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EXPLORING PROMISING AFRICAN EXAMPLES OF NON-SEWER AND FECAL SLUDGE MANAGEMENT SYSTEMS FOR WIDER SHARING AND FUTURE REPLICATION (AfWA/FABRI Project)

SUB REGIONAL REPORT TEMPLATE

REPORT ON SANITATION SECTOR STATUS IN THE SOUTHERN AFRICA SUB-

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ACRONYMS

AfWA	African Water Association
AMCOW	African Minister Council on Water
FABRI	Further Advancing the Blue Revolution Initiative
STC	Scientific and Technical Council
FSM	Faecal Sludge Management
USAID	US Agency for International Development
WOP	Water Operators Partnership
WARMA	Water Resources Management
NWASCO	National Water Supply and Sanitation Council
CUs	Commercial Utilities
LAs	Local Authorities
DWRD	Department of Water Resources Development
WSS	Water Supply and Sanitation
WASCOP	Water and Sewerage Company
LEWA	Lesotho Electricity and Water Authority
WAB	Water Appointment Board
WSR	Water Sector Reform
WUC	Water Utility Corporation
DNA	Designated National Authorities
PRONASAR	National Rural Water Supply and Sanitation Program
MoF	Ministry of Finance
FIPAG	Water Investment Fund
CRA	Water Regulatory Council
AdeM	Maputo Water Utility
DWA	Department of Water Affairs

NDC	National Development Corporation
WSP	Water Service Providers
WSA	Water Services Authority

1. EXECUTIVE SUMMARY

The sanitation situation in the majority of the Southern African Sub-Region like many other African countries has not improved parallel to the improved access to quality water supply. Until now there are still no widely acceptable and comprehensive initiatives developed targeting the majority of the populations in these countries which are sustainable and affordable for the majority of the population. In any case for some countries the sanitation situation is even rapidly deteriorating. It is also important to mention that Government expenditure on sanitation, specifically on-site sanitation, has been dwindling except for insignificant contributions only in times of floods or drought. Available funds from governments for sanitation projects and programmes are limited and therefore most resident depend on un regulated sanitation facilities and options which do not provide the much required hygiene and decency let alone sustainability.

The report therefore seeks to characterize the sanitation situation, particularly the status of non-sewer sanitation and faecal sludge management, in five to eight countries from each of the four Sub-Saharan African sub-regions, highlighting both opportunities and constraints, identify and initially explore a number of non-sewer sanitation and FSM cases in Africa that are potential models for replication and shortlist a number of municipalities, utilities and operators from the sub-regions and categorize them as mentors (best performing) and mentees (underperforming) depending on their sanitation status

A survey shall be conducted that will present an understanding in a broader perspective of the institutional, financial, operational, human resource capacity and best practices for replication FSM and non-sewer sanitation in the sub region.

Furthermore, by identifying and exploring interesting and creative examples of non-sewer sanitation and FSM cases across Africa, this study will lay the groundwork for future potential peer-to-peer learning partnership programs that will contribute to improve AfWA and its partners' knowledge on the sanitation sector in Africa in general, and on the status of, including the available under AfWA Water Operators' Partnerships Africa Program that will help increase and expand the impact of AfWA on water and sanitation in Africa

2. CONTEXT

The lack of access to improved drinking water and sanitation is a serious roadblock to economic and social development. Improving the ability of service providers to manage and deliver water and sanitation services effectively is critical to reducing the access gap.
Since 2005, AfWA created a committee dedicated to sanitation and environment in Africa under its Scientific and Technical Council (STC) and in 2008, a task force on fecal sludge management (FSM) was formed within this Committee. The mandate of these groups is to advise African operators on addressing capacity building needs on sanitation and environmental issues in order to improve the sector services.

The Further Advancing the Blue Revolution Initiative (FABRI), funded by the U.S. Agency for International Development (USAID), had been partnering with the African Water Association (AfWA) and the African Ministers Council on Water (AMCOW) to improve the water and sanitation sector services in countries across the continent.
AfWA and FABRI's joint approach has been to "scale-up" by working with large numbers of entities simultaneously for maximum impact and increased representativeness. AfWA is currently implementing a major program with FABRI to reduce non-revenue water in 20 utilities across the continent. With regard to sanitation, it is to work at both the national and local levels to expand the development, monitoring, and use of national plans and strategies while supporting private sector sanitation service provider engagement in implementation.

Thus, through the sanitation component of the FABRI program, a three month survey has been carried out from October to December 2015 to make an assessment of stakeholder status in the sanitation sector in four sub-regions of Sub-Saharan Africa: Eastern, Western, Central, and Southern. Specifically, the objectives were to:

- briefly characterize the sanitation situation, particularly the status of non-sewer sanitation and fecal sludge management, in five to eight countries from each of the four Sub-Saharan African sub-regions, highlighting both opportunities and constraints
- identify and initially explore a number of non-sewer sanitation and FSM cases in Africa that are potential models for replication
- shortlist a number of municipalities, utilities and operators from the sub-regions and categorize them as mentors (best performing) and mentees (underperforming) depending on their sanitation status

The present report aims at sharing the results of the study undertaken in the specific sub-region of Southern African sub-region and is one the four sub-regional reports that will be compiled into one single report to present the overall situation of African stakeholders in the sanitation sector. This will contribute to improve AfWA and its partners' knowledge on the sanitation sector in Africa in general, and on the status of FSM and non-sewer sanitation in particular, including the available institutional, financial, operational, human resource capacity and best practices for replication.

Furthermore, by identifying and exploring interesting and creative examples of non-sewer sanitation and FSM cases across Africa, this study will lay the groundwork for future potential peer-to-peer learning partnership programs under AfWA Water Operators' Partnerships Africa Program that will help increase and expand the impact of AfWA on water and sanitation in Africa

3. OVERVIEW OF THE WATER AND SANITATION SECTOR IN THE SOUTHERN AFRICAN SUB-REGION

There is a sense of need to streamline the water sector institutional arrangement in the majority of the countries in order to meet the needs of the population with quality access to water supply and in particular sanitation which seems to be a long way behind.

It is understandably therefore that the Southern African Sub-Region countries has lagged behind in the development of comprehensive sanitation solutions for the majority of the population in the region with an average access to sanitation of about 54%. This also indicates a variant access rate for the different countries that gives some good positive picture for some countries and a gloomy one for the others. Despite this wide ranging sanitation situation, there are fundamentals that are common for the most of the countries such as the inadequate funding for sanitation. This has resulted in the majority of the poor population without access to quality sanitation. The situation is compounded by the absence of established functional institutions or organization to champion the sanitation policy for the countries. Much of the focus for the countries has being on water supply where adequate strides have been achieved in the quest to provide access to quality water supply. Again the majority of the countries have had some form of FSM programme implemented through some programme, but the absence of established government institutions for the efficient management of these facilities renders that not replicable.

3.1 Overall water and sanitation status in the sub-region

The region appears to have focused in the last 10 years of providing access to water supply deducing from the access rate for water supply in most of the countries comparable to the access to sanitation. The average access to water supply is about 85-90% while that of sanitation is about 54%. When the population has access to water supply the norm is that the attention shall be demand for quality sanitation. Therefore, this is a great opportunity to initiate programs for sanitation as the demand is readily available and any appropriate solutions could be expediently supported by the population. The other opportunity is the business nature of sanitation through all its chain from construction, conveyance, treatment and disposal. The economic value for sanitation cannot be overemphasized as observed even from the little activities that are present in the countries in the region.

While these opportunities manifest clearly the challenges are immense from cultural and social hurdles to technical and management issues. To break the cultural norms, intense consultation and sensitization are needed for the success of the programme. Adequate capacities are needed for the effective development of technical systems as well as organizational structures for management. This shall call for training and consistent upgrading of skills.

3.2 Non-sewer and FSM status in the sub-region

The FSM and non-sewer solutions have been part of the sanitation solution in the region particularly in the low income areas were the majority of the poor population live. These solutions have been used in areas were provision of sewered solutions are ultimately expensive and economically unviable. The private sector in some instance has participated in the management and operations of the schemes particularly for the conveyance of the sludge. Regulation by established government bodies have not participated in the process except for a few countries like South Africa. Countries with adequate resources have also assisted in the provision of the non sewered sanitation solution for the low income areas as interim solution to their population. Institutional and human capacity for the sustainable management of the FSM and non sewered solutions is still a challenge because the non-involvement of government in the implementation of the programs for non sewered sanitation solutions. Most programs are led by the non-government organization whose mandate is limited depending on the source of funding.

4. ASSESSMENT OF SANITATION SECTOR STATUS IN SOUTHERN AFRICAN SUB-REGION

The African Water Association (AfWA), through its Water Operator Partnership (WOP) Africa program, is engaged in promoting peer-to-peer partnerships to improve the performance of operators responsible for providing water and sanitation services to more than 60% of African urban households. The initiative's basic strategy is to seek accelerated improvements through more intense and systematic knowledge sharing, including peer support partnerships between operators.

A key priority action of the program is to use utility performance benchmarking to evaluate performance, rank them, and match the best performing utilities with ones that are underperforming. This effort can only be done through an assessment exercise.

4.1 Objectives

The specific objectives of this study are to:

- assess the sanitation stakeholder status in Zambia, Namibia, Botswana, South Africa, Lesotho, Mozambique and particularly the status of non-sewer sanitation and fecal sludge management
- identify and initially explore the most interesting cases of non-sewer sanitation and FSM in Southern African Sub-Region that are potential models for replication
- identify potential mentees and mentors in Southern African Sub-Region for immediate and future peer-to-peer learning partnership program implementation

4.2 Methodology

Methodology description

Data for the survey were collected through questionnaires. The respondents were selected through assessment of institutions that have being involved in the provision of sanitation services in some form to the residents of particular towns.

In addition to data originally collected through questionnaires the respondents were interviewed to obtain further information and clarification of the submitted data in the questionnaires.

Other Information was drawn entirely from publicly available, open-source materials. These include electronic news archives, existing data sets, secondary source materials such as books and journals, and legal documents.

List of key informants

The list of the key informants in the respective countries is listed in the table below;

Country	Name	Organisation	Town	Position	Other sources data
Zambia	Douglas Singanga	MLGH	Lusaka	Principal Engineer	
	George Ndongwe	Lusaka WSC	Lusaka	Managing Director	
	Charles Shindaile	Southern WSC	Choma	Managing Director	
Botswana	Kene Dick	Ministry of Minerals Water and Energy Resources	Gaborane	Acting Managing Director	
	Pelotshwen Phofnetsile	Ministry of Minerals Water and Energy Resources	Gaborane	Deputy Director (DWA)	
Lesotho	Fella Seboko	Lesotho Electricity and water Authority	Maseru	Technical Manager-Water	
Mozambique	Messias Macie	Ministry of Public Work, housing and Water Resources	Maputo	Director of Water	
	Magalhaes Mignel	CRA	Maputo	Secretary	
South Africa	Justine Lupindu	Nzo District Municipality	Nzo	Technical Consultant – Support Agent	
Namibia	Ferdinand Brinkman	Municipal of Windhoek	Windhoek	Chief Engineer	
	Enos Chulu	Municipal of Windhoek	Windhoek	Section Engineer – water and wastewater reticulation	

Table 1

Data collection and analysis

Data was collected using questionnaires that were distributed to the respondents and were allowed to fill in the answers.

List of Criteria for categorising operators

The criteria approved for mentors were as follows;

- Country/Town or areas with more than 200, 000 population

- Country/Town with evidence of a functional FSM system and non-sewered sanitation facilities of some form in existence
- Country/Town or municipality with established regulatory framework for sanitation or willing to establish one for FSM or non-sewered sanitation

The criteria approved for mentees were as follows;

- Country/Town or areas with more than 100, 000 population
- Country/Town with evidence of a functional FSM system and non-sewered sanitation facilities of some form in existence
- Country/Town or municipality with established regulatory framework for sanitation or willing to establish one for FSM or non-sewered sanitation

The criteria approved for next round of participants were as follows;

- Country/Town or areas with more than 100, 000 population
- Country/Town with evidence of a functional FSM system and non-sewered sanitation facilities of some form in existence
- Country/Town or municipality with established regulatory framework for sanitation or willing to establish one for FSM or non-sewered sanitation

4.3 Results

4.3.1 The sanitation sector in specific countries

ZAMBIA

A. Overall Sanitation Sector Status

a. Institutional and Regulatory Arrangement of the Sanitation sector

Zambia has made important advances in regulatory and institutional reforms in the water and sanitation sector. It continues to implement national policies, expand financing and cost recovery strategies and increase the institutional capacity of water supply and sanitation (WSS) service providers. The water sector in Zambia is primarily under the responsibility of two ministries: The Ministry of Energy and Water Development (through the Department of Water Resource Development (DWRD), Water Resources Regulatory Agency (WARMA) and National Water Supply

and Sanitation Council (NWASCO) is responsible for the overall water resources management (planning, regulation and development).

The Ministry of Local Government and Housing through the Local Authorities (LAs) and commercial utilities (CUs) is responsible for water supply and sanitation delivery services. These ministries play a key role in ensuring the sustainable development and management of water supply and sanitation delivery for urban, peri-urban and rural areas.

To separate regulatory and executive (policy) functions within the water supply and sanitation sector, NWASCO was established as an independent regulator to implement policy. The powers of NWASCO are vested in the Water Supply and Sanitation Act No. 28 of 1997.

b. Organizational arrangement

Commercial Utilities are the main providers of water and sanitation services in urban areas. Currently there are about 5.97million people living in the CUs' service areas of which 1% of the population is serviced by seven Private Schemes. Private Schemes are companies that offer water supply and sanitation services mainly to their employees as a fringe benefit.

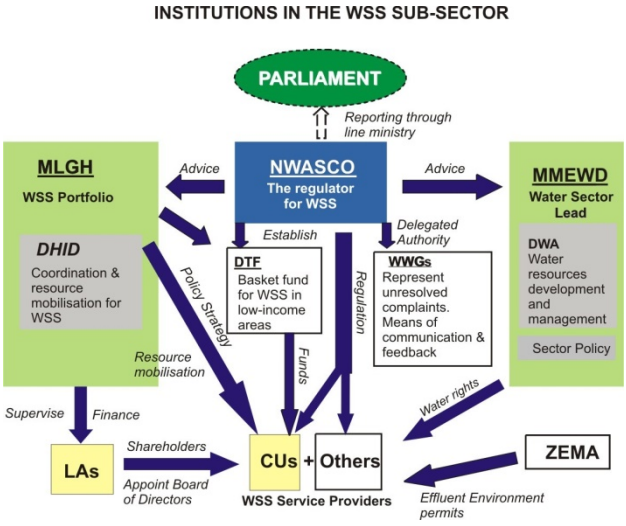

Figure 1

c. Infrastructures (asset)

All assets for the water supply and sanitation are owned by the water utilities through the Act of parliament that transferred the assets to the commercial utilities

d. Non-Sewer and Fecal sludge management

Non-Sewer and Fecal sludge management is practiced in Lusaka in specific areas were the programme has been implemented with the help of cooperating partners. The current regulatory system does not include non-sewered system thereby living the function to the local authorities and the CUs. The FSM systems were established to serve communities with non-sewered facilities that had challenges in finding areas and methods of disposal of faecal sludge from their facilities.

Photo 1

e. Sanitation indicators

Available data indicate that only 68% of Zambians living in the urban rural areas have access to sanitation. The urban population comparatively has less access to sanitation in comparison to the population living in the rural areas due to factors such as costs and lack of land.

f. Champion municipality/ utility/ operator in sanitation

The provision of service is under the jurisdiction of the commercial Water Utilities

g. Other relevant information

On-site sanitation is the most common form of excreta disposal and considering the constraints of funding and planning it will remain the most appropriate level of service for the urban poor in the medium term. Most peri-urban residents depend on simple pit latrines. Only a few ventilated pit latrines were built at schools and public

places. Usually pits are not lined nor covered properly. In some few areas with a high water table or with rocky ground, pits are raised above ground often using termite mounds. As low-cost residential areas are planned residential areas, most of the houses are connected to either the sewer line or to individual or communal septic tanks. In some areas the houses are equipped with flushing toilets but in most low-cost areas, residents have access to ablution blocks with 2-4 compartments serving 2-4 households. Because of erratic water supply, people often flush their toilets using a bucket. However, due to lack of maintenance over several decades, much of this infrastructure is no longer operational and pit latrines are now a common feature in these residential areas

B. Sanitation Sector Stakeholders' Status

a. SWOT analysis

Strength	Weaknesses
• Existing systems for FSM are already existing • Capacity in human resource management and technical skills are available for management of the systems	• Lack of regulation tools by the NWASCO • Lack of funding • Lack of national programmes for non-sewered sanitation systems and FSM
Opportunities	Threats
• Demand for sanitation is high • Business opportunities	• Tradition and cultural acceptance of the system • Meeting environmental regulatory requirements

Table 2

b. Stakeholder assessment: institutional, financial, operational and human resource capacity

The country as the required institutional, human capacity and legal framework to manage FSM programs. The lack of adequate financing may affect the management of the programmes because FSM systems require consistent monitoring and evaluation of the sanitation chain.

c. On-going sanitation project/funding in the municipality/ utility/ operator

There are 3 FSM currently operated by Lusaka Water and Sewerage Company in Lusaka. The programme manages the entire sanitation chain from maintenance, conveyance, treatment and disposal.

LESOTHO

A. Overall Sanitation Sector Status

a. Institutional and Regulatory Arrangement of the Sanitation sector

The affairs of water supply are under the jurisdiction of the Ministry of Water which has given the function of day to provision of the sewerage function to WASCOP.

The water supply and sanitation function in Lesotho is managed by WASCOP which is responsible for the collection, transportation and treatment sewage 10 towns and 5 designated urban centres. The department of Rural Water Supply is responsible for sanitation services in the rural areas which are exclusively on-site VIPs and pit latrines. The local government are yet to take over the community councils.

b. Organizational arrangement

WASCOP through its mandate does engage private companies and contractors to provide services for sewerage management such as VIP or septic tank emptying

c. Infrastructures (asset)

The ownership of assets is not clarified

d. Non-Sewer and Fecal sludge management

FSM is practiced in Maseru with a well-planned and designed management contracts that are potentially improving performance of faecal sludge management for the benefit of the users of the services.

e. Sanitation indicators

Available data indicate that only 58% of population in Lesotho in the urban rural areas has access to sanitation.

f. Champion municipality/ utility/ operator in sanitation

The provision of sanitation services is provided by WASCOP.

g. Other relevant information

On-site sanitation is rural areas are left to fill up and abandoned to be dug in the next location.

B. Sanitation sector stakeholders' status

a. SWOT analysis

Strength	Weaknesses
• Existing systems for FSM are already existing • Capacity in human resource management and technical skills are available for management of the systems • The system is already widely practiced	• Lack of funding • Lack of national programmes for non-sewered sanitation systems and FSM
Opportunities	Threats
• Demand for sanitation is high • Business opportunities	• Meeting environmental regulatory requirements

Table 3

b. Stakeholder assessment: institutional, financial, operational and human resource capacity

The country as the required institutional, human capacity and legal framework to manage FSM programs. The lack of adequate financing may affect the management of the programmes because FSM systems require consistent monitoring and evaluation of the sanitation chain.

c. On-going sanitation project/funding in the municipality/ utility/ operator

There are 3 FSM currently operated by Lusaka Water and Sewerage Company in Lusaka. The programme manages the entire sanitation chain from maintenance, conveyance, treatment and disposal.

BOTSWANA

A. Overall Sanitation Sector Status

a. Institutional and Regulatory Arrangement of the Sanitation sector

Botswana has made important advances in regulatory and institutional reforms in the water and sanitation sector. The (Water Sector Reforms) WSR process was initiated in 2008 and aims to establish more efficient and sustainable water management; separate water provision and resource planning; reduce inefficiencies; and fill management gaps in the water sector. To achieve this, several institutional changes were proposed:

- The (Water Utility Corporation) WUC becomes solely responsible for water supply, reticulation and wastewater treatment in all settlements. Previously both the DWA and district councils provided water, while the Department of Waste Management and Pollution Control handled wastewater.
- The DWA's mandate changes to water resource planning, development and management. This includes the planning and development of large water infrastructures such as dams and transfer schemes.
- The Water Resources Council (to replace the Water Apportionment Board) and the Water Regulator must be established. Self-providers such as mines and farmers are responsible for their own water supply and management, subject to attaining user rights from the Land Board and the Water Apportionment Board (WAB).

b. Organizational arrangement

WUC is the solely responsible for the provision of water and sanitation services in in the country. Currently there are about 2million people to be serviced by the WUC.

c. Infrastructures (asset)

All assets for the water supply and sanitation are owned by the Water Utilities Corporation.

d. Non-Sewer and Fecal sludge management

The majority of the population is on the sewerage network.

e. Sanitation indicators

Data not available

f. Champion municipality/ utility/ operator in sanitation

The provision of service is under the jurisdiction of the Water Utility Corporation

g. Other relevant information

Botswana has undergone a substantial increase in population and standard of living. Recognizing that many of its existing policies and organizational structures for the water and sanitation sector may no longer meet the needs of its current citizens, the government has embarked on the process of reviewing of its water and sanitation master plan.

Access to improved sanitation is a key the country's future development. It is there imperative that the government develops a standardized pro-poor sanitation strategy, which could assist all for households with the installation of appropriate on-site sanitation facilities. The overall objective would be to ensure that every citizen on Botswana has access to improved sanitation by the year 2016.

B. Sanitation sector stakeholders' status

a. SWOT analysis

Strength	Weaknesses
• Capacity in human resource management and technical skills are available for management of the systems	• Lack of funding • Lack of national programmes for non-sewered sanitation systems and FSM
Opportunities	**Threats**
• Demand for sanitation is high • Business opportunities • The country has developed a strategy to provide every citizen with access to sanitation	• Tradition and cultural acceptance of the system • Meeting environmental regulatory requirements

Table 4

b. Stakeholder assessment: institutional, financial, operational and human resource capacity

The country as the required institutional, human capacity and legal framework to manage FSM programs. The lack of adequate financing may affect the management of the programmes because FSM systems require consistent monitoring and evaluation of the sanitation chain.

c. On-going sanitation project/funding in the municipality/ utility/ operator

There are no FSM facilities operating in the country.

MOZAMBIQUE

A. Overall Sanitation Sector Status

a. Institutional and Regulatory Arrangement of the Sanitation sector

All the Local governments, 10 provinces, 43 municipalities, and 128 districts have some level of responsibility and authority for water supply and sanitation activities. District governments, through the 2003 Law of Local State Organs, own all public water supplies within their jurisdictions and are responsible for needs identification, annual planning, and promoting additional access. Most districts also manage their district capital's water system. In reality, rural water points are managed by community groups with little or no

state intervention in the post construction period, and public funding for works is extremely limited, with all district monies for sector activities coming either directly from the Ministry of Finance (MoF) or the DNA. The latter's current policy is that the districts assure the maintenance of existing infrastructure, while the provincial governments assume responsibility for access expansion, though this policy is not strictly enforced.

Provincial responsibilities in the sector have been decreasing in recent years, and it remains unclear how their roles will change under the proposal to create new Provincial Water and Sanitation Services. The recently-launched national program, PRONASAR, is expected to increase the level of involvement of both the districts and provinces in rural water supply and sanitation. Municipal governments have exercised a very limited role in both water supply and sanitation despite their legal responsibilities. Their revenue-raising limitations have made them dependent for funding upon central government programs and institutions where local governments currently have minimal influence.

b. Organizational arrangement

The water supply and sanitation function is operated through a delegated management in Maputo a 15-year lease contract with a private company for water supply and sanitation in the capital city, Maputo as well as Management Contracts for water supply in four provincial capitals – Beira, Quelimane, Nampula and Pemba – in the central and northern parts of the country.

c. Infrastructures (asset)

All assets for the water supply and sanitation are owned government

d. Non-Sewer and Fecal sludge management

On-site sanitation is the most common form of excreta disposal and considering the constraints of funding and planning it will remain the most appropriate level of service for the urban poor in the medium term. Most peri-urban residents depend on simple pit latrines. Only a few ventilated pit latrines were built at schools and public

places. Usually pits are not lined nor covered properly. In some few areas with a high water table or with rocky ground, pits are raised above ground often using termite mounds. As low-cost residential areas are planned residential areas, most of the houses are connected to either the sewer line or to individual or communal septic tanks. In some areas the houses are equipped with flushing toilets but in most low-cost areas, residents have access to ablution blocks with 2-4 compartments serving 2-4 households. Because of erratic water supply, people often flush their toilets using a bucket. However, due to lack of maintenance over several decades, much of this infrastructure is no longer operational and pit latrines are now a common feature in these residential areas

e. Sanitation indicators

Available data indicate that only 38% of Mozambique living in the urban rural areas has access to sanitation.

f. Champion municipality/ utility/ operator in sanitation

There are only a few number of Mozambican households are connected to a sewer system. These systems often date back to colonial times and are poorly maintained or even blocked. Most Mozambicans use a latrine or septic tanks. Poorly constructed facilities allow black water can leak into surface or ground water unattended. In areas with a high water table and a permeable soil type this is certainly a problem, particularly because many people still draw their drinking water from wells. Latrines sometimes are emptied due to lack special tank trucks or residents are not able to afford, but in most municipalities good systems for the collection and treatment of faecal sludge are altogether absent.

Project to allow the composting and recycling human waste are on-going. Municipalities help residents manage the household waste in, particularly because this strongly reinforces the message of a visibly clean environment. Municipalities have developed systems for the collection and disposal of household waste.

g. Other relevant information

Human resources are limited at all local government levels, which has had a negative impact on urban and rural sanitation, as well as rural water supplies. The largest cities have professionally managed water supplies through a delegated private sector manager, though this model has experienced difficulties in maintaining private interest.

The private sector has received criticism for its track record in improving service delivery, though massive recent public investments have upgraded infrastructure significantly. Hundreds of small independent water providers exist, almost entirely in the peri-urban areas of Maputo, and their role has been growing rather than shrinking over the last decade. The issue of engaging the independent providers is currently being closely examined for ways to bring them under quality controls and regulatory oversight. Urban and peri-urban sanitation have been excluded from the delegated management model and only recently are municipally-based management arrangements being discussed. In the absence of a well-financed and staffed institutional home for urban sanitation, relatively little has been accomplished in recent years in the subsector.

B. Sanitation sector stakeholders' status

a. SWOT analysis

Strength	Weaknesses
• Existing systems for FSM are already existing • Capacity in human resource management and technical skills are available for management of the systems	• Lack of human capacity at local level • Lack of funding • Lack of national programmes for non-sewered sanitation systems and FSM
Opportunities	**Threats**
• Demand for sanitation is high • Business opportunities • Private sector is already engaged	• Tradition and cultural acceptance of the system • Meeting environmental regulatory requirements

Table 5

b. Stakeholder assessment: institutional, financial, operational and human resource capacity

The country as the required institutional, human capacity and legal framework to manage FSM programs. The lack of adequate financing may affect the management of the programmes because FSM systems require consistent monitoring and evaluation of the sanitation chain.

c. On-going sanitation project/funding in the municipality/ utility/ operator

The water supply in Maputo is provided through a regulated framework involving the asset owner (FIPAG), private operator (AdeM) and the regulator (CRA). Maputo has an extensive water network covering much of the city but lacks tertiary networks to the low income bairros. Consequently, until recently only about 20% of the low income households had an individual connection: about 50% purchased water from a neighbour, and about 30% purchased water from a kiosk owned privately or run/operated by the utility AdeM.

NAMIBIA

A. Overall Sanitation Sector Status

a. Institutional and Regulatory Arrangement of the Sanitation sector

A number of institutions are responsible for different aspects of water supply, management, and use, including government departments, parastatal institutions (such as municipalities and community-based Water Point Committees), private organizations, and individuals.

Three key institutions involved are:

- NamWater, a parastatal institution that is responsible for bulk water supply;
- The Department of Water Affairs (DWA) within the Ministry of Agriculture, Water and Rural Development, which is responsible for all water resource development projects, including irrigation planning and development;

- The National Development Corporation (NDC) that executes new government developments and also manages schemes.

b. Organizational arrangement

Bulk water is supplied by NamWater, which then sells it to the respective municipalities who in turn deliver it to their respective reticulation networks systems.

In rural areas, the Directorate of Rural Water Supply in the Ministry of Agriculture, Water and Forestry is in charge of supplying drinking water to the residents of respective towns or districts.

c. Infrastructures (asset)

All assets for the water supply and sanitation are owned government through Namwater for bulk water and municipalities own assets within their areas.

d. Non-Sewer and Fecal sludge management

Fecal sludge management is operated Windhoek for a few systems producing sludge.

e. Sanitation indicators

Available data indicate that only 34% of the population has access to sanitation.

f. Champion municipality/ utility/ operator in sanitation

Bulk water is supplied by NamWater, which then sells it to the respective municipalities who in turn deliver it to their respective reticulation networks systems.

In rural areas, the Directorate of Rural Water Supply in the Ministry of Agriculture, Water and Forestry is in charge of supplying drinking water to the residents of respective towns or districts.

g. Other relevant information

The majority of the population in Namibia are served primarily with sanitation of a water-borne nature. Sewage

connections are estimated to be available to 58% of the urban population and 13% of the rural population. Generally, on-site sanitation, both wet and dry systems, is poorly developed and serves a small minority. Although this sub-sector has received a portion of the government budget, it was still inadequate to meet people's needs.

B. Sanitation sector stakeholders' status

a. SWOT analysis

Strength	Weaknesses
• Existing systems for FSM are already existing • Capacity in human resource management and technical skills are available for management of the systems	• Lack of regulation tools by the regulator • Lack of funding • Lack of national programmes for non-sewered sanitation systems and FSM
Opportunities	Threats
• Demand for sanitation is high • Business opportunities	• Tradition and cultural acceptance of the system • Meeting environmental regulatory requirements

Table 6

b. Stakeholder assessment: institutional, financial, operational and human resource capacity

The country as the required institutional, human capacity and legal framework to manage FSM programs. The lack of adequate financing may affect the management of the programmes because FSM systems require consistent monitoring and evaluation of the sanitation chain.

c. On-going sanitation project/funding in the municipality/ utility/ operator

There are a number of FSM facilities currently existing in the country.

SOUTH AFRICA

A. Overall sanitation sector status

a. Institutional and Regulatory Arrangement of the Sanitation sector

The Department of Water Affairs (DWA) leads and regulates the water sector in South Africa, develops policy and strategy, and provides support to the sector. DWA is governed by two Acts, the National Water Act (1998) and the Water Services Act (1997), and together with national strategic objectives, governance and regulatory frameworks, provides an enabling environment for effective water use and management.

DWA operates at national, provincial and local levels across all elements of the water cycle (i.e. from water resource management, water abstraction, water processing and distribution of potable water, wastewater collection, to treatment and discharge). DWA does not execute all of these functions; some are either constitutionally assigned to appropriate sector partners. DWA owns most of the large dams and related water resource infrastructure and undertakes the necessary planning and implementation of future water resource development projects.

On the other hand regional bulk water distribution is managed by Water Boards, municipalities and DWA. Waterboards and some of the larger metropolitan municipalities (Metros), also purify water to potable standards. Provisioning of Water Services (water supply and sanitation) is the constitutional responsibility of local government (Metro, Local or District Municipalities) who act as the Water Services Authorities (WSAs) and often also Water Service Providers (WSPs) for all communities in their areas of jurisdiction. Some WSAs, where wastewater management is a regional challenge, have contracted out this function to bulk water services providers, however, the responsibility still rests with them to ensure an effective service.

b. Organizational arrangement

Bulk water distribution is managed by Water Boards, municipalities and DWA. Waterboards and some of the larger metropolitan municipalities (Metros), also purify water to potable standards. Provisioning of Water Services (water supply and sanitation) is the constitutional responsibility of local government (Metro, Local or District Municipalities) who act as the Water Services Authorities (WSAs) and often also Water Service Providers (WSPs) for all communities in their areas of jurisdiction. Some WSAs, where wastewater management is a regional challenge, have contracted out this function to bulk water services providers, however, the responsibility still rests with them to ensure an effective service.

c. Infrastructures (asset)

All assets for the water supply and sanitation are owned government through the water boards for bulk water and municipalities own assets within their areas.

d. Non-Sewer and Fecal sludge management

Fecal sludge management is operated Windhoek for a few systems producing sludge.

e. Sanitation indicators

At least 26% (3.8 million) of households within formal areas have sanitation services which do not meet the required standards due to the deterioration of infrastructure caused by lack of technical capacity to ensure effective operation, timeous maintenance, refurbishment and/or upgrading, pit emptying services and/or insufficient water resources.

11% of the national total population does not have access to sanitation

f. Champion municipality/ utility/ operator in sanitation

Bulk water distribution is managed by Water Boards, municipalities and DWA. Waterboards and some of the larger metropolitan municipalities (Metros), also purify water to potable standards. Provisioning of Water Services (water

supply and sanitation) is the constitutional responsibility of local government (Metro, Local or District Municipalities) who act as the Water Services Authorities (WSAs) and often also Water Service Providers (WSPs) for all communities in their areas of jurisdiction. Some WSAs, where wastewater management is a regional challenge, have contracted out this function to bulk water services providers, however, the responsibility still rests with them to ensure an effective.

g. Other relevant information

South Africa's own country data show good progress in access to a piped water supply within 200 meters, starting from a low base. The JMP data also shows progress, but from a much higher base and consequently at a slower pace. The differences arise from a difference in service level definitions. For practical reasons, the universal coverage target for 2014 is unlikely to be met, notwithstanding the trend shown. The pace of delivery in rural areas has also slowed. There are concerns related to the functionality and sustainability of rural water supply schemes.

B. Sanitation sector stakeholders' status

d. SWOT analysis

Strength	Weaknesses
• Existing systems for FSM are already existing • Capacity in human resource management and technical skills are available for management of the systems • There are strong regulatory tools	• Lack of funding • Lack of national programmes for non-sewered sanitation systems and FSM
Opportunities	Threats
• Demand for sanitation is high • Business opportunities	• Tradition and cultural acceptance of the system • Meeting environmental regulatory requirements

Table 7

e. Stakeholder assessment: institutional, financial, operational and human resource capacity

The country as the required institutional, human capacity and legal framework to manage FSM programs. The lack of adequate financing may affect the management of the programmes because FSM systems require consistent monitoring and evaluation of the sanitation chain.

f. On-going sanitation project/funding in the municipality/ utility/ operator

There are a number of FSM facilities currently existing in the country

4.3.2 Models for replication

a. Overview

There are 2 existing models that could be replicated. These are the Kanyama and Chazhanga faecal Sludge management models that have been in operation for the last 5 years. The systems have been operating with the involvement of the private sector participation and the commercial water utilities.

b. Best Practices

The private sector operators are trained to undertake maintenance of the household sanitation facilities, conveyance of the sludge from individual households to the treatment plant while the CUs are responsible for the more complex process of sludge treatment. The disposal of the sludge is function of the both the private sector and the CUs.

4.3.3 List of potential good mentors and mentees in the sub-region

- Mentees are countries, municipalities, utilities and operators serving at least 200.000 inhabitants and that are ready to make a strong commitment to participate in the WOP Africa program with a high likelihood of success.
- Mentors are countries, municipalities, utilities and operators that can demonstrate advanced improvements and best practices in sanitation and who can act as mentors in the WOP Africa program.

- Next round mentee are countries that can start preparing to get involve as mentee in a next round of support from AfWA through the WOP approach

Please complete the table below.

Potential participants for Phase 2

No	Potential mentees		Potential mentors	
	Municipalities/Utilities/ Operators	Country/City	Municipalities/Utilities/ Operators	Country/City
1	Namwater	Namibia	WASCOP	Lesotho
2	WUC	Botswana	Lusaka WSC	Zambia
3			FIPAG	Mozambique
4				
5				

Table 8

Potential participants for next phase

No	Potential mentees		Potential mentors	
	Municipalities/Utilities/ Operators	Country/City	Municipalities/Utilities/ Operators	Country/City
1	Nil	Nil	Nil	Nil
2				
3				
4				
5				

Table 9

5. DIFFICULTIES ENCOUNTERED

The challenges encountered included the inadequacy of data in non-sewered and FSM systems. The majority of the existing programmes are funded by donor support and the absence of

regulatory framework and tools for non-sewered sanitation and FSM compounded the lack of available data.

6. CONCLUSIONS/RECOMMENDATIONS

The way forward is to develop tools and standards for regulating the non-sewered sanitation services together with the FSM. The regulation is important because the majority of the urban population still uses on-site sanitation facilities. This will allow the development of better and acceptable specifications and technologies and thereby lead to the acceptance of the system by the people.

LIST OF ANNEXES