, the programme shall prioritize waterless excreta disposal or solutions using grey water while strongly promoting the use of water for hygienic purposes such as hand washing. Technical solutions may include composting facilities such as alternating twin ventilated improved pit latrines, fossa alterna, ecosan, arbour loo and pour-flush toilets, as well as rainwater harvesting and reuse of waste water in accordance with environmental risks, users' attitudes, acceptability and affordability. Collective toilets including biogas facilities are considered feasible solutions in densified settlements or in combination with livestock since a majority of private household own livestock.

Practical field testing, construction of sanitary showrooms, dissemination of knowledge and scaling up as well as sanitation marts shall be done at district level and involve Rwanda's academic and professional sector, private investors as well as the international community. The Rwanda Standards Board (RSB) shall be involved in the standardization of sanitation technologies in accordance with environmental requirements.

7.2 OBJECTIVE 2: Implement improved sanitation for schools, health facilities and other public institutions and locations

Sanitary facilities of public institutions, in particular schools and health centres, shall demonstrate a clear exemplary function for the population.

7.2.1 Implement a joint programme to provide hygienic sanitary facilities and promote hygiene in all schools, health centres and other public institutions

The role of the school Hygiene Clubs shall be reinforced, and all educational and health infrastructure projects and programmes shall include a sanitation part addressing both structural and non-structural (soft) elements such as awareness promotion.

Well-built public toilets meeting norms and standards and convenient to disabled people in places of high frequencies such as markets shall allow promoting public health and lowering risks of diseases. In Kigali and secondary cities, especially in business centres and shopping malls, accessible and visible public toilets shall be incorporated in such buildings instead of providing a special space for public toilets. Special emphasis must be given to the proper management of public latrines that can be delegated to the private sector or associations.

7.3 OBJECTIVE 3: Develop safe, well-regulated and affordable off-site sanitation services for densely populated areas

Off-site collective sewerage shall be confined to areas where it can be demonstrated that it is more favourable than individual sanitation, considering affordability, technical feasibility (settlement density, water consumption, infiltration rate) and environmental requirements.

Off-site collective sanitation services combine infrastructure elements (e.g., sewerage systems, treatment plants) as well as service functions (e.g., sludge collection from septic tanks) that involve public and private actors and different sectors (infrastructure, environmental health and environment). Adequate institutional interfaces and regulations are yet to be developed.

7.3.1 Establish an effective regulatory and institutional framework for collective sewerage and sludge management

The development of an effective regulatory framework will start with a review and harmonization of the existing laws, standards and regulations based on the evaluation of the actual *enforcement practices* throughout the country.

Intensive consultations shall be held with the health and environment sector institutions with a view to develop concrete operational guidelines and procedures. The executive responsibilities and cooperation modalities shall be clarified by defining and separating regulatory, operational and supporting roles down to district and sector levels and shall include the supporting capacity-building concept for investment management and service provision.

7.3.2 Promote viable, low-cost approaches for collective sewerage schemes

In order to deliver an affordable public service in line with demand in the city of Kigali and densified urban centres with piped water, the following off-site technology options for collection and treatment technologies shall be prioritized:

1. Simplified, condominial or small-bore (solid free, simplified) sewerage systems, depending on the situation;
2. Off-site collection of grey water (through sewerage) and on-site collection and treatment of excreta where existing toilets or waterless latrines are already providing a safe level of service; and

3. Conventional sewerage with separate collection of domestic wastewater (separate from rainwater drainage).

In addition, innovative management models shall be encouraged, such as community or privately operated decentralized sewerage systems.

Wastewater treatment technologies and classified effluent standards shall be implemented in phases, based on a careful evaluation of environmental and financial viability criteria. Innovative technologies and approaches for the reuse and recycling of side products (sludge in agriculture, treated wastewater for irrigation and watering) shall be piloted and replicated.

7.3.3 Implement cost recovery for collective sewerage systems

Based on the *user-pays principle*, WASAC and other commercial operators shall recover operational costs for urban wastewater services by user fees. The principle shall be applied progressively starting to recover the full operating costs for wastewater collection networks and treatment plants. The recovery of investment costs of the fixed assets shall commence at a later stage, taking into account the financial capacity of the clients (polluters).

Communities shall be involved in the decision and implementing process with regard to project planning, construction and maintenance of simplified sewerage systems, with the option to contribute in kind to reduce costs (lower tariffs).

Industries normally enjoy a higher financial capacity than households and the polluter-pays criterion shall be fully enforced. Tariffs shall consider both wastewater volumes and the nature and level of toxicity. Requirements regarding the standards of wastewater (pre-) treatment will be defined, depending on the local conditions, and enforced over time, taking the financial capacity of the industry into account.

7.3.4 Prepare sanitation master plans for all urban areas

In cooperation with the respective districts/the City of Kigali and other concerned institutions like REMA, the Sanitation sub-sector shall prepare or update sanitation master plans for all urban areas and grouped settlements.

These sanitation master plans will include at least the following intervention areas:

- identify zones for on-site sanitation and collective, off-site sewerage;
- focus on simplified, affordable solutions for collective sanitation;
- outline affordable solutions for pit and septic tank emptying services and sludge disposal based on contamination risk analysis;
- identify critical polluters such as industries, hospitals and slaughterhouses, and suggest solutions for treatment by conducting an Environmental Impact Assessment;
- identify types and locations of sludge disposal facilities and, if applicable, of treatment plants; and
- Outline storm water and solid waste concepts (*see below*).

7.4 OBJECTIVE 4: Enhance storm water management in urban areas to mitigate impacts on properties, infrastructure, human health and the environment

Urban storm water runoff causes a range of negative impacts, including damages to infrastructure, environmental health hazards and pollution of water resources. Urban storm water management being cross-cutting in different sectors, its improvements need cooperation with other sectors in the fields of urban planning, erosion control and environmental health.

7.4.1 Build the institutional and regulatory framework for cooperation and support in storm water management

MININFRA will take the initiative to establish a framework for joint action involving the main actors of the sub-sector – i.e., the city of Kigali, the districts, and other ministries or agencies concerned. This includes the clarification of responsibilities for preventive and emergency actions, the harmonization of laws and regulations, the identification of gaps, and the initiation of joint planning and coordination mechanisms.

The key issue is the integration of preventive measures in storm water management in urban areas and land use planning. Damages and expensive constructions (e.g., large drainage systems) and remedial measures shall be minimized by preventive soft concepts, such as the Low Impact Development approach, which aims to manage storm water close to its source and treat it as a resource rather than a waste product. As enforcement, some measures shall be taken for the storm water and rainwater management by incorporating this component in the construction permit requirements, especially in the City of Kigali and other secondary cities, for special cases of public buildings and larger private buildings. For that, the Rwanda Housing Authority shall be involved by elaborating directives and guidelines related to storm water and rainwater management at the compound level. Additionally, rainwater collection at the building level shall continue to be promoted as another means to decrease the risks of runoff impacts and to increase water availability for hygienic purposes.

7.4.2 Support districts and the City of Kigali in integrated planning in urban storm water management

The preparation of storm water management plans for urban areas that are linked to wastewater management shall be part of the district sanitation master plans facilitated by Urbanization and Rural Settlement within MININFRA. These shall identify measures to reduce storm water runoff (Low Impact Development approach) in urban areas, avoid stagnant water (vector control), prevent erosion and sediment accumulation and minimize the pollution of water resources.

7.5 OBJECTIVE 5: Implement integrated solid waste management

7.5.1 Follow the waste hierarchy approach for maximum impact and cost efficiency

Poor management of solid and liquid waste from households or businesses can undermine endeavours of economic development and spread disease and discomfort. Priority shall be given to the minimization of waste and the enhancement of solid and liquid waste management in urban areas. Today, a wide array of technologies is available for waste collection, treatment and disposal. However, implementing activities shall be based on concepts and technologies to be evaluated within the integrated policy framework in terms of social acceptance and financial and technical feasibility.

This approach is called the "waste hierarchy". It is a classification of waste management priorities in order of their impact and cost efficiency. The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste.

Figure 3: The waste hierarchy

Source: United States Environmental Protection Agency[7]

7.5.2 Develop an integrated approach for solid waste management in Rwanda

Integrated solid waste management provides an international accepted framework for understanding and tackling the problem. Such management means the integration of (i) all stakeholders; (ii) the technical waste system elements such as prevention, reuse and recycling, collection, transport, treatment and recovery, and final and disposal; as well as (iii) less obvious aspects such as sociocultural behavioural patterns, and environmental, institutional, political and legal issues to be taken into account when implementing and managing the system.

To develop integrated solid waste management, MININFRA shall work in close coordination with public, private and NGO stakeholders, and in particular with the ministries responsible for the environment and environmental health. Integrated solid waste management strategies, and master and implementation plans shall mobilize all stakeholders and be established at the district level, with a differentiated approach for rural and urban areas and a special focus on Kigali.

7.5.3 Facilitate solid waste collection and transportation

Solid waste will be sorted, collected and transported for disposal. Effective waste collection and transportation systems should be put in place by the competent authority. Standards and specification for waste storage containers as well as waste transportation vehicles will be put in place by the competent authority.

On-site and off-site transportation of waste should be conducted so as to prevent and minimize spills, releases and exposures to the public.

7.5.4 Encourage waste reuse and recycling

There should be waste prevention strategies where the total amount of waste may be significantly reduced through the implementation of recycling plans. Such strategies shall consider the following elements:

- Evaluation of waste production processes and identification of potentially recyclable materials;
- Identification and recycling of products that can be reintroduced into the manufacturing process or industry activity;

[7] <www.epa.gov/homeland-security-waste/waste-management-hierarchy-and-homeland-security-incidents>.

- Establishing recycling objectives and formal tracking of waste generation and recycling rates; and
- Provide training to sanitation service providers on waste recycling.

7.5.5 Waste disposal

Sanitary landfills and incineration methods will be used to dispose of municipal and non-municipal solid waste. All garbage, household hazardous waste, construction waste, demolished waste, industrial waste, recyclables and rubbish shall be disposed of at the municipal landfill or any other waste disposal facility approved by the competent authority.

The waste management competent authority and/or municipalities shall classify categories of solid waste hauled to the municipal landfill for disposal. Categories will include, among others, household solid waste, commercial waste, industrial waste, household hazardous waste, regulated asbestos, construction/demolition waste, commercial waste, wood waste, earth materials, metals, materials requiring incineration including, but not limited to, animals, and biomedical waste.

Incinerators will be used for hazardous waste and health-care waste which cannot be disposed using conventional treatment due to its toxicity. Incineration will be used to destroy pathogens and toxins while reducing waste content. Landfill and incinerator management guidelines will be put in place by competent authorities.

7.6 OBJECTIVE 6: Ensure safe management of e-waste, industrial waste, nuclear/radioactive waste and health-care waste

Outdated electronic equipment, industries, different health-care facilities as well as energy and mining activities generate waste that is dangerous to the environment and human health. In this context, special treatment of waste generated through such activities is needed. Specific policies and tools to provide a detailed direction of managing such waste shall be developed by concerned ministries/institutions.

The following policy statements have been provided to ensure safe management of the waste mentioned under objective 6.

7.6.1 Establishment of e-waste collection and management framework

The positive economic development in the country prompts a larger part of the population to purchase electrical and electronic equipment, thus generating e-waste. Such e-waste poses a threat to the environment if not properly collected, segregated and treated.

The volume of waste electrical and electronic equipment grows rapidly every year and is also believed to be one of the most critical waste disposal issues of the twenty-first century. The United Nations University estimates that 20 million to 50 million tonnes of e-waste are being generated per year worldwide. To this effect, the Ministry in charge of Information and Communication Technology shall fast-track the finalization of the E-Waste Policy currently under development. For better implementation of this policy, the regulator will develop regulations for e-waste collection and management taking into account the waste management hierarchy approach.

Strategically located e-waste collection centres, drop-off points and a dismantling facility will be established through public-private partnerships (PPPs) to provide a secure and environmentally conscious solution for the sorting and segregation of e-waste into reusable streams. E-waste collected from collection centres, drop-off points or individual institutions will be properly transported to the dismantling facility.

Technical specifications and other requirements for the establishment of the dismantling facility, collections centres and drop-off points will be provided for in the e-waste management regulations and guidelines.

7.6.2 Reinforce the industrial waste management framework to minimize environmental pollution and eliminate dangers to human health

Industrial waste treatment facilities will be provided at industrial premises by the industry owner and the effluent will comply with national standards, guidelines and regulations for discharge into a public sewer and environment. Effluent disposal standards, industrial wastewater management regulations and guidelines will be developed by competent authorities.

For industrial parks, the developer shall ensure that a centralized treatment plant is developed, operated and well maintained. Individual pre-treatment of industrial waste will be the responsibility of the industry/factory owner.

Improved and appropriate industrial waste management will require development of a specific industrial waste management policy, regulations as well as industrial waste management guidelines by the concerned ministries/institutions/authorities. To this effect, the regulator shall develop the regulations while the guidelines shall be developed by the ministry having industries under its responsibilities.

7.6.3 Develop a radioactive/nuclear waste management framework

The policy framework for nuclear waste management has not been in existence and the Government of Rwanda recommends the development of a national radioactive waste management policy that shall provide direction for proper management and disposal of radioactive/nuclear waste.

MININFRA shall develop the radioactive/nuclear policy in consultation with key stakeholders, particularly the ministry in charge of natural resources. The legislative and regulatory framework regarding the safe management of radioactive/nuclear waste shall also be established. The framework will include a system for licensing radioactive waste management activities.

The Government of Rwanda shall ensure strengthened partnership with the private sector for sustainable and effective radioactive waste management. Coordination and cooperation between ministries/institutions shall equally be important due to the cross-cutting nature of radioactive waste management.

7.6.4 Strengthen the policy framework for the management of health-care waste

Health facilities produce waste during the diagnosis, treatment and carrying out of research. Annually, the health-care facilities produce large quantities of infectious, pathological, sharps, chemicals, pharmaceutical and radioactive waste, and have been guided by the National Policy on Injection Safety, Prevention of Transmission of Nosocomial Infections and Health-Care Waste Management (2009).

Given the specialty of health-care waste, special disposal sites shall be established whereby the MoH shall work closely together with districts for the site selection. The MoH will continue to collaborate with MINALOC and district authorities, district health facilities as well as all other stakeholders, especially the private sector, to ensure the effective management of health-care waste.

The heath sector shall continue to take the lead in the health waste management initiatives in collaboration with the districts and the health facilities within the districts. To ensure effective health-care waste management, the policy of 2009 shall be reviewed to incorporate the newly

adopted SDGs. Each health facility shall be responsible for managing its waste, from the point of generation to final disposal.

7.7 OBJECTIVE 7: Develop the sanitation sub-sector's institutional and capacity-building framework

In the recent past, the WSS sector has undergone significant institutional changes, including the creation of WASAC, the systematic introduction of delegated management (PPP), the emerging role of RURA in regulation, the overall move towards a SWAp with the creation of a SWAp secretariat and the delegation of implementation responsibilities to the districts. In addition to ensuring the smooth cooperation of government entities, the sector is also further strengthening mechanisms to consult and involve non-government stakeholders and to ensure sector-specific monitoring and knowledge management.

This section subsumes the institutional undertakings needed to consolidate the recent gains of the institutional change and make this sector framework functional, as well as ensure further acceleration of sanitation service delivery and hygiene promotion. Further work on an in-depth intuitional gap analysis is recommended as part of the policy implementation action plan.

7.7.1 Promote sector harmonization and aid effectiveness by developing a sector-wide approach

The implementation of the sanitation policy/strategy shall be based on a SWAp. Formally agreed between MININFRA and its key development partners (multilateral agencies and bilateral donors), the SWAp is understood as an inclusive process involving all relevant stakeholders including government institutions, civil society (NGOs), the private sector and user communities.

In developing the SWAp, a gradual approach will be adopted, based on successive steps depending on the readiness of key partners and aligned with the build-up of national and decentralized capacities. Harmonized action will be advocated on the basis of its added value to sector stakeholders (efficiency, lesser transaction costs, coherent monitoring, etc.), but with a medium-term focus on the creation of sustainable structures and capacities, reducing parallel implementation arrangements and modalities. Special emphasis will be paid in the SWAp dialogue to ensure that districts will have access to predictable harmonized finances.

Partners agree on joint objectives, principles and operating procedures. A joint financing mechanism based on government systems will be created but does not exclude other aid modalities as long as the agreed principles are observed.

In the context of a SWAp, the WSS sector attaches importance to creating a sector community that involves all stakeholders including, but not limited to, central and local government institutions, development partners, NGOs, user communities, researchers and the private sector. Communication will be maintained through regular Sector Working Group meetings and annual joint sector reviews, as well as by a dedicated website maintained by the SWAp secretariat. All sector actors, including NGOs, shall adhere to joint reporting standards and requirements.

The communication strategy addressing the general public will include messages on good practices, hygiene awareness and user rights and responsibilities, to be disseminated through different media and specific materials for schools.

7.7.2 Re-define and consolidate institutional roles and coordination mechanisms

The recent or undergoing changes of the sector's institutional set-up call for a redefinition of each actor's roles and responsibilities, as well as for the establishment of effective coordination mechanisms. In particular, the sector undertakes to clarify the following aspects and initiate the related formal arrangements with regard to:

a) Cooperation modalities with district local governments, including technical and financial support and monitoring arrangements;
b) Cooperation with RURA regarding the regulation and oversight of PPP arrangements, regulation of urban utilities (currently WASAC) and surveillance of tariffs;
c) Coordination with urbanization, housing and other land use plans, including, in particular, the development of Imidugudu and cooperation between Kigali City Council and the utility in Kigali;
d) Establish an effective regulatory and institutional framework for collective sewerage and sludge management; and
e) Build the institutional and regulatory framework for cooperation and support in storm water management.

7.7.3 Strengthen the existing monitoring and evaluation and performance measurement framework

A comprehensive M&E and performance measurement system is a sector priority and a basis for consistent, results-oriented management and an evidence-based policy dialogue in the context of a SWAp. The system shall be linked to the overarching, cross-sectoral M&E systems (EDPRS/Common Performance Assessment Framework) on the one hand, and to district systems on the other hand. A small set of representative 'golden' indicators will be defined to facilitate the communication and monitoring of overall sector performance. All relevant information, including, in particular, a national database of water supply facilities (including information on functionality) will be held in the MIS.

To strengthen the existing M&E system and to compile the necessary information, a reliable data collection and reporting protocol will be set up in cooperation with the districts and partners, aligning as far as possible with their regular reporting mechanisms. A reliable baseline will be established by conducting a national inventory of existing infrastructure. Definitions and calculation methods will be agreed with the National Institute of Statistics to make administrative data collection comparable with national household surveys.

In light of the recent adoption of the 2030 Agenda for Sustainable Development, the Government of Rwanda has committed itself to report on the progress made on achieving the SDGs. These international monitoring requirements can also be seen as an opportunity to revise and update the existing sector performance monitoring systems, as mentioned above, and in line with the aspirational SDG targets and definitions, which already formed the basis for the revision of the National Sanitation Policy and Strategy.

7.7.4 Formulate a capacity development programme, including the development of professional training and education in water supply and sanitation-relevant fields

An overall capacity development programme will be developed based on an assessment of capacity gaps and training needs for the different sector actors. Among the levels to be considered are:

a) Technical assistance and strengthening of MININFRA and the SWAp secretariat to effectively manage and oversee the implementation of the policy/strategy;
b) Technical training for district, WASAC and private-sector staff;
c) Training of trainers for participatory mobilization and sensitization activities;

d) Advanced training for WSS sector officers (WASAC, RURA, district engineers, etc.); and
e) Academic education in engineering, environmental health and other relevant fields at universities and research institutions.

However, training will be only one part of the overall capacity-building programme. The comprehensive capacity-building programme will also have to address i) institutional; ii) organizational; and iii) individual capacities.

The concept will be based on cooperation with existing training and educational institutions for academic education and research and development.

Annex 1: Sanitation-related statement in the Rwanda development flagships

SN	Rwanda Development Flagship	Statement
1	Vision 2020	Section 4.4, Infrastructure Development: By 2020, the rural and urban areas are to have sufficient sewerage and disposal systems. Each town is to be endowed with an adequate unit for treating solid wastes. Households will have mastered and be practicing measures of hygiene and waste disposal.
2	EDPRS 2 2013/18	EDPRS 3.17: Sanitation will reach rural communities through public and private investment EDPRS 3.21: Sanitation is mentioned among the pull factors to incentivize rural populations to move to formal settlements EDPRS 3.61: Water supply and sanitation play a critical role in preventive healthcare and socio-economic development in rural areas. Notably, hygiene and sanitation is a strong complement to effective access to clean water. EDPRS 3.82: The goal for EDPRS 2 is to ensure universal access to water and sanitation. EDPRS Monitoring Matrix: Outcome 8, Increase access to basic infrastructure at the urban level; Target for urban households with access to improved sanitation facilities: 100% by 2017/18 EDPRS Monitoring Matrix: Outcome 12, Increase access to basic infrastructure for rural households; Target for rural households with access to improved sanitation facilities: 100% by 2017/18
3	Seven-year Government Programme (2010–2017)	Quote from government programme (2010–2017), p. 39: With regard to water and sanitation, the number of Rwandans using clean water will be 100%, whereas the number of those with proper sanitation infrastructure will increase from 45% to 100% by 2017.

Annex 2: List of documents used for the policy review

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23. Monitoring Levels of Service and Sustainability, Akvo FLOW, Water for People.

24. National Guidelines on Health-Care Waste Management, February 2016.

25. National Health-Care Waste Management Standard Operating Procedures, February 2016.

26. National Policy and Strategy for Water Supply and Sanitation Services, MININFRA, February 2010.

27. National Policy on Injection Safety, Prevention of Transmission of Nosocomial Infections and Health-Care Waste Management, 2009.

28. ODI Report, 'Private Sector and Water Supply, Sanitation and Hygiene', Mr. Nathaniel Mason, Ms. Mariana Matoso and Mr. William Smith, October 2015.

29. Order No. 71/18: Public Hygiene and Sanitation, Enforced in Rwanda by ERO no. 71/106 of 20 July 1949.

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44. Wastewater treatment plants, Part 4: General data required, RBS 2012.

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