Eastern and Southern Africa Water and Sanitation
Regulators Association

REGULATION STRATEGY AND FRAMEWORK FOR INCLUSIVE URBAN SANITATION SERVICE PROVISION INCORPORATING NON-SEWERED SANITATION SERVICES

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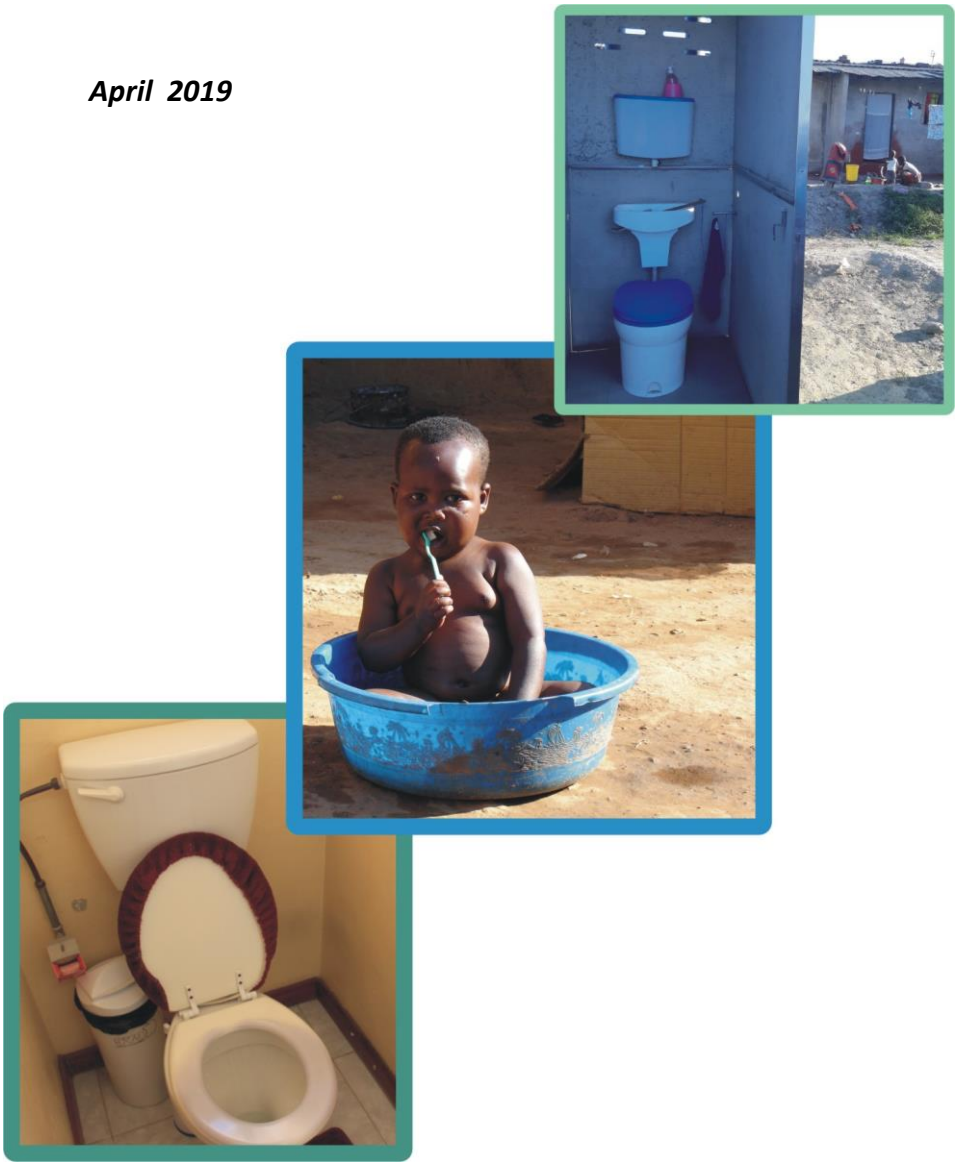

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Abbreviations and Acronyms

AdeM	Águas da Região de Maputo
AIAS	Water and Sanitation Infrastructure Administration - Mozambique
AREEN	Autorité de Régulation des secteurs de l'Eau potable et de l'Energie - Burundi
AURA,IP	Autoridade Reguladora de Águas, Instituto Público - Mozambique
BWB	Basin Water Boards - Tanzania
CBOs	Community Based Organisations
CRA	Conselho de Regulação de Águas - Mozambique
CUs	Commercial Utilities - Zambia
DEWATs	Decentralised Waste water Treatment Plants
DNA	National Directorate of Environment -Mozambique
DNAAS	National Directorate of Water Supply and Sanitation - Mozambique
EWURA	Energy and Water Utilities Regulatory Authority -Tanzania
FIPAG	Fund for Investment and Assets of Water Supply -Mozambique
FS	Faecal Sludge
FSM	Faecal Sludge Management
GDP	Gross Domestic Product
KPI	Key Performance Indicator
LGA/LA	Local Government Authority
LEWA	Lesotho Electricity and Water Authority
NEMA	National Environmental Management Authority - Kenya
NEMC	National Environmental Management Council -Tanzania
NESCRA	National Environmental Sanitation Coordination and Regulatory Authority -Kenya
NGOs	Non-Governmental Organisations
NWASCO	National Water Supply and Sanitation Council -Zambia
OSS	Onsite Sanitation Services
PPP	Public Private Partnership
QGD	Delegated Management Framework (Quadro de Gestao Delegada) -Mozambique
QOSSS	Quality of Service and Supply Standards
REDIGESO	Water and Electricity Utility, Burundi
REMA	National Environmental Authority - Rwanda

RURA	Rwanda Utilities Regulatory Authority, Rwanda
SDG	Sustainable Development Goal
SETEMU	Municipal Engineering Services, Burundi
SR	Sanitation Regulator
SU	Sanitation Utility
UDDTs	Urine Diverting Dry Toilets
VIP	Ventilated Improved Pit
WASAC	Water and Sanitation Corporation
WASCO	Water and Sewerage Company -Lesotho
WASREB	Water Services Regulatory Board -Kenya
WHO	World Health Organisation
WRA	Water Resources Authority -Kenya
WSB	Water services Board - Kenya
WSP	Water Services Providers - Kenya
WSS	Water Supply and Sanitation
WSSAs	Water Supply and sanitation Authorities - Tanzania
WSTF	Water Sector Trust Fund - Kenya
ZEMA	Zambia Environmental Management Authority
ZEMA	Zanzibar Environmental Management Authority
ZURA	Zanzibar Utilities Regulatory Authority - Zanzibar

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PART 1

INTRODUCTION

PART I – INTRODUCTION

1.1 Structure of the Report

The Regulation Framework and Strategy for Inclusive Urban Sanitation Service Provision (incorporating non-sewered sanitation) document is divided into three parts.

Part I is the introduction which provides an overview of sanitation status internationally and regionally, and the objective of the assignment.

Part II covers the approach and methodology used to prepare the sanitation Regulatory Framework and Strategies. This part addresses methodology used for data collection and analysis, review of ESAWAS countries sanitation regulatory frameworks, which results into a Gap Analysis Report, and criteria used to prepare the sanitation regulatory framework and strategy.

Part III covers a review of ESAWAS countries' existing sanitation regulatory frameworks and identifies key observations, gaps and overlaps of the existing sanitation policies, legislation, institutional arrangement and technologies used in the sanitation service chain and recommendations which are input in the preparation of the regulatory framework and strategy.

At the end, Part IV covers the proposed sanitation regulatory framework and strategy in the ESAWAS region with focus on sanitation policy, sanitation legal framework, institutional set up and roles and responsibilities along the sanitation supply chain. This part also assesses implementation preparedness of ESAWAS regulators to implement the proposed regulatory framework and strategy. It also provides Strategy for Implementation of the Sanitation Framework and indicators for monitoring the implementation of the strategy.

1.2 Background

1.2.1 ESAWAS Profile

The Eastern and Southern African Water and Sanitation (ESAWAS) Regulators Association is a network of Water Supply and Sanitation (WSS) Regulators, formed in 2007 to enhance the regulatory capacity of members to deliver quality and effective regulation to achieve public policy objectives through cooperation and mutual assistance.

Eight autonomous WSS Regulators are thus cooperating on issues of mutual concern and interest in the areas of water supply and sanitation economic and technical regulation. These are: the Water Services Regulatory Board (WASREB) of Kenya; the Autoridade Reguladora de Águas, Instituto Público (AURA,IP) of Mozambique (formerly CRA); the Rwanda Utilities Regulatory Authority (RURA) of Rwanda; the Energy and Water Utilities Regulatory Authority (EWURA) of Tanzania; the National Water Supply and Sanitation Council (NWASCO) of Zambia; the Lesotho Electricity and Water Authority (LEWA) of Lesotho; the Autorité de Régulation des secteurs de l'Eau potable et de l'Energie (AREEN) of Burundi and the Zanzibar Utilities Regulatory Authority (ZURA) of Zanzibar.

All the ESAWAS Regulators have generally been mandated to undertake both economic and technical regulation of WSS service provision to ensure a balance between the quality of the service, the interests of consumers and the financial sustainability of the providers. The overall objective of having an association of regulation is to enhance capacity through exchange of experiences, cooperation and support among regulators to ensure efficient, affordable, reliable and quality services while balancing the commercial interest (sustainability) with that of social consideration.

1.2.2 Overview of Sanitation Situation

Faecal sludge is the excreta and wastewater that accumulates in onsite-sanitation technologies. It needs to be safely contained onsite, and then the accumulated faecal sludge needs to be safely emptied, transported to a treatment plant, treated, and used for resource recovery or disposed of safely.

Figure A: Sanitation Service Chain

However, it is imperative to note that most faecal sludge is not properly managed with a lack of adequate and safe emptying, no treatment plants, and illegal dumping directly in the environment.

1.2.2.1 The Global Situation[1]

After decades of promoting sanitation in low and middle-income countries, decision-makers in several countries and within the global sanitation community realise that it is time to rethink the approach to accelerating access to quality services. Since 2000, the WHO/UNICEF Joint Monitoring Programme of the Millennium Development Goals (MDGs) has consistently reported that the share of the population in low and middle-income countries that use pit latrines, septic tanks and systems termed as 'unimproved' sanitation facilities is growing.

It is now estimated that between 2.1 and 2.6 billion people in low and middle-income countries rely on onsite technologies that produce tons of untreated faecal sludge (FS) every day. When septic tanks and pit latrines become full, the sludge that is collected from them is largely discharged untreated into open drains, irrigation fields, open lands or surface waters. The amount of untreated FS discharged into the open environment poses a serious public health risk. A $5m^3$ truckload of FS dumped into the environment is the equivalent of 5,000 people practising open defecation. Adding to this is the heavy load from raw faeces excreted in the open by an additional 892 million people who still do not have access to any toilet.

The consequences of this waste entering the environment are staggering. The World Bank estimates that poor sanitation costs the world 260 billion USD annually. Poor sanitation contributes to 1.5 million child deaths from diarrhoea each year. Chronic diarrhoea hinders child development by impeding the absorption of essential nutrients that are critical to the development of the mind, body and immune system. It can also impede the absorption of life-saving vaccines

[1] Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia

In response to the lack of access to basic sanitation, the United Nations defined the target of Goal 7 of the MDGs to halve the proportion of the population without access to improved sanitation facilities during the period from 1990 to 2015 (United Nations, 2015).

1.2.2.2 Regional Situation

A key target for all water supply and sanitation regulators is the attainment of Sustainable Development Goal (SDG) 6 'Ensure availability and sustainable management of water and sanitation for all'. Specific targets include SDG6.1 'By 2030, achieve universal and equitable access to safe and affordable drinking water for all' and SDG6.2 'By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations'

The 2016/17 ESAWAS Regional Benchmarking Report of Urban WSS Utilities from the eight members of ESAWAS showed that while urban water service coverage ranged from 55% to 90% among the countries, urban sanitation coverage by sewer network ranged from 4.2% to 27.4% (See Table A).

Table A: 2016/17 Urban Service Coverage by ESAWAS Member Countries

	Total Urban Population	Water Coverage	Sewerage Coverage
Kenya	20,138,579	55.0%	16.0%
Tanzania	17,141,210	63.0%	4.2%
Zambia	6,696,266	85.1%	27.4%
Mozambique	6,337,702	57.2%	N/A
Rwanda	3,406,846	85.2%	N/A
Zanzibar	1,505,232	90.0%	10.3%
Burundi	800,732	83.0%	N/A
Lesotho	685,938	58.9%	5.4%
TOTAL	**56,712,505**	**64.4%**	**10.5%**

Despite the data gaps from Mozambique, Rwanda and Burundi, it is evident that an estimated 89.5% or over 50.76million people of the combined urban population in the eight ESAWAS member countries depend on non-sewered sanitation solutions. This scenario is consistent with statistics among other countries in the region.

Even at this coverage level, often sewers are not connected to treatment plants or the plants are not operating well, resulting in untreated discharge of wastewater in the soil or water bodies. Furthermore, the efficacy of the sanitation value chain of containment, emptying, transportation, treatment and disposal/reuse is only about 20%, thereby posing a serious risk to public health (reduced productivity, high healthcare costs and premature deaths) and the environment (water pollution). The most impacted by the low sanitation coverage by network are the population in low-income areas, who tend to be the majority and are not on the sewer network.

Low sewerage coverage levels in comparison to water supply coverage are majorly attributable to the high cost of investment required for sewerage infrastructure which tends to be an inhibiting factor. Significantly increasing the population served by sewer networks may not be reasonably feasible to reach the SDG target for universal access due to the huge investment gap relative to the limited financing available.

1.3 The Rationale

The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) responsible for tracking progress towards the 2030 Sustainable Development Goal (SDG) targets related to drinking water, sanitation and hygiene has introduced service ladders to benchmark and compare progress across countries. For sanitation, the highest ladder is safely managed sanitation service which means that people should use improved sanitation facilities that are designed to hygienically separate excreta from human contact and that are not shared with other households. This has raised the bar beyond simple measurement of access but to also include management of faecal waste. The SDGs seek not only to increase the number of people using sanitation, but also to progressively improve the quality of the services being provided, allowing more attention to be provided to the collection of data on emptying, disposal and treatment of excreta. Therefore, the measure of success is now much higher as it is not just based on access to a basic sanitation service but access to safely managed sanitation service. Based on the SDG measure, it is estimated that at least 4 Billion people world-wide may lack access to safely managed sanitation services. Hence, decision-makers in several countries, including ESAWAS members, have come to realise that there is a need to rethink the approach to accelerating quality sanitation services.

Achieving the 2030 target of safely managed sanitation services requires an inclusive urban sanitation approach that combines both sewered and non-sewered sanitation services. A major challenge to improving non-sewered sanitation service delivery in the member countries is the absence of a regulatory framework to address the full value chain of non-sewered sanitation (containment, emptying, transport, treatment, and disposal/reuse). The sanitation value chain has been neglected both in the delivery of service as well as in regulation. Environmental regulators typically license for environmental protection (e.g. vacuum tankers, effluent discharge into the environment), however, the actual provision of the service is not regulated. Currently, none of the WSS member regulators of ESAWAS have incorporated non-sewered sanitation service provision in their regulatory frameworks.

Despite having the regulatory mandate, there are no guidelines, regulations or national standards to specifically address non-sewered sanitation. The absence of rules, reporting mechanisms, and enforcement procedures means that it is impossible to confidently identify past trends and current outcomes. That means that public policy cannot be driven by evidence, and keeps the extent of the problem out of the public spotlight.

The sector performance reports that members publish annually including the ESAWAS Regional Benchmarking Report remain silent on non-sewered sanitation and only have scant data on sewered sanitation. Sanitation coverage figures reported are sometimes based on a generous definition of access to sanitation which incorporates little with respect to the effective use of facilities and the corresponding service quality along the sanitation chain. In other words, they do not necessarily represent acceptable levels of service (i.e. do not guarantee the elimination of contact with human excreta and wastewater at home and within the neighbourhood). As such, services to non-sewered sanitation facilities, such as emptying and transport services, treatment and disposal/reuse have not been addressed under the existing regulation regime. The lack of regulation for onsite sanitation service provision in ESAWAS countries has resulted in poorly built local sanitation facilities, unhealthy emptying, illegal dumping, non-availability of faecal sludge treatment facilities, inadequate treatment of faecal sludge and uncontrolled pricing.

Typical service providers in the sanitation value chain include water supply and sanitation utilities involved in emptying and transport services(vacuum tankers), as well as treatment and disposal (treatment facilities); Municipality and private operators involved in emptying, transporting and

treatment of faecal sludge using unsafe means in some cases (lack of protective wear, inappropriate technology or transport etc.) and community-based organisations involved in emptying and transporting faecal sludge, who also employ unsafe methods particularly in emptying and disposal.

Apart from the Utilities which are only regulated on price charged for emptying services in some cases, all other providers and services are unregulated resulting in wide price variations to the customers and no guarantee or accountability for the quality of service delivery. As a consequence, households are unable to afford professional emptying services and resort to cheap, unsafe alternatives. Service providers on the other hand, particularly the private operators, are not able to guarantee sustainability of service delivery and thus resort to compromising on transport and treatment due to the need to recover costs for financial viability.

Consequently, recognizing that the largest proportion of the population in the urban areas of the member countries depend on non-sewered sanitation, a pragmatic approach is needed to regulate service delivery from an inclusive perspective that acknowledges sewered and non-sewered technology modes and the importance of regulatory touch points along the entire value chain of non-sewered sanitation. This means that all links of the sanitation chain need to be operated and managed sustainably to ensure continued service provision that protect both public health and the environment.

1.4 Objective

The objective of this publication is to outline a regulatory framework and strategy that integrates and addresses inclusive urban sanitation service provision (incorporating non-sewered sanitation) such that the WSS regulator can effectively administer its mandate. This regulatory framework is expected to be adopted or adapted by any WSS regulator. This regulation strategy:

(i) Recommends an appropriate regulatory framework (who, how and what to regulate) for inclusive urban sanitation service provision covering policy, legal and institutional arrangements (roles and responsibilities for effective coordination), urban service provision models across the full sanitation value chain (by Utility, Municipality, Private Sector etc.) and regulatory tools and instruments required;

(ii) Proposes the internal regulatory set-up (organisational structure) that creates focus on inclusive sanitation services incorporating non-sewered approaches (Who and how mandate is implemented - unit, department, person, job description); and

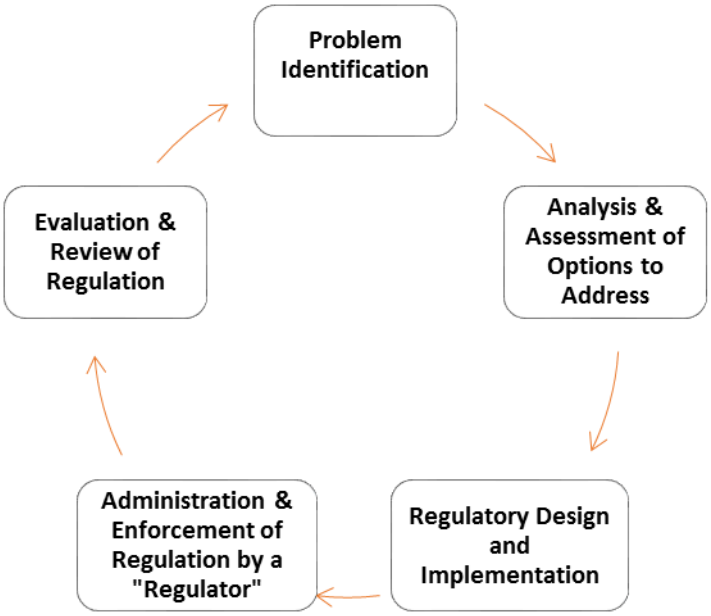
(iii) Outlines the licensing framework with options for how (license, permit, delegated management contract) and who to license across the full sanitation value chain with respect to area of service, type of technology used (septic tanks, pit latrines, etc.) and service provision responsibility (Utility, Municipality, private sector, Community Based Organisations, etc.).

The inclusive urban sanitation service provision and regulation approach needs to be incremental in nature, moving the entire system toward the SDG targets, without being excessively burdensome or costly. An early investment in data collection is essential if decision-makers are to be able to document progress. Furthermore, the involvement of key stakeholders is essential if the new regulatory regime is to be accepted by all parties.

The regulatory process can be viewed as a recurring cycle. The addition of non-sewered sanitation as a mandate under a water supply and sanitation regulator's purview has its own challenges related to legislative authority, inter-organizational collaboration, resources, professional capacity,

stakeholder engagement and other elements, Figure B[2] below illustrates the continuous nature of regulation. Adding a new set of oversight and rule-making responsibilities to an existing agency's set of tasks will require regular review of the impacts of regulatory decisions, particularly related to data collection in the early stages of the process. The regulator will need to consider both the benefits and costs of new regulations and phase requirements in ways that stakeholders view as reasonable and fair.

Figure B: The Regulatory Process: A Recurring Cycle



The Regulatory Framework and Strategy has been formulated based on various sanitation related policies, laws/acts, and decrees/regulations from ESAWAS member countries. Specifically, water and sanitation, public health, environmental, Policies, Acts/Decrees and Regulations.

[2] The Figure is taken from "Governance of Infrastructure Regulators in post-FCV Environments: Principles and Implementation Manual," 2019. World Bank Group.

PART 2

APPROACH AND METHODOLOGY

PART II: APPROACH AND METHODOLOGY

2.1 Approach and Methodology

The development of a regulation framework and strategy was conducted in four stages namely: (i) Data and Information Collection Stage; (ii) Literature Review and Analysis Stage; (iii) Review of Countries' Regulatory Frameworks Stage; and (iv) Preparation of the Regulation Strategy and Framework for inclusive Urban Sanitation Service Provision incorporating Non-sewered Sanitation Services.

2.2 Data and Information Collection

Data and Information on sanitation were collected from all ESAWAS member countries facilitated by the regulators. Key documentation collected included sanitation-related policies, legislation, licenses, rules, standards, and guidelines. Secondly, a template for collecting data and information was developed and used in collecting additional data and information on sanitation services in each country. Furthermore, in-country visits were conducted to all ESAWAS countries where working sessions/interviews were conducted with key actors along the sanitation value chain. During working sessions/interviews, data and information were verified and tested through structured discussions. A list of stakeholders met in each ESAWAS country is attached as Annex A.

2.3 Literature Review and Data Analysis

The collected data and information were analysed with respect to each country sanitation policies, laws, regulatory instruments and sanitation technologies. Likewise, various literature on sanitation was reviewed to identify good practices, existing gaps and overlaps for regulation of non-sewered sanitation services.

2.4 Review of ESAWAS Countries' Sanitation Regulatory Frameworks

A review and analysis of ESAWAS countries sanitation regulatory frameworks was done by using the Gap Analysis model. A gap analysis is a technique for determining the missing steps to be taken in moving from a current state to a desired future state. Gap analysis was conducted for each country by reviewing the country's regulatory system and identifying gaps that could be limiting to achieve the desired regulatory system that could effectively regulate urban sanitation service provision. Good practice, gaps and overlaps were identified in each country's regulatory system comprising of polices, laws, regulations and regulatory instruments. The following key areas of the regulatory framework were considered for the analysis ESAWAS countries sanitation regulatory frameworks.

i) Policy and Legal Framework

The Policy and legal framework provide an enabling environment for regulation of non-sewered sanitation. Under this component, policies, strategies and plans; and Laws, Decrees, Regulations and Rules were reviewed to identify gaps and overlaps.

ii) Institutional Framework

Under institutional framework, roles and responsibilities of institutions in sanitation; and stakeholder roles and responsibilities along the sanitation chain were reviewed.

- Roles and Responsibilities of Institutions in Sanitation

The review included the identification of roles and responsibilities of key sanitation institutions as defined in policies and legal documents and find out whether there were gaps (i.e. missing roles and responsibilities) or overlaps.

- Stakeholder Roles and Responsibilities along the Sanitation Chain

The review included the identification of roles and responsibilities of key sanitation stakeholders along the sanitation service chain.

Key stakeholders along the sanitation chain are the service providers, investors, customers and regulators. For service provision, the review includes the identification of the service provider and the service which is provided along the sanitation value chain. For regulation, the review includes the identification of the regulator, what is regulated, and the regulatory Instrument used (License, Guideline, Standards, and Standard Operating Procedures) along the sanitation chain.

iii) Sanitation Service Technologies along the Sanitation Chain

There are a variety of sanitation service technologies along the sanitation chain from capture to disposal/re-use. The desired situation is the effective use of allowed/ appropriate technologies which promote inclusiveness. Existing and allowed sanitation technologies along the sanitation chain were identified for each country and were categorized into urban and peri-urban areas. The analysis focussed on the determination of whether the allowed sanitation technology promotes equity and inclusiveness.

2.5 Preparation of the Regulation Framework and Strategy

The desired regulatory framework was prepared based on key findings and recommendations obtained from the review and analysis of ESAWAS member countries' regulatory frameworks (policies, legal frameworks and institutional set-ups) using the gap analysis results. Strategies developed to attain regulation of inclusive urban sanitation service provision incorporating non-sewered sanitation services in ESAWAS member countries aim at assisting member countries to overcome the established gaps and overlaps.

PART 3

REVIEW AND ANALYSIS OF REGULATORY FRAMEWORKS

PART III: REVIEW AND ANALYSIS OF REGULATORY FRAMEWORKS

This part elaborates a review and analysis of the ESAWAS countries' existing sanitation regulatory frameworks which includes identification of key observations, gaps and overlaps of the existing sanitation related policies, legislation, institutional arrangement and technologies used in the sanitation service chain. It ends up by providing recommendations for each key of observation and the same form inputs in the preparation of the regulatory framework and strategy.

3.1 Review and Analysis of Regulatory Frameworks (Gap Analysis)

A review and analysis of existing regulatory frameworks in ESAWAS Countries was based on policies, legislation, institutional arrangement, role and responsibilities and technologies used in the sanitation service chain. The detailed review and analysis is presented as a separate document in Annex B (Gap Analysis Report) for each ESAWAS country as follows:

Section 1: Review of Sanitation Regulatory Framework for Burundi;

Section 2: Review of Sanitation Regulatory Framework for Kenya;

Section 3: Review of Sanitation Regulatory Framework for Lesotho;

Section 4: Review of Sanitation Regulatory Framework for Mozambique;

Section 5: Review of Sanitation Regulatory Framework for Rwanda;

Section 6: Review of Sanitation Regulatory Framework for Tanzania;

Section 7: Review of Sanitation Regulatory Framework for Zambia; and

Section 8: Review of Sanitation Regulatory Framework for Zanzibar.

3.2 Summary of Key Findings and Recommendations

The sanitation definitions (Table B) are reviewed first as they provide the basis for the extent of the regulatory mandate and help to contextualise the status of the sector in a country. The next section provides recommendations for policies in the region —based on current national approaches, most of which are somewhat fragmented and incomplete (Table C). Then the review outlines the legal frameworks currently in force, with recommendations for strengthening the capability of national regulators to address NSS (Table D). Best practices in the region are then utilised to identify appropriate roles and responsibilities of institutions (Table E). Specific organisations along the sanitation chain also have roles and responsibilities that require careful delineation—the recommendations again reflect best practice in the region (Table F). Recommended regulatory instruments are identified, based on a review of regional practice and international experience (Table G). Finally, relevant sanitation technologies are identified so that the regulatory framework and associated strategies are in a position to cope with innovative techniques emerging in the sanitation chain (Table H).

3.2.1 Key Findings from Review of Sanitation Definitions

The review of sanitation definitions in the ESAWAS countries existing regulatory frameworks has come up with a compendium of definitions, and revealed several disparities. Table B is a list of sanitation definitions and respective recommendation on the sanitation definition, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table B: Key Findings from Review of Sanitation Definitions and Recommendations

	Country Findings from the Review of "Sanitation Definitions"
1	**Burundi**
	An action of collecting, evacuation of liquid waste, faecal sludge, solid waste, rain water and all substances which are bad for the health. *Source: Public Health Act*
2	**Kenya**
	The provision of on-site sanitation services including latrine, septic tanks and conservancies including the associated exhauster services. *Source: Water Act 2016*
3	**Lesotho**
	An adequate sanitation facility must meet social, cultural, technology, user satisfaction and environment friendly criteria. Adequate sanitation means access to safe excreta disposal facilities, services to households, public facilities, and disposal of liquid and solid waste without contamination of water sources, health hazards to people or deterioration of the environment. *Source: Lesotho Water and Sanitation Policy, 2007*
4	**Mozambique**
	The objective of sanitation in population centres is to ensure, under conditions compatible with public health requirements and in order to safeguard the environment, that rainwater and domestic and industrial wastewater are rapidly evacuated without stagnation. *Source: Mozambique Water Law, 1991*
5	**Rwanda**
	Quotation from the policy "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". *Source: National Sanitation Policy of Rwanda (2016)*
6	**Tanzania**
	The provision of appropriate facilities and services for the collection and disposal of human excreta and waste waters; and "sanitation works" is defined as sewers, drains, pipes, ducts or channels, whether open or closed, used for the drainage of human excreta or waste waters from buildings or land and on-site systems for the reception of human excreta and waste waters which do not connect to a sewer. *Source: Water Supply and Sanitation Act-2009*
7	**Zambia**
	Quotation from the WSS Act '"Sanitation service" means- (a) the disposal, on-site or off-site, of human excreta; (b) the collection of sewerage, excluding untreated toxic waste and storm water, from residential, commercial or industrial sources; or (c) the treatment and disposal of waste water in accordance with this Act and the standards established under the Standards Act, the Public Health Act, Environmental Protection and Pollution Control Act or any other written law'. *Source: Water Supply and Sanitation Act No.28 of 1997*.
	Recommendations for the Framework and Strategy
	For the purpose of this framework and strategy, the recommended "Sanitation Definition" is "***an access to and use of facilities and services for the safe disposal of human urine and faeces***[3]***.*** The recommended definition does not contradict any of the ESAWAS countries' definitions.

[3] Guidelines on Sanitation and Health, Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

3.2.2 Key Findings from Review of Sanitation Policies

The review of sanitation policies in the ESAWAS countries' existing regulatory frameworks has revealed a number of key findings, observations, gaps and overlaps. Table C is a summary of key findings and respective recommendations on sanitation policies, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table C: Key Findings from Review of Policies on Sanitation and Recommendations

	Country Findings from the Review of Sanitation Policies
	Burundi
1.	There is no dedicated policy on sanitation, instead there is National Sanitation Strategy 2015–2025 which has set sanitation strategies for 2015 -2025.
	Kenya
2	Inclusiveness in sanitation is addressed in Kenya's constitution- Article 43 (b): declares sanitation as a basic human right and guarantees the right of every person to "reasonable standards of sanitation." Article 42 also guarantees the right to a clean and healthy environment. Inclusiveness is further included in the Kenya Environmental and sanitation Policy (2016).
3	Kenya Environmental Sanitation and Hygiene Policy 2016 – 2030 has not yet been translated into a law.
4	The National Water Policy of Kenya (1999) is out of date if you consider the reforms taking place in the water sector after coming into force the new Kenya constitution in 2010
5	There is an overlap of duties and responsibilities of key stakeholders in sanitation policy and strategy documents prepared by the Ministry responsible for Water and those prepared by the Ministry of Health especially on the regulation of on-site sanitation.
	Lesotho
6	The Water Policy does not fully address sanitation issues especially clarity of division of roles and responsibilities of key stakeholders (service providers, regulator and policy makers).
	Mozambique
7	Sanitation issues are better addressed in Urban Water and Sanitation Strategy of 2011 as compared to the National Water Policy 2007.
	Rwanda
8	The sanitation policy (2016) and its respective implementation strategy (2016) are adequately and detailed
9	The policy vision addresses "equitable and affordable access to safe sanitation and water management to all Rwandans – this is an indication of "Inclusiveness".
10	National Sanitation Policy and the implementation strategy, both of 2016 have not yet been translated into a law.
	Tanzania
11	Although the Ministry of Health is responsible for sanitation, the Health policy only addresses health aspects related to sanitation.
12	There is no policy which is dedicated to sanitation and faecal sludge management. The National Water Policy (2002) covers only provision and regulation of sewerage services and waste water. It does not address onsite sanitation and faecal sludge management.
	Zambia
13	The National Water Policy does not clearly address sanitation issues unlike the National Urban Water and Sanitation Strategy (NUWSS) which has substantially included matters related to sanitation.
14	Most strategies in the NUWSS are not strong on issues of inclusiveness and how that will be addressed. At institutional level, NWASCO has developed a Strategic Plan which has a deliberate objective to address the issue of inclusiveness. The same need to be supported by a national level policy and strategies.

	Country Findings from the Review of Sanitation Policies
15	The Government of Zambia has strong focus towards attaining a target of Open Defecation Free status by the year 2020, which is very commendable.
	Zanzibar -Tanzania
16	The Water Policy does not fully address sanitation issues especially, division of roles and responsibilities of key stakeholders (service providers, regulator and policy makers) are not clear.

Recommendations for the Framework and Strategy

i) Have a dedicated policy for sanitation which should include details of onsite sanitation and faecal sludge management as it is the case for Kenya and Rwanda.

ii) Include statements of inclusiveness and equity in sanitation high level documents such as policies and strategies. The best way could be to include it in the constitution as it is the case for Kenya.

iii) The implementation of the policy can be enforced if the policy is translated into a law or Act. It is recommended either to immediately after the policy launch, pass laws which will enforce it or make sure that the policy which is prepared after the enactment of the law complies with the respective law/act.

iv) A policy is a living document and it is therefore recommended to review a policy latest after every 10 years or whenever major reforms takes place as it was the case for Kenya in 2010. Policies need to be periodically examined to respond to the prevailing/changing environment, for unintended consequences, for determining whether expected outcomes were achieved, and the reasons for non-achievement if that is the case.

v) Sanitation has many actors/ stakeholders. Involve all key sanitation stakeholders during the preparation of the sanitation policy to avoid contradictions which may arise from documents prepared by the same stakeholders in sanitation.

vi) Since laws can take time, the regulator can take the initiative to begin the monitoring and data collection process for Key Performance Indicators (KPIs). Interagency Memorandums of Understanding (MOUs) can be prepared to underscore how existing arrangements require institutional collaboration. These steps can be taken in parallel with the preparation of legislative instruments.

3.2.3 Key Findings from Review of Sanitation Legal Framework

The review of sanitation legal framework in the ESAWAS countries existing regulatory frameworks has revealed a number of key findings, observations, gaps and overlaps. Table D is a summary of findings and respective recommendations on sanitation legal framework, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table D: Key Findings from Review of Legal Framework on Sanitation and Recommendations

	Country Findings from the Review of Sanitation of Legal Framework
	Burundi
1	Regulation of sanitation by AREEN started in November 2018 after enactment of Decree No 100/159 of 5th November 2018. This Decree gives mandate to AREEN to regulate the entire sanitation value chain.
	Kenya
2	The Kenya Environmental Sanitation and Hygiene Policy 2016 – 2030 has not yet been translated into an Act
3	While the Water Act 2016 and its predecessor, Water Act 2002 refers to the regulation of sewerage services, the Water (Services Regulatory) Rules, 2012 which should facilitate the implementation of the Water Act 2002 have included aspects of sanitation regulation.

	Country Findings from the Review of Sanitation of Legal Framework
4	Regulations, Rules, Guidelines and licence template were prepared by WASREB for water supply and sewerage services and were not intended for sanitation.
5	The Water (Services Regulatory) Rules, 2012 do not conform to the respective Water Act 2016.
	Lesotho
6	The Water Policy does not fully address sanitation issues especially clarity of division of roles and responsibilities of key stakeholders (service providers, regulator and policy makers). This is a gap which needs to be redressed.
	Mozambique
7	DNAAS, a directorate of the Ministry responsible for Water, is mandated by the Water Law of 1993, to prepare a policy and at the same time, is mandated to oversee implementation of water supply and sanitation services in the country (both urban and rural areas). In effect, DNAAS is a policy maker and a regulator, which is against best practices.
8	The mandate of the Autoridade Reguladora de Águas, Instituto Público (Water and Sanitation Regulatory Authority- formerly CRA) was extended to regulate sanitation and water supply public provision (Decree 23/2011). The 2025 Water and Sanitation Regulatory Council's Vision on sanitation contains commitments on sanitation which include, among others: • Elimination of Open defecation in major cities and a fecal sludge management system to be implemented in all urban centers; and • The sanitation tariff covers operational costs and maintenance of sanitation service chain up to its treatment.
	Rwanda
9	The National Sanitation Policy and National Sanitation Policy Implementation Strategy has not been translated into a law, instead regulations have been prepared based on policies.
10	Efforts made by RURA to regulate all components of sanitation namely, solid waste management (collection and transportation, waste recycling, hazardous waste, landfill management), liquid waste management (emptying and transportation of liquid waste and installation of decentralized wastewater treatment systems) and cleaning service provision is commendable.
	Tanzania
11	Although the Water Supply and sanitation Act is supposed to address both water supply and sanitation issues, it has mostly dwelt on water supply in line with the Water Policy (2002). In practice, water supply and sanitation authorities which are established under the Water Supply and sanitation Act -2009 deal with sewerage services.
12	All Rules, Regulations and Guidelines which originate from the Water Supply and Sanitation Act 2009, refer to sewerage services and waste water and do not make reference to onsite sanitation and faecal sludge management.
13	In the Water Supply and Sanitation Act-2009 which established Water and sanitation Authorities and has assigned functions to the Regulator (EWURA), sanitation is defined as the provision of appropriate facilities and services for the collection and disposal of human excreta and waste waters; and "sanitation works" is defined as sewers, drains, pipes, ducts or channels, whether open or closed, used for the drainage of human excreta or waste waters from buildings or land and on-site systems for the reception of human excreta and waste waters which do not connect to a sewer. Therefore, there is window for a regulator to regulate onsite sanitation and FSM.
	Zambia
14	The Water and Sanitation Act has substantially included matters related to sanitation and the Regulatory Framework on Urban Onsite Sanitation Services (OSS) provides clear regulatory actions on OSS. However, both the Act and the regulatory framework for NWASCO is not explicit on the issue of gender (gap) and inclusiveness in general.

Recommendations for the Framework and Strategy
i) ESAWAS member countries do not have laws/acts and regulations dedicated for onsite sanitation and faecal sludge management instead they are mostly dedicated for water supply and sewerage. Prepare relevant laws and regulations which cater for onsite sanitation and FSM or amend the existing laws and regulations accordingly. ii) A policy maker should not be a policy implementer. This won't bring about efficiency in obtaining the intended results of the policy and it is a conflict of interest. The policy implementer should be different from the policy maker. The policy maker should have an oversight function of policy implementation. iii) The sanitation policy should include the possibility of application of synergies between faecal sludge management, solid waste and storm water management.

3.2.4 Key Findings from Review of Roles and Responsibilities of Key Institutions

The review of roles and responsibilities of key institutions in the ESAWAS countries existing regulatory frameworks has revealed a number of key findings, observations, gaps and overlaps. Table E is a summary of key findings and respective recommendations on roles and responsibilities of key institutions, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table E: Key Findings from Review and Analysis of Roles and Responsibilities of Key Institutions in Sanitation and Recommendations

	Country Findings from the Review Roles and Responsibilities of Key Sanitation Institutions
	ESAWAS member countries
1	Key institutions responsible for sanitation are: **Ministries:** i) Ministry responsible for Water and or Sanitation (Policy on sanitation) ii) Ministry responsible for Public Health (Policy on sanitation) iii) Ministry responsible for Environment (Policy on regulation of environment including faecal sludge and effluent)). **Agencies** i) Water and Sanitation utilities (provider of water supply and sanitation services mostly sewerage services and wastewater treatment). ii) Environmental Agency (regulation effluent and faecal sludge) iii) Water Resources Agency (regulation of effluent discharge) iv) Water and sanitation Regulators (regulation of water supply and sewerage) **Local Government -** Municipalities, Counties, and Cities (regulation of onsite sanitation facilities, provision and regulation of faecal sludge emptying and transportation).
	Burundi
2	The Ministry of Public Health and the Ministry of Environment are both lead Ministries in sanitation.

	Country Findings from the Review Roles and Responsibilities of Key Sanitation Institutions
	Kenya
3	Mandates for regulation of on-site sanitation between The National Environmental Sanitation Coordinating and regulatory Authority (NESCRA) which is to be established under the Kenya Environmental sanitation and hygiene Policy 2016-2013 and WASREB are not clearly distinguished - there are overlaps.
	Lesotho
4	It is observed that, Municipalities or Local Government Authorities have legal mandate to regulate urban and peri-urban non-sewered sanitation. At the same time, municipalities have legal mandate to provide non-sewered (emptying, transportation and treatment services). This depicts a clear conflict of interest, which needs to be re-dressed.
5	WASCO's mandate is limited only to provision of potable water and sewerage services in urban areas and has no mandate of provision of non-sewered sanitation services. However, it is observed that, in practice, WASCO engaged Municipalities/LGAs and reached an agreement which has enabled WASCO to start providing faecal sludge emptying and transportation services by contracting out to private sector the emptying and transportation of faecal sludge services.
	Mozambique
6	Municipalities (Urban Councils) have legal mandate to regulate urban and peri-urban sanitation. By the time of conducting this study, municipalities have legal mandate to provide water supply and sanitation services, sewered and non-sewered (emptying, transportation and treatment services). This depicts a clear conflict of interest, which needs to be redressed. However, the changes proposed include roles of provision of water supply and sanitation services by a utility.
7	By the time of conducting this study, AURA,IP and Municipalities had an overlap in the mandate for regulation of sanitation. AURA,IP was engaging in discussions with municipalities to agree on a takeover of the duties of regulation, (especially from emptying, transportation and treatment segments). The new arrangement, however, will have addressed this overlap.
	Rwanda
8	The roles and responsibilities of stakeholders for water supply and sanitation are clear and do not over-lap
	Tanzania
9	Overlap of responsibilities between NEMC and Basin Water Boards in the area of enforcement of effluent quality standards.
	Zanzibar -Tanzania
10	LGAs have legal mandate to regulate urban and peri-urban sanitation. At the same time, LGAs have legal mandate to provide sanitation services, sewered and non-sewered (emptying, transportation and treatment services). This is a conflict of interest, which needs to be re-dressed.
11	ZURA is not responsible for sanitation regulation
12	Pursuant to the relevant laws, roles and responsibilities of provision of water supply have been assigned to Zanzibar Water Authority (ZAWA) and that of sewerage and sanitation have been assigned to the Local Government Authority.

Recommendations for the Framework and Strategy
Recommended roles and responsibilities of key institutions in sanitation are: **Ministries:** i) Ministry responsible for Water and or Sanitation (Policy on sanitation) ii) Ministry responsible for Environment (Policy on regulation of environment including treated faecal sludge and effluent) **Agencies** i) Water and Sanitation utilities (provider of water supply and sanitation services (sewerage, wastewater treatment, faecal sludge emptying, transport and treatment). ii) Environmental Agency (Regulation of effluent and faecal sludge – to work in collaboration with the water resources authority through the Memorandum of Understanding). iii) Water Resources Agency (regulation of effluent discharge to work in collaboration with the environmental Agency similar as in ii). iv) Water and Sanitation Regulators (regulation of water supply and sanitation including sewerages services, faecal sludge emptying, transport and treatment) **Local Government -** Municipalities, Counties, and Cities (regulation of onsite sanitation facilities).

3.2.5 Key Findings from Review of Roles and Responsibilities along the Sanitation Chain

The review of Roles and Responsibilities along the sanitation chain in the ESAWAS countries existing regulatory frameworks has revealed a number of key findings, observations, gaps and overlaps. Table F is a summary of key findings and respective recommendations on roles and responsibilities along the sanitation chain, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table F: Key Findings from the Review and Analysis of Roles and Responsibilities along the Sanitation Chain and Recommendations

	Country Findings from the Review and Analysis of Roles and Responsibilities along the Sanitation Chain
	ESAWAS member countries
1	In all ESAWAS member countries faecal sludge emptying and transport (in terms of quality of service and tariff) and treatment are not regulated. However, in Rwanda and Kenya, exhauster trucks used for emptying and transport of faecal sludge are regulated.
	Burundi, Kenya and Tanzania
2	Overlaps exist for regulation of effluent standards and issuing of Effluent Discharge Licence between the Environmental Agency and either the Regulator, Water Resources Agency, local Government or the Standards Agency.
	Mozambique
3	Municipalities and LGAs which are service providers of emptying, transport and treatment services provider are not likely to be regulated by AURA,IP for reasons of superiority of the establishing legal instruments (decree for AURA,IP versus an Act of Parliament for LGAs.
4	LGAs have conflict of interest in emptying and transport services of fecal sludge as on one hand they are operators, and on the other hand they are regulators of the private sector (competitors in business).

Recommendations for the Framework and Strategy
i) The recommended solution for assigning the role of regulation of faecal sludge emptying and transport to the water and sanitation regulators in ESAWAS member countries is to amend Acts/Laws to include regulation of faecal sludge management as one of the activities of a water and sanitation/sewerage regulator. However, since the amendment of Act/Law may take longer time because it should get the approval of the parliament, thorough review of existing laws should be made to look into the possibility of getting similar results by preparing new regulations on sanitation or amending the existing regulations. ii) It is not easy for a regulatory agency for sanitation to regulate the local government authority due to the hierarchy of its establishment. The local government is senior to the regulatory agency. Regulated sanitation services should be provided by an autonomous agency or a private sector that have the autonomy and expertise required to improve sector performance . iii) It is not recommended for the LGA to provide and at the same time regulate faecal sludge emptying and transport. The LGA should delegate its functions of faecal sludge emptying and transport to a private sector or an autonomous entity i.e. water and sanitation utility.

3.2.6 Key Findings from Review of Regulatory Instruments

The review of regulatory instruments in the ESAWAS countries existing regulatory frameworks has revealed a number of key findings, observations, gaps and overlaps. Table G is a summary of key findings and respective recommendations on regulatory instruments, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table G: Key Findings from the Review and Analysis of Sanitation Regulatory Instruments and Recommendations

	Country Findings from the Review and Analysis of Regulatory Instruments
	ESAWAS Member Countries
1	Do not have a license for emptying, transport services and for treatment of faecal sludge
2	Do not have Sludge Quality Standards for various uses ie agriculture, fuel etc.
3	Do not have operating procedures for faecal sludge emptying, transport and treatment.
	Burundi and Kenya
4	Do not have Standards/ Guideline for construction of onsite sanitation facilities.
	Zambia
5	Safety aspects not addressed for faecal sludge emptiers.
Recommendations for the Framework and Strategy	
i)	Prepare licenses for emptying, transport services and for treatment of faecal sludge.
ii)	Prepare faecal sludge emptying, transport, treatment and disposal quality of service Guidelines.
iii)	Prepare cost reflective faecal sludge emptying, transport, treatment and disposal tariff and charges Guidelines.
iv)	Prepare standard operating procedures for faecal sludge management.
v)	Prepare Standards/ Guideline for construction of onsite sanitation facilities.
vi)	Prepare Health and safety Guidelines for workers at various stages of the sanitation value chain.

3.2.7 Key Findings from Review of Sanitation Technologies

The review of sanitation technologies in the ESAWAS countries existing regulatory frameworks has revealed several key findings, observations, gaps and overlaps. Table H is a summary of key findings and respective recommendations on sanitation technologies, which will be considered in the development of the ESAWAS regulatory framework and strategies.

Table H: Review and Analysis of Sanitation Technologies along the Sanitation Chain and Recommendations

	Review and Analysis of Sanitation Technologies along the Sanitation Chain
	Zambia
1	There is no mapping for sanitation technologies specifically in peri-urban areas.
2	There is partial data and information on the available sanitation facilities including in peri-urban areas.
	ESAWAS member countries
3	A big proportion of population use pit and improved latrines in peri-urban and urban areas (refer country profiles), this technology does not comply with national building codes and is therefore not allowed, hence leaving out (not including) a large population. The allowed onsite technology is the use of septic tanks.
4	Unplanned areas where there are congested houses, fecal sludge may be removed manually or by small maneuverable mechanical equipment, and then transferred to a tanker vehicle suitable for road transport to the treatment plant. It has been found that the use of manual and pump emptying technologies for emptying toilets especially in peri-urban areas has not been extensively promoted including use of transfer stations and transport using pick-ups to official treatment sites.
5	The existing centralized treatment plants are waste stabilisation ponds and were designed for waste water and not faecal sludge. Waste stabilization ponds do not cater for faecal sludge which is mostly found in peri-urban areas.
Recommendations for the Framework and Strategy	
i) Recommended to undertake city wide sanitation planning which will include, among others, sanitation technology mapping.	
ii) Conduct sanitation baseline survey for the intended peri-urban area. Without knowing the starting point, improvements are difficult to document.	
iii) Allow sanitation technologies which comply to the requirement of safely managed sanitation including technologies which allow containment and treatment of faecal sludge in-situ (ie improved pit latrines).	
iv) Put a transition provision in an Act/Regulation which takes into consideration of areas where toilets already exist, but do not comply with building codes which specify only septic tanks or improved latrines (as per the recommendation).	
v) Promote the use of manual and pump emptying technologies for emptying toilets especially in peri-urban areas including use of transfer stations and transport using pick-ups to official treatment sites.	
vi) Modify the existing waste stabilization ponds to cater for treatment of faecal sludge.	
vii) Ensure that new waste stabilization ponds have a provision for treatment of faecal sludge.	
viii) Promote DEWATs where feasible.	

PART 4

REGULATORY FRAMEWORK AND STRATEGY

PART IV: REGULATORY FRAMEWORK AND STRATEGY

4.1 Introduction

The regulatory framework constitutes the policy, legal and institutional framework. The recommended regulatory framework and strategies aim at addressing gaps, overlaps and considering best practices and recommendations identified in Part III of this report. The higher objective of implementing the proposed regulatory framework and strategies is to effectively contribute towards achieving the preferred future with Sustainable Urban Sanitation[4] which include:

(i) Increased Coverage for safely managed sanitation to attain SDG 6.2 by 2030;
(ii) Clear monitoring and evaluation of progress on national and SDG targets;
(iii) Information system on regulated sanitation services in place;
(iv) Standards for sanitation facilities construction in place and enforced;
(v) Regulations and standards for FSM (including handling/reuse) in place and enforced;
(vi) Regulation of onsite sanitation service provision;
(vii) Establish and roll out a sanitation funding mechanism;
(viii) Clean and healthy towns with reduced water pollution and fewer outbreaks of water- and sanitation-related diseases; and
(ix) End open defecation.

The structures of policy and legal frameworks differ from one country to another but, similarities between them also exist. In this publication, the policy and legal framework is categorized into policies, laws, decrees and regulations. These categories separate the different legal instruments into a hierarchy of levels of power and distinguish between instruments that come from the executive and those from the legislative branch of government. While policies and regulations originate from the executive, laws originate from the legislature. Laws can, within limits, delegate parts of the authority to create regulation and rules to the executive branch.

4.2 Proposed Sanitation Regulatory Framework

The Regulatory Framework and Strategy for inclusive urban sanitation service provision (incorporating non-sewered sanitation) has been formulated based on the approach to the development of a regulatory Framework and Strategy which is discussed in Parts II and III. The recommended regulatory framework comprises of the Policy, Legal and Institutional Set-Up. A Monitoring and Evaluation mechanism is also proposed.

4.2.1 Policy Framework

Sanitation policies are critical to creating an enabling environment that will encourage and support increased access to onsite sanitation and FSM services. The policy will provide the instruments (guidance, positive incentives and penalties) which turn priorities in sanitation into reality through implementation of sanitation programmes. The following specific issues[5], among others, are applicable for the entire sanitation service chain and should be considered while drafting the policy for inclusive urban sanitation service provision (incorporating non-sewered sanitation).

[4] Section 4.1, Urban Onsite Sanitation and Faecal Sludge Management-Framework for Provision and regulation in Zambia by NWASCO- April 2018
[5] Chapter 3; Section 3.1: Sanitation and Hygiene Promotion, Programming Guidance by Water Supply and Sanitation Collaborative Council and World Health Organization, 2005

(i) **Equity:** Policy statements, laws and budgetary allocation can be used to steer resources to specific social groups or geographic areas so as to enhance equity;
(ii) **Targeting of Resources:** Policies can be used to signal where resources are to be spent. That is which aspect of sanitation and hygiene promotion are to be funded and at what level;
(iii) **Health Consideration:** the policy framework needs to provide for a full range of interventions (access to technology, promotion of hygiene behaviour and strengthening of the enabling environment) which will enable Households to improve their health status;
(iv) **Levels of Service:** policy to signal (a) what levels of service are acceptable (i.e. health, safety and environmental standards which need to be maintained); and (b) what activities will be promoted (perhaps through the provision of subsidy to support specific providers);
(v) **Environmental Consideration:** policy to address environmental protection;
(vi) **Institutional Roles and Responsibilities:** Policy to address clear roles and responsibilities (a) between public agencies; (b) between public and private/civil society agencies; and
(vii) **Financial Consideration:** to provide guidance on who will pay (tariffs and charges) for what service, and any associated subsidies where applicable.

Some other considerations in the process of policy development are the need to:
(i) Involve key stakeholders in the process to promote transparency and the education of the citizenry;
(ii) Review documents once relevant;
(iii) Guarantee the actual enforcement of policies; and
(iv) Mainstream sanitation into other sectoral policies, plans and programs, whenever relevant.

4.2.2 Legal Framework

The legal framework is comprised of laws/Acts/Decrees, Regulations/Rules/By-laws, standards, guidelines and operating procedures. The legal framework permits national agencies responsible for regulation of onsite sanitation and FSM to enforce their implementation.

The proposed legal framework outlines specific salient features, which have been analysed in the review of ESAWAS member countries' existing regulatory frameworks and need to be covered adequately in the regulatory framework in order to enable enforcement in the implementation of sanitation policies. Proposed salient features of the legal framework are split into those which are applicable for the entire sanitation service chain and those which are applicable for each element of the sanitation chain. *Depending on the extent of laws and regulations in each country, the proposed salient features of the legal framework may either be part of the law or embedded in rules and regulations.*

The salient features which are recommended to be covered in the legal framework are as contained in Table I:

Table I: Salient Features of the Legal Framework

S/N	Stage of Sanitation Value Chain	Salient Features of the Legal Framework
1	**General for the Entire Sanitation Value Chain**	i) Clear roles and responsibilities (i.e. policy making, regulation and oversight, service provision, ownership of assets etc.) for institutions dealing with sanitation (i.e. Ministries, Agencies) – roles and responsibilities should not overlap; ii) State the lead ministry in sanitation which is responsible for coordinating with other ministries involved in sanitation for resource mobilization and joint planning of urban sanitation improvements; iii) Licensing authorities along the sanitation chain; iv) Involvement of the private sector along the sanitation chain; v) Service providers and their functions along the sanitation chain; vi) Regulators and their functions along the sanitation service chain; vii) Regulation of health and safety of workers along the sanitation chain; viii) Requirement of having a database of sanitation facilities; ix) Requirement of undertaking technology mapping and citywide sludge characterization; x) Requirement for compliance to effluent and treated faecal sludge quality standards; xi) Monitoring and reporting for onsite sanitation and fecal sludge management; xii) Performance indicators for OSS and FSM; xiii) Business Planning for OSS and FSM including City Wide Sanitation Planning results; xiv) Enforcement (sanctions/penalties and incentives) for non-compliance; xv) Financing issues (tariffs, charges, subsidies, capital funding development) for the entire service chain, that is from collection to disposal and to take into consideration cost recovery and affordability; xvi) Disaster preparedness and sanitation interventions during emergencies (i.e. floods, droughts, earthquake) and climate changes i.e. heavy rains, winds; xvii) Requirement for targeted investments to address social equity; xviii) Inclusiveness in the sanitation chain through affirmative action for gender, disadvantaged groups, eliminate disparities, as well as affordability to the poor; xix) Consumer standards for assessing and improving the service to users; and xx) Since most urban areas do not have facilities for treating faecal sludge, the law should provide for transitional measures for faecal sludge disposal.

S/N	Stage of Sanitation Value Chain	Salient Features of the Legal Framework
2	**Containment**	i) Technological options for onsite facilities based on appropriateness to local conditions and users, available resources and operational capacities; ii) Requirement for each household to have an on-site sanitation facility which meets standards for a respective sanitation facility; iii) Affordability and access of onsite sanitation facilities for all and how to address landless people; iv) Consider improving the affordability of a toilet facility by: a) Subsidizing the cost of the toilet through the local government b) Using loans c) Looking for cheaper technologies which still achieve the recommended results v) Consideration for areas where on-site sanitation facilities already exist, but they do not comply with the required standards for such; vi) Specify who regulates what in containment; vii) Further, the Legal Framework should specify[6]: • Standard design for toilet facilities to take into consideration requirements for the disabled and gender specific requirements for menstrual management. • Exclusion of insects and other animals from faecal material • Access to pit or tank for emptying • Design of various types of on-site sanitation facilities, i.e. Septic tanks, conservancy tanks, lined pit latrines, VIP latrines • Management of liquid effluent from latrine pits, conservancy and septic tanks • Standards and charges for effluent discharged to sewers • Safety and performance of container and mobile toilet units.
3	**Emptying**	i) Technological options for faecal sludge emptying; ii) Process and computation of fees/charges for emptying of faecal sludge from sanitation facilities; iii) Address the protection of public health and environment, and health and safety of emptiers during pit emptying (desludging); and. iv) Further, the Legal Framework should specify[7]: • Obligation for premises to be connected to sewer system if available • Tariffs for emptying, transportation, and disposal of sewerage and faecal sludge at treatment plants • Siting of pits and tanks so they can be easily accessed and emptied • Pedestrian and traffic safety during pit and septic tank emptying operations • Control of nuisances and spillages when emptying and transporting faecal sludge • Service standards for container and mobile toilets

[6] *WHO Guidelines on Sanitation and Health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO, Section 4.4*
[7] *WHO Guidelines on Sanitation and Health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO, Section 4.4*

S/N	Stage of Sanitation Value Chain	Salient Features of the Legal Framework
4	**Transport**	i) Transport options (including transit stations) for faecal sludge; ii) Health and safety protocols of workers; and iii) Requirement that the collected fecal sludge be transported to the designated site(s) for treatment and disposal, and that the collected fecal sludge is never disposed into open space or water bodies or storm drains or sewers with penalties for illegal activities.
5	**Treatment**	i) Pre-conditions for construction of faecal sludge treatment plants i.e. environmental impact assessment, title deed; ii) Modification of existing wastewater treatment facilities to accommodate faecal sludge treatment; iii) Authorisation of sites for treatment of faecal sludge; iv) Access and discharge conditions for the treatment or disposal sites; v) Quality standards of liquid effluent and treated faecal sludge; vi) Measures and sanctions against illegal discharge into the environment and incentives given for re-use of treated faecal sludge; vii) Health and safety protocols of workers and the provisions in case of accidents (for workers as well as neighborhoods); viii) Measures to control nuisances (odours, flies, noise etc.) from treatment facilities; and ix) Computation of fees/charges for emptying of fecal sludge from faecal sludge transportation facilities to treatment plants.
6	**Disposal/Re-use**	i) Treatment options for faecal sludge before disposal/re-use; ii) Quality standards of effluent and faecal sludge before disposal /re-use; iii) Guidelines for re-use applications of sanitation products; iv) Requirements for land application of sludge; and v) Authorisation of sites for disposal of treated sludge in landfills or for its re-use.

4.2.3 Institutional Framework

An appropriate institutional arrangement is a prerequisite for effective onsite sanitation and fecal sludge management and is an important part of creating an enabling environment for sustainable sanitation service provision.

The institutional framework is defined by the laws and regulations that determine the relationships between the stakeholders involved in onsite sanitation and FSM, and it defines the organisation of the sanitation service chain. Under this component, institutional aspects that ensure the sustainable management of the service chain are considered which include inter-alia, roles and responsibilities of key institutions on sanitation and specific roles and responsibilities of key stakeholders along the sanitation service chain.

Recommendations for an institutional framework of the regulatory framework for onsite and un-sewered sanitation services have taken into consideration the following aspects which are a result of the review and analysis of ESAWAS member countries regulatory frameworks and best practice.

i) Need for separation of roles and responsibilities of policy makers, policy implementers, service providers and regulator to avoid conflict of interest;

ii) An institution/ utility which has a role of providing water supply services is better placed to also provide sanitation services; and correspondingly a regulator of water supply should also regulate sanitation services;

iii) Practically, it is difficult for a regulatory agency for sanitation to regulate the local government authority due to the hierarchy of its establishment. The local government is senior to the regulatory agency. It is recommended that provision of regulated sanitation services be delegated to autonomous agencies or to private sector organisations;

iv) An institution/agency which has a role of setting effluent/treated-faecal sludge standards should be separate from the agency that regulates effluent and/or faecal sludge disposal services;

v) Faecal sludge emptying services and faecal sludge transportation services are close-linked, hence should be implemented by one service provider. Similarly, regulation of the two services should be through one regulatory agency;

vi) In some urban areas, sewerage is managed by a utility, while non-sewered sanitation is the responsibility of local government. Such fragmentation of responsibility for sanitation can lead to poor planning, exclusion of poorer communities and, ultimately, reduced cost-effectiveness. Where an adequately performing utility company exists, consideration should be given to extending its mandate to cover both sewered and non-sewered sanitation[8]

vii) Collaboration should be employed to assist in addressing the existing gaps and overlaps of roles and responsibilities. Likewise, when implementing the proposed framework, collaboration is required in order to achieve linkages from the various actors for effective results of Citywide Sanitation Planning and Implementation.

i) Roles and Responsibilities of Institutions on the Sanitation Agenda

The roles and responsibilities of various sanitation institutions as defined in policy and legal documents should not overlap and the lead Ministry for sanitation should be clearly defined. It is recommended that regulation and service provision should not be done by one and the same entity, and that separation of their roles improves transparency and quality of services.

It should also be clear from the legal instruments who is mandated to provide services. It is often better to allow an autonomous institution or a private sector to formally become a service provider and allow an autonomous institution to regulate such service providers.

Table J shows the existing roles and responsibilities of sanitation institutions of ESAWAS member countries and the recommended roles and responsibilities in the proposed regulatory framework.

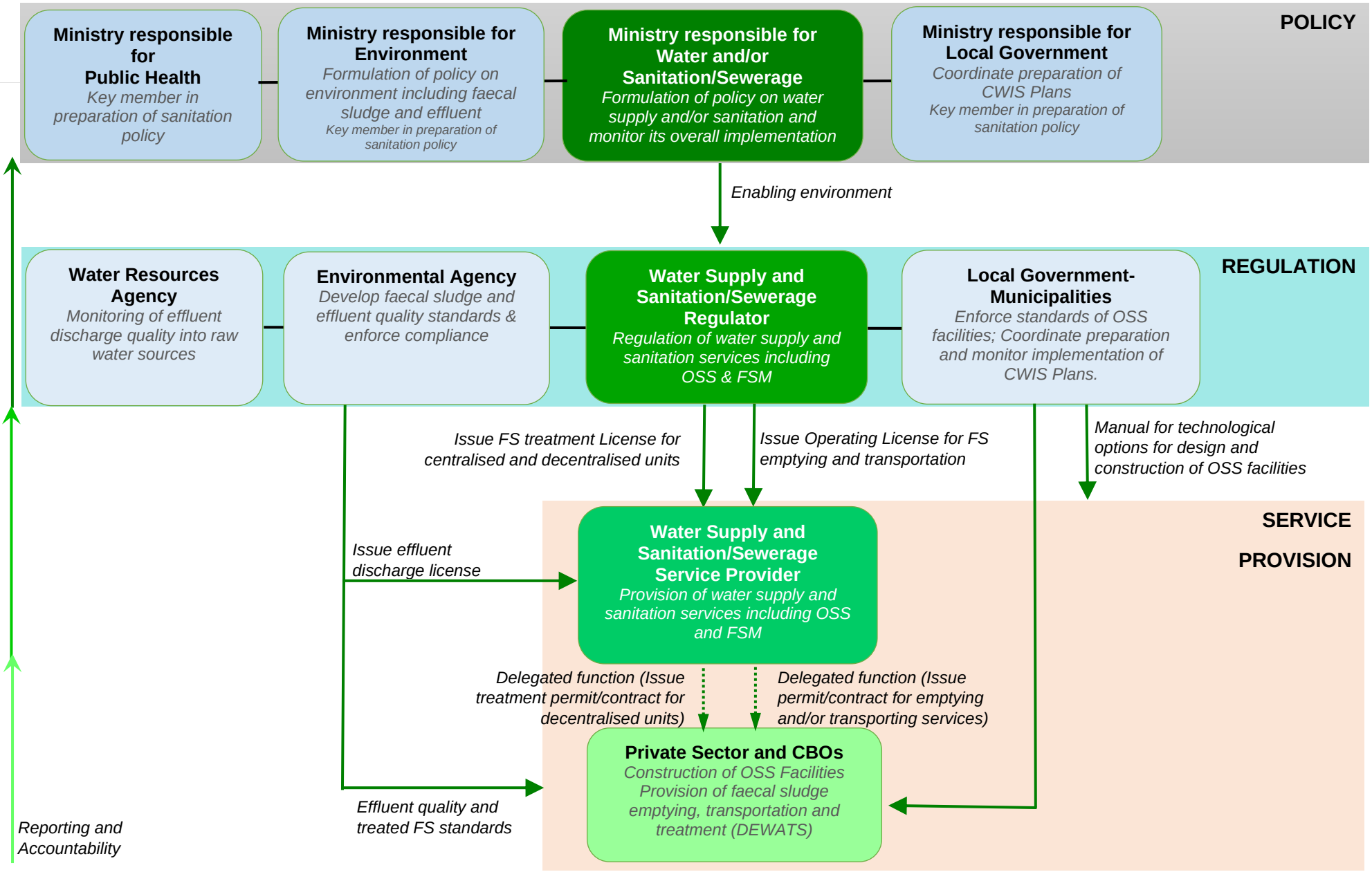
[8] World Health Organization; Guidelines on sanitation and health.2018 Geneva:. Licence: CC BY-NC-SA 3.0 IGO.

Table J: Roles and Responsibilities of Institutions on the Sanitation Agenda

No.	Institution	Current Roles and Responsibilities	Recommended Roles and Responsibilities
	POLICY		
1	Ministry responsible for Water and/or Sanitation/Sewerage	• Formulation of Policy on Water Supply and Sewerage • Formulation of Policy on Sanitation.	• Formulation of Policy on Water Supply and Sanitation • Formulation of standalone Policy on Sanitation
2	Ministry responsible for Public Health	(i) Formulation of Policy on Sanitation and Hygiene (ii) Household sanitation and hygiene promotion	Key Member in the preparation of Sanitation Policy
3	Ministry responsible for Environment	Formulation of Policy on environment including faecal sludge and effluent – the policy is implemented through the Environmental Agency	Formulation of policy on environment including faecal sludge and effluent - the policy is implemented through the Environmental Agency, including setting of effluent/treated faecal sludge standards. Key Member in the preparation of a Sanitation Policy.
4	Ministry responsible for Local Government	Formulation of Policy on Local Governments, including mandates for LGAs: *(i)* to regulate standards of onsite sanitation facilities; (ii) Provide faecal sludge emptying and transport services; (iii) Regulate faecal sludge emptying and transport services.	Coordinate the Preparation and implementation of Citywide Sanitation Plans at Municipality, City or County level.
	REGULATION		
5	Water Supply and Sewerage / Sanitation Regulators	Regulation of: (i) water supply and sewerage services *(Tanzania, Kenya, Lesotho, Zanzibar and Mozambique)* (ii) regulation of water supply and sanitation services *(Rwanda, Zambia and Burundi)*	Regulation of: (i) water supply and sanitation services /sanitation services (ii) Regulation of sanitation include regulation of onsite sanitation and faecal sludge management
6	Local Government – Municipalities/Counties	*(i)* Regulation of standards of onsite sanitation facilities *(All ESAWAS Countries)* (ii) Provision of faecal sludge emptying and transport services (iii) Regulation of faecal sludge emptying and transport services	(i) Regulation of standards of onsite sanitation facilities (ii) Coordinate preparation of City Wide Sanitation, monitor its implementation.

No.	Institution	Current Roles and Responsibilities	Recommended Roles and Responsibilities
7	Water Resources Agency	Regulation of effluent discharge	Monitoring of effluent discharge quality pursuant to effluent standards set by Environmental Agency.
8	Environmental Agency	*(i)* Regulation effluent and treated faecal sludge *(All ESAWAS Countries)* (ii) Regulation of faecal sludge emptying and transport	(i) Develop effluent and faecal sludge standards (ii) Enforce compliance to effluent and faecal sludge quality standards.
	SERVICE PROVISION		
9	Water Supply and Sewerage /Sanitation service providers	Provision of: *(i)* water supply and sewerage services *(Tanzania, Kenya, Lesotho and Mozambique, Burundi, Zanzibar)* (ii) water supply and sanitation services *(Rwanda, Zambia and Burundi)*	Provision of: (i) water supply and sanitation services (ii) provision of sanitation services include onsite sanitation and faecal sludge management services (iii) faecal sludge emptying, transport and treatment services may be delegated to Private Sector and CBOs.
10	Private Sector and CBOs	(i) Construction of Onsite Facilities (ii) Provision of faecal sludge emptying and transport as a delegated function by either a water and sanitation utility or by Local Government.	(i) Construction of Onsite Facilities (ii) Provision of faecal sludge emptying and transport as a delegated function by a water and sanitation utility.

Diagram A: Recommended Roles and Responsibilities of Institutions on the Sanitation Agenda



ii) Roles and Responsibilities of Sanitation Stakeholders along the Sanitation Value Chain

The efficient implementation of Non-sewered Sanitation (NSS) and Feacal Sludge Management systems (FSM), requires that roles and responsibilities of stakeholders along the sanitation service chain and legal authority are clear, without overlap or gaps. Having a gap or an overlap may lead to lack of accountability and existence of disagreements between stakeholders. Since the entire service chain is interlinked, each aspect influences another and it is essential that the roles and responsibilities are clearly defined.

Key stakeholders along the sanitation chain are the service providers, investors, customers and regulators. For service provision, the framework includes the service provider, the service, which is provided, and the sanitation technology used along the chain. For regulation, the framework includes the regulator, who is regulated, what is regulated, and regulatory instruments to be used (License, Permit, Delegated management, Guideline, Standards, and Standard Operating Procedures) along the sanitation chain. Further, regulatory instruments are provided for in the framework so as to ensure that the following objectives are effectively and efficiently achieved along the sanitation chain:

(a) regular and safe emptying of pits;

(b) efficient and safe haulage of faecal sludge;

(c) appropriate treatment option, proper design and operation and maintenance of faecal sludge treatment facility;

(d) safe and treated faecal sludge and effluent in accordance to the allowed standards; and

(e) adequate tariff structure along the sanitation chain to allow for cost recovery.

It is to be noted that setting standards and enforcement of standards should be placed to two different and separate institutions.

Diagram B and Table K show the recommended roles and responsibilities of service providers, investors, regulators and respective regulatory tools along the sanitation value chain.

ESAWAS REGULATORS ASSOCIATION

Diagram B: Roles and Responsibilities of Stakeholders along the Sanitation Chain

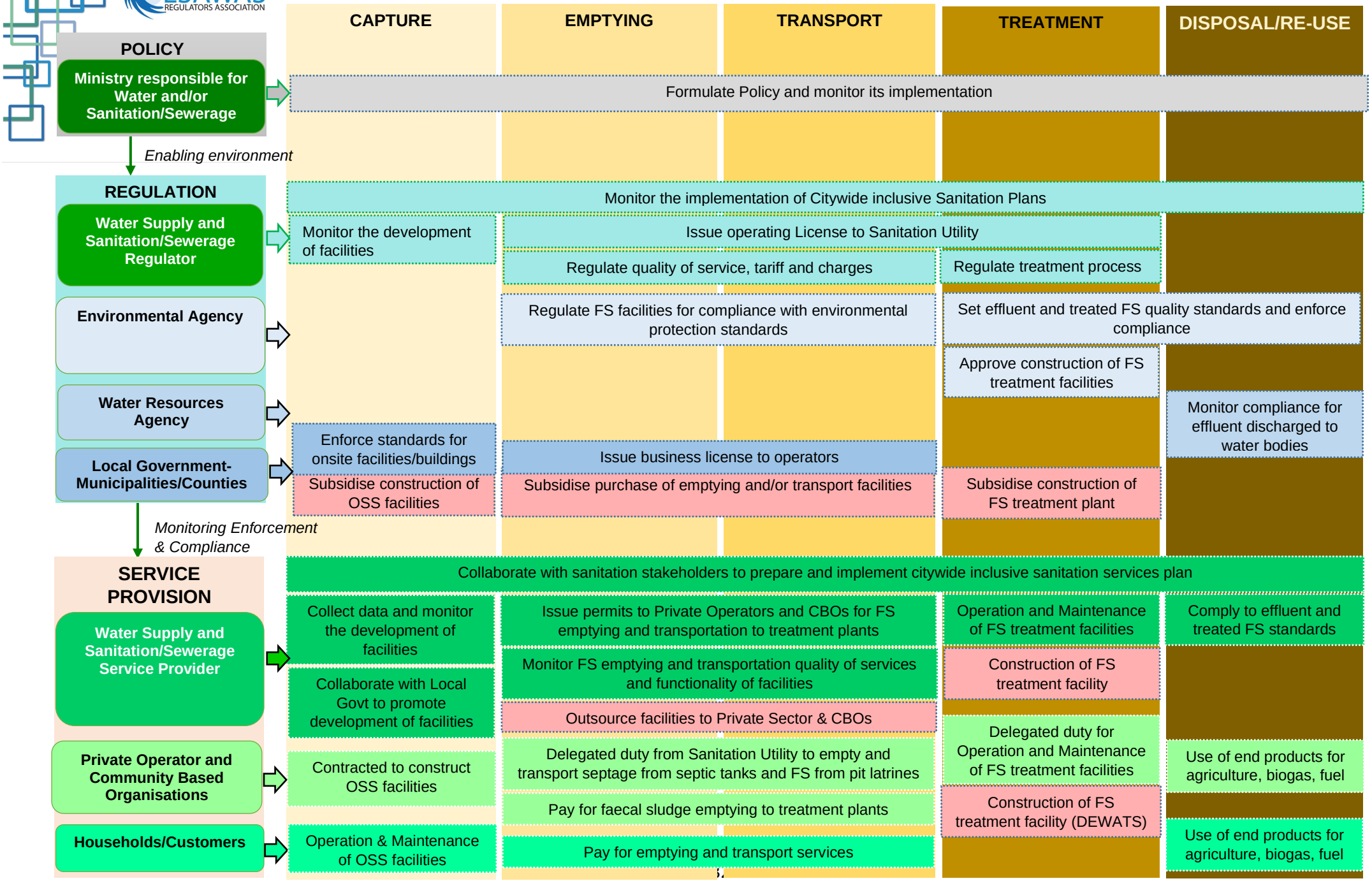


Table K: Roles and Responsibilities of Stakeholders along the Sanitation Chain

AREA	STAKEHOLDER	CAPTURE	EMPTYING	TRANSPORT	TREATMENT	DISPOSAL/RE-USE
Service Providers	Sanitation Utility	Collaborate with sanitation stakeholders (municipalities, private sector, CBOs, NGOs, academia donors etc.) to conduct Citywide inclusive sanitation.				
		(i) Collecting data and monitoring the development of sanitation capture facilities from pit latrines to emptiable facilities. (ii) Collaborate with Local Government to promote (awareness creation) development of sanitation facilities from pit latrines to emptiable facilities.	(i) Issue permits to private operators and CBOs for emptying and transportation of faecal sludge services to treatment plants. (ii) Monitoring of emptying and transport services for functionality of facilities and quality of service.		Operation and maintenance of faecal sludge treatment facility.	Comply to effluent and treated faecal sludge standards.
	Private Operator and CBOs	Contracted to construct onsite sanitation facilities	• Emptying and transport of septage from septic tanks and faecal sludge from pit latrines to Faecal sludge treatment plant - as a delegated duty from the Sanitation Utility. • Paying for faecal sludge emptying to treatment plants.		• Operation and maintenance of faecal sludge treatment facility - as a delegated duty from the Sanitation Utility.	Use of end products - treated sludge as a fertilizer in agriculture, dry sludge as fuel, generation of biogas, use of dried sludge as an input into manufacturing processes such as cement

AREA	STAKEHOLDER	CAPTURE	EMPTYING	TRANSPORT	TREATMENT	DISPOSAL/RE-USE
	Households/ Customers	(i) Operation and maintenance of onsite sanitation facilities -pit latrines and pour flush latrines (ii) Paying for emptying and transport services	Ensure easy access to the sanitation facility during emptying.	NIL	NIL	Use of end products – treated sludge as a soil conditioner or fertilizer in agriculture, dry sludge as fuel, generation of biogas, use of protein from larvae growing on sludge in animal feed, and use of dried sludge as an input into manufacturing processes such as cement
Financiers Investors	Government/Local Government	Coordinate preparation and implementation of Citywide Sanitation Plans.				
		Subsidize construction of onsite sanitation facilities	Subsidize purchase of emptying and/or transport facilities (through subventions) or act as a guarantor for service providers to access loans for purchase of emptying and transporting facilities from commercial Banks.		Subsidize a sanitation utility for construction of faecal sludge treatment plant or modification of existing wastewater treatment facilities to accommodate feacal sludge treatment.	NIL
	Sanitation Utility	NIL	Where necessary, purchase emptying and or transport facilities and outsource the same to Private Sector & CBOs		Construction of Faecal sludge treatment facility.	NIL
	Private Sector and CBO's	NIL	Faecal sludge emptying and or transport facilities - *as a delegated duty from the Sanitation Utility.*		Construction of a fecal sludge treatment facility (DEWATS) - *as a delegated duty from the Sanitation Utility.*	NIL
	Customer/ Household	Construction of onsite sanitation facilities.	Ensure easy access to the sanitation facility during emptying	NIL	NIL	NIL

AREA	STAKEHOLDER	CAPTURE	EMPTYING	TRANSPORT	TREATMENT	DISPOSAL/RE-USE
Regulating Agencies	Sanitation Regulator (SR)	Monitor the implementation of citywide inclusive sanitation plan				
		Monitoring the development of sanitation capture facilities from pit latrines to emptiable facilities.	• Issue licence to Sanitation Utility for faecal sludge emptying services. • Regulation of quality of service, tariff and charges for emptying services of faecal sludge	• Issue licence to a Sanitation Utility for faecal sludge transportation services. • Regulation of quality of service, tariff and charges for transportation services of faecal sludge	• Issue licence to a Sanitation Utility for faecal sludge treatment • Regulation of faecal sludge treatment process. • Monitoring compliance with effluent and faecal sludge quality standards.	NIL
	Environmental Agency (EA)	NIL	Regulation of faecal sludge emptying facilities for compliance with environmental protection standards.	Regulation of faecal sludge transporting facilities for compliance with environmental protection standards.	a) Setting of effluent and treated faecal sludge standards. b) Approve construction and commissioning of faecal sludge treatment facility. c) Enforce compliance to effluent and faecal sludge quality standards.	d) Enforce compliance to effluent and faecal sludge quality standards.
	Water Resources Agency	NIL	NIL	NIL	NIL	Monitoring compliance with effluent standards (for effluent discharged to water bodies)
	Local Government Authority	Enforcing construction standards for onsite facilities/buildings	Issuing business licence for faecal sludge emptying	Issuing business licence for faecal sludge transportation	NIL	NIL

AREA	STAKEHOLDER	CAPTURE	EMPTYING	TRANSPORT	TREATMENT	DISPOSAL/RE-USE
Licensing and Regulatory Instruments	Regulatory Instruments (RI) *(for more details see Table P)*	a) Manual for technological options, for onsite sanitation facilities prepared by LGAs. b) Standards for design and construction of onsite facilities prepared by an institution in charge of preparation of a building code	a) business licence for faecal sludge emptying by LGAs b) Faecal sludge emptying licence to SU by SR c) Permit by SU to private operators for conducting emptying services.	a) business licence for faecal sludge transportation by the Local Government b) Faecal sludge transportation licence (Issued by SR to SU) c) Permit by SU to private operators for conducting transport services.	a) Feacal sludge treatment licence by SR to SU (for centralised and decentralised treatment units). b) Faecal sludge treatment permit (issued by SU to Private Sector or CBO in case of decentralised treatment units). c) Effluent discharge licence by EA d) Effluent quality standards by EA e) Treated faecal sludge quality standards by EA.	a) Effluent quality standards by EA b) Treated faecal sludge quality standards by EA
			a) Faecal sludge emptying, transport, treatment and disposal quality of service guidelines. b) Cost reflective and affordable faecal sludge emptying, transport, treatment and disposal tariff and charges guidelines with incentives to encourage transport enterprises to deliver faecal sludge to the treatment plants. c) Standard Operating Procedures for Faecal Sludge Management (FSM). d) Technological options for design of FSM facilities. e) Ensure professional capabilities are developed and maintained.			

4.2.4 Licensing Framework

i) Recommended Licences

The licensing framework along the sanitation chain include licenses, permits and management contracts. In this framework, licences are issued by the regulatory agency i.e. Sanitation Regulator (SR), Environmental Agency or the Water Resources Authority to the Regulated Utility i.e. Sanitation Utility (SU). Permits and management contracts are issued by the regulated utility (Sanitation Utility) to another entity i.e. private sector, NGO or CBO as a permission to provide the regulated service on its behalf. In this case, a permit or a delegated management contract may be issued.

Licenses would also include operating conditions and remedies for failure (reference to fines or indeed suspension of the licence). In particular, specific provisions may be defined in order to encourage or facilitate services to the poor, such as coverage targets (obligations to extend services), social connections, or the ability to offer differentiated service levels to different groups. Providers have to meet certain basic requirements before obtaining a license.

Permits or Contracts may set the criteria for qualification, objective, quality standards, operational and maintenance requirements, financial and operation conditions, performance evaluation criteria, mechanisms for resetting the rules in case of unforeseen events, dispute-resolution mechanisms, tariff setting and review rules, remuneration and penalties and incentives to encourage the service provider to perform its obligations.

In accordance with the review of country's regulatory systems contained in Part III of this report and the recommended regulatory instruments contained in Table K, the recommended licensing framework along the sanitation chain is as follows:

a) Capture

Construction permits are issued by the local authorities which include among other things, the approval for construction of a toilet facility. However, currently, only pour flush toilets which are connected to the septic tank systems are approved, but existing improved pit latrines are tolerated i.e. no legal sanctions are taken against the owner. The proposal in this framework is to include the approval of construction of improved pit latrines or facilities from ecological sanitation in peri-urban areas.

b) Emptying and transport

Since activities for emptying and transport of faecal sludge are closely linked, it is recommended that the Sanitation Regulator (SR) issues a combined licence for faecal sludge emptying and transport to a Sanitation Utility (SU). Thereafter, depending on the capacity or the technology used by the private sector or CBO, a SU may issue separate permits for emptying and transport or a combined permit. For example, operators of Exhaust Trucks should be issued a combined license while operators of manual or motorised emptying services and operators of transit storage and transport facilities might be issued a separate permit. Where separate permits will be issued, a SU should coordinate emptying and transport activities to ensure that faecal sludge is emptied in the respective treatment facility.

c) **Faecal Sludge Treatment**

Feacal sludge treatment licence to be issued by SR to SU for both centralised and decentralised treatment units. Faecal sludge treatment permit to be issued by SU to Private Sector or CBO in case of decentralised treatment units. In this case, the SU will be delegating its duty of faecal sludge treatment to the private sector or CBO through the permit.

The seller of treated sanitation products for reuse must guarantee adequate pathogen control measures.

d) Effluent discharge

In accordance with the review of country's regulatory frameworks in Part III and the proposed framework as indicated above, Effluent Discharge licences do exist and are issued by either an Environmental Agency or a Water Resources Authority, but the recommendation is that it be issued by the Environmental Agency.

ii) Outline of the Licence/Permit

In order to implement the recommended regulatory framework, two types of licenses/permits templates which are not available to most regulators need to be prepared, which are emptying and transport license/permits and faecal sludge treatment license/permit. Depending on the extent to which a Sanitation Utility intends to delegate its regulated activities, the contents of the license and permit might be similar and are indicated in Annex C.

4.2.5 Internal Regulatory Set-up

The introduction of the sanitation regulatory framework and implementation of the recommended strategies will require a reorganisation of the internal set-up of most regulators. Most of ESAWAS regulators are regulating water supply and sewerage services only. Therefore, the current organisational set-up of a sanitation or sewerage unit is in accordance with the current functions of regulating sewerage services. Since sewerage (sewered sanitation) and non-sewered sanitation are closely linked, it is recommended that duties and responsibilities between the two be closely coordinated under a single sanitation unit. *However, since non-sewered sanitation has been neglected for a longer time, it is not recommended to combine the two in one job portfolio.* Depending on the extent of sanitation services, the recommendation is to have a dedicated staff responsible for non-sewered sanitation with the job description as detailed below.

Job description of a Sanitation Unit (or Dedicated Sanitation Staff)

The objective of having a sanitation unit with dedicated non-sewered sanitation staff is to ensure that there are clear activities or job description that are dedicated towards effective implementation of the sanitation framework and strategy to ensure that there is a provision of reliable, safe, adequate, affordable and inclusive sanitation services in urban and peri-urban areas. The sanitation unit, in collaboration with a dedicated staff for regulation of sewerage services, will perform the following activities:

(i) Assist in ensuring optimal provision of technical, environmental and safety inputs to regulating the sanitation services;
(ii) Coordinate the review, issuance, renewal and revoking of licenses for sanitation services;
(iii) Assist in reviewing technical viability of new sanitation service development projects including construction of faecal sludge treatment plants;
(iv) Assist in monitoring availability and standards of services provided by Sanitation Utilities, perform verification tests to determine quality of effluents and treated faecal sludge;
(v) Assist in facilitating capacity building programs in provision of better services by Sanitation Utilities;
(vi) Participate in reviewing, updating, and advise on the entire sanitation services licensing process, including proposing licence fees, reviewing terms and conditions of licenses and tariffs, reviewing and advising on tariffs and charges, rules for terms and conditions of licenses sanitation service provision;

(vii) Coordinate monitoring and measuring of licensees' performance and compliance with the licence conditions;

(viii) Publicize, promote and create awareness through producing publicity and education materials on sanitation;

(ix) Establish and maintain effective working relationship with key stakeholders in sanitation;

(x) To facilitate collection of data and information on the performance on sanitation agenda from sanitation utilities and report progress in key performance indicators; and

(xi) To monitor performance of the Sanitation Utilities in terms of investments, availability of sanitation services, cost of services and level of efficiency in provision of sanitation services.

General qualification of a dedicated staff for sanitation (as a single staff or a key staff within the sanitation unit) shall include a basic engineering profession related to sanitary engineering with additional knowledge/qualification in onsite sanitation and faecal sludge management. An effective regulation of onsite sanitation shall require other skills including finance, economic regulation, and legal. These skills may be provided internally from cross cutting departments, similar to the regulation of water supply and sewerage.

4.3 Assessment of Implementation Preparedness

The implementation of the recommended changes in the existing regulatory framework essentially involves changing the enabling environment, this is a challenging task. The starting point will depend on the level of preparedness in terms of the enabling environment available in the respective country for the Sanitation Regulator to implement non-sewered sanitation regulation framework. The enabling environment is achieved when there are supportive policies, legal and institutional frameworks. The level of implementation preparedness is determined by evaluating the level of the enabling environment available to each particular Sanitation Regulator.

4.3.1 Criteria for Determination of Preparedness

The implementation preparedness of regulators to implement the proposed sanitation regulatory framework is evaluated by assigning points and weights to components of the enabling environment which include the legal framework, institutional framework and policy as follows:

i) In order to have a fair assessment of the level of preparedness reached by a particular country in the region, each component of the enabling environment, i.e. legal framework, policy/strategy and institutional framework has been split into milestones which depict improving levels of achievement of each component. Milestones have been assigned points whereby best enabling policies, legal framework and institutional framework will score 3 points and other categories with less enabling environment have been assigned lower points up to 1.0.

ii) In addition, enabling components i.e. Policies, legal frameworks and institutional frameworks have been given weights depending on the level of importance for each component in implementing non-sewered sanitation regulation framework. The legal framework has been given the highest weight of 3, since an enabling legal framework is key (laws are enacted by the legislature which indicates political willingness, they legalise the implementation of the framework and gives the authority to enforce) to implementing the framework, the institutional framework which is mostly provided for in the legal instruments follows with a weight of 2.0 while policies and strategies which are mostly dependant on the executive have been assigned a weight of 1.0.

iii) Furthermore, interventions which are being undertaken by in each regulators' countries for implementing non-sewered sanitation regulation framework have been considered in evaluating the preparedness whereby similarly as in (i) above legal interventions are given higher points (1.5);

institutional interventions (1.0); and policy interventions (0.5). Ongoing interventions have been given 50% of the points given in (i) above since these are still plans and have not been realised. Similarly, all planned interventions have been given a weightage of 1.0.

The criteria for determination of preparedness of Sanitation Regulators to implement the proposed sanitation regulatory framework is summarised in Table L.

Table L: Criteria for Determination of Preparedness

S/N	Enabling Environment for Regulators	Points (Pts)	Weight (Wgt)
1	***Policy/Strategy:***		
	Covers sewered and non-sewered sanitation	3	1
	Provides more focus on sewered and less/scant focus on non-sewered sanitation	2	1
	Covers sewered services only	1	1
2	***Legal Framework gives Mandate to the Regulator to regulate:***		
	Sewered and non-sewered sanitation services and is being implemented.	3	3
	Sewered and non-sewered sanitation services but non-sewered services not yet implemented.	2	3
	Sewered services only.	1	3
3	***Roles and Responsibilities of a Sanitation Regulator Along the Chain:***		
	Regulating sewered sanitation, faecal sludge emptying, transport, faecal sludge treatment and waste water treatment.	3	2
	Regulating sewered sanitation, faecal sludge emptying, transport and waste water treatment.	2	2
	Regulating sewered sanitation and waste water treatment	1	2
4	***Ongoing Initiatives to Create/Strengthen the Enabling Environment on:***		
	Policy and Strategies	0.5	1
	Legal Framework	1.5	1
	Institutional Framework	1.0	1

4.3.2 Determination and Assessment of Level of Implementation Preparedness

The scores for each country are obtained by multiplying the earned points by the weightage of each enabling component. The level of implementation preparedness for Regulators for a particular country is obtained by summing up scores earned on each of the enabling component including the planned interventions. This computational framework is offered as a first approximation of relative preparedness, recognizing that idiosyncratic factors such as political leadership, public awareness, and national priorities also affect the readiness for reform.

The determination of the level of implementation preparedness for each Regulator's country is shown in Table M.

Table M: Assessment of Level of Implementation Preparedness of the Framework

S/N	Enabling Environment for Regulators	Pts	WGT	Scores							
				AREEN	WASREB	LEWA	AURA,IP	RURA	EWURA	NWASCO	ZURA
1	***Legal Framework gives Mandate to the Regulator to regulate:***										
	Sewered and non-sewered sanitation services and is being implemented.	3	3	-	-	-	-	9	-	9	-
	Sewered and non-sewered sanitation services but non sewered services not yet implemented	2	3	6	-	-	6	-	6	-	-
	Sewered services only	1	3	-	3	3	-	-	-	-	3
	Total -1			***6***	***3***	***3***	***6***	***9***	***6***	***9***	***3***
2	**Policy/ Strategy:**										
	Covers sewered and non-sewered sanitation	3	1	3	3	3	3	3	-	3	-
	Provides more focus on sewered and less/scant focus on non-sewered sanitation	2	1	-	-	-	-	-	-	-	2
	Covers sewered services only	1	1	-	-	-	-	-	1	-	-
	Total – 2			***3***	***3***	***3***	***3***	***3***	***1***	***3***	***2***
3	**Roles and Responsibilities of a SR along the Sanitation Chain**										
	Regulating sewered sanitation, faecal sludge emptying, transport, faecal sludge treatment and waste water treatment.	3	2	-	-	-	-	-	-	-	-
	Regulating sewered sanitation, faecal sludge emptying, transport and waste water treatment.	2	2	-	-	-	-	4	-	-	-
	Regulating sewered sanitation and waste water treatment	1	2	2	2	2	2	-	2	2	2
	Total – 3			***2***	***2***	***2***	***2***	***4***	***2***	***2***	***2***
	TOTAL (1+2+3)			***11***	***8***	***8***	***11***	***16***	***9***	***14***	***4***
4	**Ongoing Initiatives to Create/Strengthen Enabling Environment**										
	Policy and Strategies	0.5	1	-	0.5	0.5	-	-	0.5	-	-
	Legal Framework	1.5	1	-	1.5	-	-	1.5	1.5	1	-
	Institutional Framework	1.0	1	-	1	-	-	-	1	1	-
	Total – 4			***-***	***3***	***0.5***	***-***	***1.5***	***3***	***2***	***-***
	GRAND TOTAL (1+2+3+4)			***11***	***11***	***8.5***	***11***	***17.5***	***12***	***16***	***7***

4.3.3 Ranking of Implementation Preparedness

The ranking of Sanitation Regulators is a result of the assessment of implementation preparedness to implement non-sewered sanitation regulation framework which is discussed in sub-section 4.4.2 and is summarised in Table N.

Table N: Ranking of Implementation Preparedness

Preparedness Ranking	Regulator
1	Rwanda Utilities Regulatory Authority (RURA) of Rwanda
2	National Water Supply and Sanitation Council (NWASCO) of Zambia
3	Energy and Water Utilities Regulatory Authority (EWURA) of Tanzania
4	Water and Energy Regulator (AREEN) of Burundi
4	Water Services Regulatory Board (WASREB) of Kenya
4	Water and Sanitation Regulatory Council (AURA,IP) of Mozambique
7	Lesotho Electricity and Water Authority (LEWA) of Lesotho
8	Zanzibar Utilities Regulatory Authority (ZURA) of Zanzibar

4.4 Strategies for Implementation of Sanitation Framework

The proposed strategies for implementation of sanitation framework are of two types, namely (i) Strategies for enhancing the enabling environment; and (ii) Strategies for operationalization of the sanitation framework. The strategies including the resource requirements for implementation of each strategy are summarized in Tables O and P.

i) Strategies for Enhancing the Enabling Environment
These are strategies that have been derived from the evaluation of preparedness by regulators to implement the sanitation framework. The strategies address existing gaps within the existing enabling environment

ii) Strategies for Operationalization of the Sanitation framework - which include capacity development measures, preparation of regulatory tools, collection of data and information etc.

Table O: Strategies for Enhancing the Enabling Environment for Regulators

No	Strategies	BR	KE	LE	MO	RW	TZ	ZAM	ZNZ
	Roadmap for Implementation of Regulatory Framework								
1	Prepare Roadmap for implementation of non-sewered sanitation regulatory framework.	√	√	√	√	√	√	√	√
	Strengthening Legal Framework to regulate non-sewered sanitation								
2	Review of a sewerage legal framework to accommodate non-sewered sanitation	-	√	√	-	-	-	-	√
	Strengthening the Policy/ Strategy on issues of non-sewered sanitation								
3	Review the sewerage/ sanitation policy to accommodate non-sewered sanitation	-	-	-	-	-	√	-	√
	Institutional Set-up – Strengthening the roles of SR to regulate faecal sludge emptying, transport and treatment								
4	Review the appropriate legal instrument (subsidiary legislation) to assign roles of regulating faecal sludge emptying, transport and treatment to SR.	√	√	√	√	√	√	√	√

Key: BR – Burundi; KE – Kenya; LE – Lesotho; MO – Mozambique; RW – Rwanda; TZ – Tanzania; ZAM – Zambia and ZNZ- Zanzibar; SR – Sanitation Regulator.

Table P: Strategies for Operationalization of the Sanitation Framework

S/N	Strategy
1	**Preparation / Review of Regulatory Tools**
	(a) Preparation of: • Manual of technological options, (design and construction, emptying, transportation and treatment technologies) for onsite facilities • Faecal sludge emptying and transportation licence • Standard Operating Procedures for Faecal Sludge Management (FSM) • Faecal sludge treatment licence • Accounting and Tariff setting guidelines for faecal sludge emptying and transportation • Contract for outsourcing faecal sludge emptying and transportation charges by SU (delegated management) • Permit for sludge emptying and transportation (issued by the SU) to the private sector/CBO • Contract for outsourcing faecal sludge treatment (delegated management) • Permit for provision of faecal sludge treatment (issued by SU) to private sector /CBO • Quality of service guidelines/rules for FSM including minimum service levels • City-wide sanitation planning guidelines • Faecal sludge monitoring guidelines (b) Review of existing guidelines/rules/processes (ie performance monitoring system, key performance indicators, complaints handling, minimum quality of service standards, business panning guidelines, asset management, service level agreements, client service charter) to include regulation of non-sewered sanitation (10Nos)
	Data and Information
2	Conduct Baseline Surveys to define status of sanitation (also capturing information on equity and gender inclusiveness).
3	Establish ESAWAS Sanitation Database, software and hardware
4	Awareness Creation and Hygiene Promotion
	Capacity Building
5	Develop and implement a comprehensive training programme (aligning to the universities in the region as well as to the technical and vocational institutions) for onsite sanitation and fecal sludge management. The capacity building shall be for implementors of the framework at various stages (households, private sector, CBOs, Central and Local Government officials, Regulators, Utilities and Environmental Officers) of the sanitation chain.
6	Facilitate knowledge and information exchange of best practices in onsite sanitation and fecal sludge management among regulators in ESAWAS region.
	Financing Options along the Sanitation Chain
7	Prepare a financing options for operation and maintenance and investment of various sanitation chain infrastructure i.e innovative financing along the sanitation chain including subsidizing the cost of the toilet by the local government, NGOs, CBOs, using loans/grants for construction of Treatment Plants and modalities for private sector investment in areas of faecal sludge emptying, transport and treatment.

4.5 Monitoring the Sanitation Value Chain[9]

Monitoring the sanitation value chain is a key environmental health function to track progress and inform management decisions. This is especially important given that safe sanitation systems depend on continuously provided services meeting the principles of safe sanitation management at each step. It is from this context that the sanitation value chain requires a robust and continuous monitoring of the common sanitation indicators and definitions for measuring progress of implementation of the framework. In order to have a common understanding on measuring progress on the implementation of the framework, common sanitation definitions are presented in Annex D.

Monitoring is required at various levels in the sanitation chain:

(i) **Individual facility level:** checking that sanitation standards are being met and good hygiene behaviours practiced;
(ii) **Community level:** environmental health inspections to check standards and practices are met in all settings across the entire community;
(iii) **Utility or Service Provider Level:** ensuring sanitation safety plans are present and implemented, and that standards are met along the sanitation service chain
(iv) **Sectoral and Municipality Level:** ensuring by-laws and regulations are set and monitored; measuring sanitation indicators and quantifying progress;

The indicators used and information required for these different levels of monitoring differ, with a larger number of indicators needed at the individual facility, utility and sectoral or sub-national levels to inform local programmes and actions, while a smaller number of indicators are used for national and international monitoring to track progress towards sector targets.

Information on the toilet end of the sanitation service chain can only be obtained by visiting people where they live. This is done systematically, but periodically, in the national census and in some cases through decentralised monitoring mechanisms. Household surveys led by national statistical authorities, as well as externally-supported surveys such as the multi-indicator cluster survey (MICS) and the demographic and health survey (DHS), typically undertaken every four to five years, are usually powered to provide information for national and sometimes sub-national level, but do not provide sufficient detail for comprehensive local planning.

At the individual, utility or service provider and sub-national monitoring level, studies will be done by sanitation utility staff with support from health officers from the respective Municipalities/Local government. They should also monitor the containment, conveyance and treatment and safe use/disposal steps. Where lapses are observed, remedial action should be initiated with the relevant person or institution.

To monitor sanitation, regulators (with support from local government health officers) may play an important role in collecting individual and sub-national level information on:

(i) Sanitation and related facilities (superstructure, hand-washing facilities) and the way they are used.
(ii) For onsite facilities, the effectiveness and safety of in-situ treatment or the emptying and transport of faecal sludge.
(iii) For sewerage, the extent of leakage and overflow of untreated sewage.
(iv) The effectiveness of faecal sludge and sewage treatment against national standards or permits.
(v) The extent and effectiveness of community engagement on sanitation.

[9] Section 4.6.2; Guidelines on Sanitation and Health. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

Practical considerations dictate that only a limited number of indicators can be monitored. It is also important that at least the basic indicators tracking the SDG target for sanitation are monitored. SDG target 6.2 on sanitation is tracked at the global level through the indicator of proportion of the population using safely managed sanitation services, which is defined as the population using an improved sanitation facility that is not shared with other households, and where excreta are either:

(i) treated and disposed of in-situ;
(ii) stored temporarily and then emptied and transported to treatment offsite; or
(iii) transported through a sewer with wastewater and then treated offsite.

Core indicators within national monitoring systems should capture global monitoring elements as a minimum (refer Table Q) as well as additional nationally relevant elements. The following indicators are recommended to be included in the monitoring system of sanitation utilities.

Table Q: Sanitation Indicators

S/No	Indicator	Definition
1	Percentage of population using adequate sanitation	Percentage of population using an improved sanitation facility not shared with other households (basic service)
2	Percentage of population using safely managed sanitation services or Percentage of population with access to sanitation services provided by the CUs	Percentage of population using an improved sanitation facility not shared with other households and where excreta is safely disposed *in situ* or treated offsite. Includes: a. Percentage of population using a pour-flush toilet connected to a sewer network that is connected to a decentralized treatment plant. b. Percentage of population using a pour-flush toilet connected to a sewer network that is connected to a communal septic tank, which is emptied and the faecal sludge disposed of safely. c. Percentage of population using a pour-flush toilet connected to a septic tank, which is emptied and the faecal sludge disposed of safely. d. Percentage of population using a pour-flush toilet connected to a pit, which is emptied and the faecal sludge disposed of safely. e. Percentage of population using a compost latrine which can be emptied, and compost disposed of safely. f. Percentage of population using a VIP latrine which can be emptied and faecal sludge disposed of safely. g. Percentage of population using a urine-diversion latrine which can be emptied, and sanitation products disposed of safely or reused.

S/No	Indicator	Definition
3	Percentage of population using an unimproved sanitation facility.	Percentage of population using unimproved sanitation facilities (flush/ pour-flush not going to sewer/septic tank/pit, pit latrines without a slab, hanging and bucket latrine), with or without sharing with other households.
4	Percentage of population practicing open defecation.	Percentage of population practicing open defecation (defecating in bushes, fields, open water bodies or other open spaces).
5	Percentage of population with hand washing facilities with soap and water at home.	Population with a handwashing facility with soap and water in the household.
6	Share of human excreta that reaches designated disposal sites or Percentage of wastewater safely treated.	Proportion of wastewater (sewage and faecal sludge) generated by households and by economic activities which is safely treated compared to total wastewater generated by households and economic activities.

It is recommended that a Sanitation Regulator be responsible for reporting the country's SDG 6.2 achievement.

4.6 Awareness Creation and Hygiene Promotion

4.6.1 Awareness Creation

Awareness creation and political support at all levels is essential. FSM involves departures from conventional methods, especially in its institutional approaches. During implementation of the framework and strategy, considerable efforts should be devoted to familiarize elected officials, influential people, senior sector staff, advisers and the public with the FSM concepts. This will involve presentations, seminars, visits to demonstration projects in communities to learn about the possibilities offered by FSM. The objective, at least initially, is to secure agreement, support and acceptance on the implementation of the framework and strategy.

Preparation of awareness creation activities may focus, among other aspects, on how to:

- Identify the objectives and targets and adequately plan the corresponding advocacy actions;
- Identify what could potential partners deliver;
- Strike stronger partnerships for more effective advocacy;
- Raise finances according the budget activities;
- Lever additional human resources with the required skills and experience;
- Guarantee good reputation among the target audiences or define strategies to overcome issues; and
- Allocate enough time to implement activities and get potential synergies with other events.

4.6.2 Hygiene Promotion and Behaviour Change

The full benefits of improvements in access to sanitation and drinking water cannot be realised without good hygiene. Of the range of hygiene behaviours considered important for health, hand washing with soap is a top priority in all settings. Menstrual hygiene management should also be a priority for improving the health, welfare and dignity of women and girls.

According to JMP, the most practical approach leading to reliable measurement of hand washing in national household surveys was observation of the place where people wash their hands and noting the presence of water and soap (or local alternative) at that location. This provides a measure of whether households have the necessary tools for hand washing and is a proxy for their behaviour. Observation by survey enumerators represents a more reliable, valid and efficient indicator for measuring hand washing behaviour than asking individuals to report their own behaviour.

ANNEXURES

Annex A: People Met during In-Country Visits

S/N	NAME	INSTITUTION	DESIGNATION
	BURUNDI		
1	Donat Niyonzima	AREEN	DG
2	Applollinaire Sindihebura	AHAMR	DG
3	Niragira Constantin	DGEPA	Advisor
4	Pascal Bucumi	DGEPA	Director of Basic Sanitation
5	Isaac Nyandwi	AREEN	Technical Officer
6	Mpawenimana Paul	SETEMU/Ministry of LG	DG
7	Dieudonné Sibomana	AREEN	Chief of Water and Sanitation sector Regulation Service
8	Muyuku Prosper	DPSHA/Ministry of Public Health	Chief of Hygiene and Sanitation National Service
	KENYA		
1	Herbert Kassamani	WASREB	DCPA
2	Angela Kimani	WASREB	MEK
3	Richard Cheruiyot	WASREB	MIS
4	Francis Maluki	WASREB	ISO
5	David Leleito	WASREB	TM
6	Daniel Ngugi	WASREB	Engineer
7	Bernadette Njoroge	WASREB	DLE
8	Rose Ngure	Ministry of Water and Sanitation	Deputy Director Sewerage and Sanitation
9	Muitungu Mwai	NEMA	PCEO
	LESOTHO		
1	Thuso Ntlama	LEWA	Manager Economic Regulation
2	Mahlomola Sanamolde	WASCO	DO
3	Moeti Makoa	WASCO	CEO a.i.
4	Remaeketse Latela	WASCO	Director of Finance
5	Frank F. Seboko	LEWA	Manager Technical Regulation
6	Mamathe Makhaola	LEWA	Performance Analyst - Water
7	Selloane Letsunyane	LEWA	Economic Analysis
	MOZAMBIQUE		
1	Anselmo Munhequete	AURA, IP	Operations Coordinator
2	Marculino Chemane	AURA, IP	Sanitation Officer
3	Magalhães Miguel	AURA, IP	Executive Secretary
5	Daude Carimo	National Directorate of water Supply and Sanitation (DNAAS)	Tecnico
6	Adelino	National Laboratory of Hygiene, Water and Food (LNHAA)	Tecnico
7	Azael Custema	CMM-DMI	Tecnico
8	Kaystone Catia	Water Aid	Programme Manager
	TANZANIA		
1	Exaud Fatael	EWURA	DWS
2	Titus Safari	EWURA	TMWS
3	Genzabuke Madebo	EWURA	PWE-C
4	Amani Nyekele	EWURA	SWE-D
5	Ruth Lugwisha	NEMC	DCE
6	Jackson Mutazamba	Ministry of water	Assist. Director Sanitation
7	Kamuzora M	Dar es Salaam Region	Regional Health Officer

S/N	NAME	INSTITUTION	DESIGNATION
	RWANDA		
1	Remy Norbert Duhuze	REMA	Director Environmental Regulation and Pollution Control
2	Alphonsine Mukamunana	Ministry of Health	Environmental Health Specialist
3	Flancois Tetero	Rwanda Water and Forestry Agency (RWFA)	Head of WRM Department
5	Fidele Tuyisenge	City of Kigali (COK)	Water and Sanitation Infrastructure
6	John Mugabo	City of Kigali (COK)	Solid waste Management
7	Jacques Nzitonda	RURA	Director WATSAN
8	Maecelline Kayitesi	MinIfra	Division Manager for Water and Sanitation
	ZAMBIA		
1	Peter Mutale	NWASCO	Chief Inspector
2	Peter Malopa Mwanza	ZEMA	Inspector
3	Harold Kalaba	ZEMA	Inspector
5	Aubrey Simwambi	BORDA	Engineer
6	Nachombe Nang'amba	Lusaka City Council	Senior Health Inspector
7	Nkumbu Siame	Ministry of Local Government	Director
8	Kalaba Charles	MWDSEP	Senior Engineer
9	Abel Manangi	MWDSEP	Acting Director Water Supply and Sanitation
10	Florence Mwala	Ministry of Health	CEHO
	ZANZIBAR		
1	Abdalla H. Uteni	ZURA	DTR
2	Mohamed A. Hamad	PO-RALG - Zanzibar	Senior Officer
3	Mzee K. Juma	ZUMC	Senior Municipal Planning Officer
5	Mtumwa M. Hamidun	WAMNN	Senior Statistician
6	Haidar Bakari Machono	ZEMA	Environmental Officer
7	Saida Issa Omar	Department of Environment	Environmental Officer
8	Mohamed Hamdu Haji	ZAWA	Projects Engineer
9	Suleiman H. Masoud	ZURA	Water Inspector
10	Latifa Amour Zaid	ZURA	H&E
11	Zeyena M. Ali	ZURA	Water Inspector
12	Sauda W. Msomi	ZURA	Legal Officer
13	Ramadhan Kombo Ali	ZURA	Water Inspector
14	Hassan Juma Amour	ZURA	Public Relations Officer
15	Khuzaimat H. Haji	ZURA	Principal Public Relations Officer
16	Mbarak Hassan Haji	ZURA	Public Relations Officer
17	Nurdin Juma Issa	ZURA	Financial Analyst
18	Abubakar Ali Almasi	ZURA	Legal Officer
19	Bakar Juma Bakar	ZURA	Projects Officer

Annex C: Outline for Licence/Permit Application and Template

(for Faecal Sludge Emptying and Transport Service and Faecal Sludge Treatment Service)

Application for a Licence
In order to accept an application and to grant a licence, a licensee shall provide the following information, among others, to the Regulator

General
Nature of the business activities; e methods or principles that the applicant proposes to apply in the provision of services, terms and conditions of any proposed standard customer contract between the applicants etc.

Corporate information
Company name, experience in the area, list of company directors and sharehoders, number of employees

Financial information
Applicants must demonstrate that they have and will continue to have the financial ability to provide services that will be covered by the licence.

Technical information
Applicants must demonstrate that they have and will continue to have the technical capacity to meet licence conditions and any other regulatory requirements.

Public interest information
Applicants to demonstrate that they will not conflict with public interests i.e. environmental considerations; social welfare and equity considerations, including community service obligations; public health and safety considerations relating to the provision of a services.

Further information
The Authority may require additional information from the applicant and may make such other enquiries as it considers necessary to assess the application.

Licence / Permit Outline (Emptying & Transp.; FS Treatment)

LICENCE TEMPLATE

SANITATION UTILITIES REGULATORY AUTHORITY (SURA)

FAECAL SLUDGE EMPTYING AND TRANSPORTATION SERVICES /TREATMENT LICENCE

LICENCE NO.SSL/--/----

(Issued pursuant to Section …… of the Sanitation Act, Cap. ……)

A licence to provide Sanitation Services is hereby granted to..... with its registered office at ..... subject to the terms and conditions in the Appendix.

This licence shall be valid from this…….. day of ……..20..... and shall remain in force for ..... years unless revoked, extended or another licence is issued by the Authority under the terms and conditions provided in the Appendix.

…… SEAL _____
Date of Issue

Authorised Signature

_____

Authorised Signature

APPENDIX

General Provisions

This license has been issued in accordance with the (Applicable law /regulations) governing faecal sludge emptying and transport / faecal sludge treatment based on the License application submitted by …….. ……

Clause 1 - Definitions

Clause 2 - Licence to Operate

Licence – services to be provided
Term
Operating Area – *Schedule 1*
Review of Licence
Renewal of Licence

Clause 3 - Terms and Conditions

General -terms and conditions
Customer Complaints – *Schedule 2*
Customer Charter – *Schedule3*
Customer Consultation – *Schedule 4*
Principles of Service – *Schedule 5*
Supply of Information -*Schedule 6*
Prices or Charges – *Schedule 7*

Clause 4 - Standards and Requirements

Asset Management
Business Plan
Operational Audit
Technical Standards
Standards for the Provision of Services- *Schedule 8*
Performance Indicators and Reporting Requirements - *Schedule 9*

Clause 5 - Amendment or Revocation of Licence

Amendment
Procedure
Revocation

Clause 6 – Contracting Services

Schedules
Schedule 1: Areas of Operation
Schedule 2: Customer Complaints and Investigation, Conciliation and Arbitration
Schedule 3: Customer Charter
Schedule 4: Customer Consultation
Schedule 5: Sanitation Services Provision
Schedule 6: Information
Schedule 7: Prices or Charges
Schedule 8: Standards and Principles for the Provision of Sanitation Services
Schedule 9: Levels of Service Standards, Performance Indicators and Reporting Requirements

Annex D: List of Sanitation Definitions[10]

Word/Description	Definition	Source
Adequate sanitation	This refers to a sanitation facility that provides privacy and separates human excreta from human contact.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Adequate sanitation	Adequate sanitation is a sanitation system that is accessible and available (located not more than 100 m away from home and is easy to access for children, elderly and handicapped at all times during the day); it is acceptable for the user and provides a safe and convenient, private, secure and dignified place and complies with the socio- cultural norms of society (e.g. smell and reuse aspects); it is affordable and can realistically be paid for by the households and provides a hand washing facility.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Basic sanitation	Basic sanitation refers to the management of human faeces at the household level. Basic sanitation is improved sanitation: facilities that ensure hygienic separation of human excreta from human contact. They include: • Flush or pour-flush toilet/latrine to a piped sewer system, a septic tank or a pit latrine • Ventilated improved pit latrine • Pit latrine with slab • Composting toilet	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Biogas	Biogas is the common name for the mixture of gases released from anaerobic digestion. Typically biogas is comprised of methane (50–75%), carbon dioxide (25–50%) and varying quantities of nitrogen, hydrogen sulphide, water and other components.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Black water	Black water is the mixture of urine, faeces and flush water along with anal cleansing water (if anal cleansing is practiced) and/or dry cleansing material (e.g. toilet paper). Black water has all the pathogens of faeces and all the nutrients of urine, but diluted in flush water.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Brownwater	Brownwater is the mixture of faeces and flushwater, and does not contain urine. Urine-diverting flush toilets generate it and, therefore, the volume depends on the volume of the flushwater used. The pathogen and nutrient load of faeces is not reduced, only diluted by the flushwater. Brownwater may also include anal cleansing water (if water is used for cleansing) and/ or dry cleansing materials.	World Health Organization: Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.

[10] NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia

Word/Description	Definition	Source
Bucket toilet	Bucket refers to the use of a bucket or other container for the retention of faeces (and sometimes urine and anal cleaning material), which are periodically removed for treatment, disposal, or use as fertilizer.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Bush facilities	No facilities or bush or field includes defecation in the bush or field or ditch; excreta deposited on the ground and covered with a layer of earth (cat method); excreta wrapped and thrown into garbage; and defecation into surface water (drainage channel, beach, river, stream or sea).	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
By-law	A regulation made by a local authority or corporation; a rule made by a company or society to control the actions of its members.	World Health Organization: Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
City Wide Inclusive Sanitation	Citywide inclusive sanitation means that: everybody benefits from adequate sanitation service delivery outcomes.	**Source:** https://citywideinclusivesanitation.com/ (By the Bill & Melinda Gates Foundation, Emory University, Plan International, The University of Leeds, WaterAid, the World Bank).
Collection and storage/ treatment	Collection and Storage/Treatment describe the ways of collecting, storing, and sometimes treating sanitation products that are generated at the user interface. Treatment that is provided by different sanitation technologies is often a function of storage and usually passive (e.g. no energy inputs). Thus, sanitation products that are 'treated' by sanitation technologies often require subsequent treatment before use or disposal.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Community-Led Total Sanitation	Community-Led Total Sanitation (CLTS) is an approach to achieve behaviour change in mainly rural people by a process of "triggering", leading to spontaneous and long-term abandonment of open defecation practices. CLTS takes an approach to rural sanitation that works without hardware subsidies and that facilitates communities to recognise the problem of open defecation and take collective action to clean up and become "open defecation free".	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Compost	Compost is the earth-like, brown/black material that is the result of decomposed organic matter. Generally, compost has been hygienised sufficiently that it can be used safely in agriculture. Because of leaching, some of the nutrients are lost, but the material is still rich in nutrients and organic matter.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Composting toilet	Composting toilet is a dry toilet into which carbon-rich material (vegetable wastes, straw, grass, sawdust, ash) are added to the excreta and special conditions maintained to produce inoffensive compost. A composting latrine may	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia Federal.

Word/Description	Definition	Source
	or may not have a urine separation device.	
Delegated management	Delegated management (DM) is built around a contractual relationship between water and sanitation utilities and small-scale private operators who have the financial incentives to increase access and improve services.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Dry sanitation	The term "dry sanitation" is somewhat misleading as sanitation includes hand washing and can never be "dry". A more precise term would be "dry excreta management". When people speak of "dry sanitation" they usually mean sanitation systems with dry toilets with urine diversion, in particular the urine-diverting dry toilet (UDDT).	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Ecological sanitation	Ecological sanitation, which is commonly abbreviated to EcoSan, is an approach, rather than a technology or a device which is characterised by a desire to "close the loop" (mainly for the nutrients and organic matter) between sanitation and agriculture in a safe manner. Put in other words: "EcoSan systems safely recycle excreta resources (plant nutrients and organic matter) to crop production in such a way that the use of non-renewable resources is minimised". When properly designed and operated, EcoSan systems provide a hygienically safe, economical, and closed-loop system to convert human excreta into nutrients to be returned to the soil, and water to be returned to the land. EcoSan is also called resource-oriented sanitation.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Effluent	Effluent is the general term for liquid that has undergone some level of treatment and/or separation from solids. It originates at either a collection and storage/treatment or a (semi) centralised treatment facility. Depending on the type of treatment, the effluent may be completely sanitised or may require further treatment before it can be used or disposed of.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Environmental sanitation	Environmental sanitation encompasses the control of environmental factors that are connected to disease transmission. Subsets of this category are solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Excreta	Excreta consists of urine and faeces that is not mixed with any flushing water. Excreta is small in volume, but concentrated in nutrients and pathogens. Depending on the quality of the faeces it is solid, soft or runny.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Faecal sludge	Faecal sludge comes from onsite sanitation technologies and has not been transported through a sewer. It is raw or partially digested, a slurry or semi-solid, and results from the collection, storage or treatment of combination	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia

Word/Description	Definition	Source
	of excreta wastewater with or without grey water.	
Faecal sludge	Faecal sludge comes from onsite sanitation technologies (e.g. latrines, non-sewered public toilets, septic tanks and aqua privies) and has not been conveyed in a sewer. It can be raw or partially digested, a slurry or semisolid, and results from the collection and storage/treatment of excreta or blackwater, with or without greywater. Septage is the contents collected from septic tanks and is included in this term (see also excreta).	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia Federal
Faecal sludge management	A system for safe collection, transport, treatment, disposal and/or reuse of faecal sludge.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Faeces	Faeces refers to (semi-solid) excrement without urine or water. Each person produces approximately 50 L per year of faecal matter. Of the total nutrients excreted, faeces contain about 10% N, 30% P, 12% K and have 107–109 faecal coliforms /100 ml.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Flush/pour flush (to pit) latrine	Flush/pour flush to pit latrine refers to a system that flushes excreta to a hole in the ground or leaching pit (protected, covered).	WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP)
Grey water	Grey water is the total volume of water generated from washing food, clothes and dishware as well as from bathing. It may contain traces of excreta and therefore will also contain pathogens and excreta. Grey water accounts for approximately 60% of the wastewater produced in households with flush toilets. It contains few pathogens and its flow of nitrogen is only 10–20% of that in black water.	Tilley, Elizabeth et al, 2008. *Compendium of Sanitation Systems and Technologies.* Swiss Federal Institute of Aquatic Science and Technology (Eawag). Dübendorf, Switzerland
Hygiene	A set of practices performed for the preservation of health and cleanliness covering personal as well as environmental practices, such as frequent hand washing.	MLGH (2016). Draft National Water Supply, Sanitation and Solid Waste Management Policy and Implementation Plan (Final Draft).
Improved onsite sanitation facilities	Improved onsite sanitation facilities are: • Flush or pour-flush toilet connected to a septic tank • Pour-flush toilet connected to a pit latrine • Ventilated improved latrine (VIP) • Urine diversion latrine • Compost latrine • Improved single pit latrine (provided with structurally safe squatting plate and superstructure)	NUWSSP
Improved sanitation	Improved sanitation refers to the *use of an improved sanitation facility.* An improved sanitation facility is one that hygienically separates human excreta from human contact, thus creating barriers to prevent the transmission of diseases. To be effective the facility must be correctly constructed and properly maintained in a way that confers maximum	WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP).

Word/Description	Definition	Source
	health benefits to the user. Improved sanitation facilities are: • Flush or pour-flush toilet connected to (a) piped sewer system, (b) septic tank or (c) pit latrine • Ventilated improved latrine (VIP) • Pit latrine with slab • Composting toilet	
Latrine	A latrine includes privy, urinal, earth closet and water closet.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Legislation	Laws, considered collectively, as well as the process of making or enacting laws	World Health Organization: Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Manual emptying	In this document refers to the emptying of faecal sludge from onsite sanitation technologies, where humans are required to manually lift the sludge. Manual emptying can be used with either manual or motorized transport.	World Health Organization: Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Manual transport	In this document refers to the human-powered transport of faecal sludge emptied from onsite sanitation technologies. Manual transport can be used with manual or motorized emptying**.**	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Motorized emptying	In this document refers to the use of motorized equipment for the emptying of faecal sludge from onsite sanitation technologies. Humans are required to operate the equipment and manoeuvre the hose, but the faecal sludge is not manually lifted. Motorized emptying is most commonly followed by motorized transport, but it is also used with manual transport.	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Motorized transport	In this document refers to the use of motorized equipment for the transport of faecal sludge from onsite sanitation technologies. Humans are required to operate the equipment, but the faecal sludge is not manually transported. Motorized transport can be used with either motorized or manual emptying**.**	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Nightsoil	Nightsoil is human excreta, with or without anal cleansing material, which are deposited in a bucket or other receptacle for manual removal.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Offsite disposal	In areas with high population densities sewerage systems are frequently used to transport wastes offsite where they can be treated and disposed. Conventional centralised sewerage systems require an elaborate infrastructure and sufficient amounts of water to carry the wastes away. The cost of a sewerage system can be as much as 70 times more expensive than onsite alternatives and its requirement of a piped water supply preclude its adoption in many developing countries. In	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.

Word/Description	Definition	Source
	specific circumstances, cost-effective alternatives to conventional sewerage systems have been developed including small diameter gravity sewers, vacuum and pressure sewers.	
Offsite sanitation	A sanitation system in which excreta (referred to as wastewater) is collected and transported away from the plot where they are generated. An offsite sanitation system relies on a sewer technology for transport.	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Onsite disposal	In many places, particularly in areas with low population densities, it is common to store and treat wastes where they are produced – on site. There are a number of technical options for onsite waste management which if designed, constructed, operated and maintained correctly will provide adequate service and health benefits when combined with good hygiene. Onsite systems include: ventilated improved pit (VIP) latrines, double vault composting latrines, pour-flush toilets and septic tanks. Dry sanitation or eco-sanitation is an onsite disposal method that requires the separation of urine and faeces. Building and operating these systems is often much less expensive than offsite alternatives. Some onsite systems (e.g. septic tanks or latrines in densely packed urban areas) require sludge to be pumped out and treated offsite. Composting latrines allow waste to be used as a fertiliser after it has been stored under suitable conditions to kill worm eggs and other pathogens.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Onsite sanitation	Non-sewered sanitation is also commonly referred to as onsite sanitation because the containment facilities are situated within the plot occupied by a dwelling or its immediate surroundings. Onsite sanitation, also called decentralised sanitation, is a system where the treatment of excreta or sewage takes place at the same location where it is generated.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia Federal.
Onsite sanitation facilities	These facilities are associated with individual household latrines, but also include facilities shared by several households living together on the same plot or in the immediate vicinity of the toilet.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Open defecation	Open defecation is the practice of people defecating outside and not into a designated toilet.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia
Open Defecation Free	In order for a village to be verified ODF, it must meet the following criteria: 1. No evidence of faeces in or around household compounds 2. Every household has an 'adequate' toilet, meaning one that effectively separates excreta from human contact and has: • a smooth, cleanable floor (not necessarily	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.

Word/Description	Definition	Source
	a concrete slab) • a cover for the drop hole • a superstructure providing privacy 3. Every household has a hand washing facility near the latrine, with water and soap or ash.	
Organics	Organics refers here to biodegradable organic material that could also be called biomass or green organic waste. This term refers to undigested plant material. Organics must be added to some sanitation technologies in order for them to function properly (e.g. composting chambers). Organic degradable material can include but is not limited to leaves, grass and market waste.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia Federal.
Piped sewer system	Piped sewer system is a system of sewer pipes, also called sewerage, that is designed to collect human excreta (faeces and urine) and wastewater and remove them from the household environment. Sewerage systems consist of facilities for collection, pumping, treating and disposing of human excreta and wastewater.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Policy	A course or principle of action adopted or proposed by an organization or individual; A plan or course of action, as of a government, political party, or business, intended to influence and determine decisions, actions, and other matters.	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Pollutant	Pollutant includes any substance whether liquid, solid or gaseous, which a. may, directly or indirectly, alter the quality of any element of the receiving environment; or b. is hazardous or potentially hazardous to human health or the environment; and includes objectionable odours, radio-activity, noise, temperature change or physical, chemical or biological change to any segment or element of the environment	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Polluter	Polluter means an individual, partnership, corporation or association who contributes to or creates a condition of pollution.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Pollution	Pollution in relation to water means a. any direct or indirect contamination or alteration of the biological, chemical or physical properties of water including changes in colour, odour, taste, temperature or turbidity; or b. any discharge of any gaseous, liquid, solid or other substance into any water resource; as will, or is likely to, create a nuisance or render the water detrimental, harmful or injurious to, or potentially harmful or injurious to, the health, safety or welfare of any human being, bird, fish or other aquatic ecosystem,	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.

Word/Description	Definition	Source
	livestock, wildlife or the environment.	
Pollution	Pollution means the presence in the environment of one or more contaminants in such qualities and for such duration and under such conditions as may cause discomfort to or endanger the health, safety and welfare of persons, or which may cause injury or damage to plant or animal life or property, or which may interfere unreasonably with the normal enjoyment of life or use of property or conduct of business.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
(Pour) flush toilet	A flush toilet uses a cistern or holding tank for flushing water, and a water seal (which is a U-shaped pipe below the seat or squatting pan) that prevents the passage of flies and odours. A pour flush toilet uses a water seal, but unlike a flush toilet, a pour flush toilet uses water poured by hand for flushing (no cistern is used).	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Pit latrine with slab	Pit latrine with slab is a dry pit latrine whereby the pit is fully covered by a slab or platform that is fitted either with a squatting hole or seat. The platform should be solid and can be made of any type of material (concrete, logs with earth or mud, cement, etc.) as long as it adequately covers the pit without exposing the pit content other than through the squatting hole or seat.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Public latrine/Toilet	**Public toilet** Not restricted to specific users; may be formally or informally-managed.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Regulation	The action or process of regulating or being regulated.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Regulations	Rules or directives made and maintained by an authority**.**	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Sanitation	An access to and use of facilities and services for the safe disposal of human urine and faeces.	Guidelines on Sanitation and Health, Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.
Sanitation Service chain	All components and processes comprising a sanitation system, from toilet capture and containment through emptying, transport, treatment (in-situ or offsite) and final disposal or end use.	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Sanitation products	Products are materials that are also called 'wastes' or 'resources'. Some products are generated directly by humans (e.g. urine and faeces), others are required in the functioning of technologies (e.g. flush water to move excreta through sewers) and some are generated as a function or storage or treatment (e.g. faecal sludge). For the design of a robust sanitation system, it is necessary to define all	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.

Word/Description	Definition	Source
	of the products that are flowing into (Inputs) and out (Outputs) of each of the sanitation technologies in the system.	
Septic tank	A septic tank is an excreta collection device consisting of a water-tight settling tank, which is normally located underground, away from the house or toilet. The treated effluent of a septic tank usually seeps into the ground through a leaching pit. It can also be discharged into a sewerage system.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Sewage	Sewage means waste water generated by residential, industrial and commercial establishments.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Sewerage	Sewerage includes sewage treatment plants.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Shared sanitation	Shared sanitation refers to sanitation facilities, although of an improved kind, but shared between two or more households, and all public facilities.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Simplified sewerage	A reticulated sewerage system that adopts less stringent design and construction standards that are appropriate for areas where water consumption is lower and residents are low-income. Types of simplified sewerage include small-bore and settled sewerage.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Storm water	Storm water is the general term for the rainfall runoff collected from roofs, roads and other surfaces before flowing towards low-lying land. It is the portion of rainfall that does not infiltrate into the soil.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Sustainable sanitation	Sustainable sanitation considers the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The term is widely used since about 2009. In 2007 the Sustainable Sanitation Alliance had defined five criteria to compare the sustainability of sanitation systems. In order to be sustainable, a sanitation system has to be not only (i) economically viable, (ii) socially acceptable, and (iii) technically and (iv) institutionally appropriate, it should also (v) protect the environment and the natural resources.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Toilet (often referred to as a "user interface")	The user interface with the sanitation system, where excreta is captured; can incorporate any type of toilet seat or latrine slab, pedestal, pan or urinal. There are several types of toilet, for example pour- and cistern-flush toilets, dry toilets and urine-diverting toilets	World Health Organization; Guidelines on sanitation and health. Geneva: 2018. Licence: CC BY-NC-SA 3.0 IGO.
Treatment	Process/es that changes the physical, chemical and biological characteristic or	World Health Organization; Guidelines on sanitation and health. Geneva:

Word/Description	Definition	Source
	composition of faecal sludge or wastewater so that it is converted into a product that is safe for end use or disposal**.**	2018. Licence: CC BY-NC-SA 3.0 IGO.
Urine	Urine is the liquid waste produced by the body to rid itself of urea and other waste products. In this context, the urine product refers to pure urine that is not mixed with faeces or water. Depending on diet, human urine collected during one year (ca. 500 L) contains 2–4 kg nitrogen. With the exception of some rare cases, urine is sterile when it leaves the body.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Use and/or disposal	Use and/or disposal refers to the methods by which sanitation products are ultimately returned to the environment, as either useful resources or reduced-risk materials. Furthermore, sanitation products can also be cycled back into a system (e.g. the use of treated greywater for flushing).	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia Federal.
User interface	User interface describes the type of toilet, pedestal, pan, or urinal that the user comes in contact with; it is the way that the user accesses the sanitation system. In many cases, the choice of user interface will depend on the availability of water. Note that greywater and storm water do not originate at the user interface, but may be treated along with the sanitation products that originate at the user interface.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Ventilated improved pit (VIP) latrine	Ventilated improved pit (VIP) latrine is a dry pit latrine ventilated by a pipe that extends above the latrine roof. The open end of the vent pipe is covered with gauze mesh or fly-proof netting and the inside of the superstructure is kept dark.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.
Waste water	**Wastewater** In this document refers to the waste conveyed in a sewer, as opposed to faecal sludge, which is not conveyed in a sewer.	NWASCO: Urban Onsite Sanitation and Faecal Sludge Management: Framework for Provision and Regulation in Zambia.