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SANITATION SERVICES



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The National Development Plan's target of ensuring that all South Africans have full, affordable, and reliable access to sufficient water and sanitation by 2030, aligns well with the Sustainable Development Goal 6.2 (SDG 6.2) target which states “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”.

In 2015, South Africa adopted a revolutionary approach under the theme – “It is not all about flushing”, recognising that South Africa is a water-scarce country, with a projected 17% deficit in the availability of water by 2030 if the same rate of water consumption is maintained. The projected water deficit will have a significant impact on the historic way of providing waterborne sanitation and requires the sector to reconsider sanitation provision approaches, with more investment in non-sewered, low water and waterless sanitation solutions as a means to increase the rate of sanitation service delivery within the 7 years left until 2030.

The DWS has recognised that due to **a)** the impact of climate change, **b)** water resources constraints, and **c)** energy supply challenges; the historic approach of providing waterborne sanitation is no longer sustainable and realistic to achieve universal access to safely managed sanitation. The envisaged 17% deficit in availability of water and projected demand by 2030, requires the water sector leader to embrace the use of a range of appropriate sanitation solutions and innovative technologies which require little, or no water or recycled water to lower water requirements.

SDG 6.2 has significantly changed the approach to how sanitation services are managed from access to a household sanitation facility as previously prioritised under the Millennium Development Goals, to ensuring “safely managed sanitation”. This calls for a paradigm shift as it is no longer about simply constructing a toilet, but a holistic approach to sanitation management across the entire sanitation service chain. The sanitation service chain refers to containment, emptying, transportation, treatment, and disposal or reuse. Hence, there is a need to embrace a combination of on-site, off-grid; sewerred or non-sewerred sanitation systems including centralised or decentralised wastewater treatment solutions. In addition, South Africa must accept the reality that the country no longer has the luxury of flushing 9 to 12 litres of potable water while some parts of the country do not have access to drinking water.

Although the flush toilet system is everybody's aspiration, it comes at a big cost which at times is not viable as it does not justify economies of scale and population density. The adoption of alternative sanitation systems can be a driver for water security in the country.

In response to the National Sanitation Policy (2016), DWS developed the National Sanitation Framework (NSF). It is an implementation framework that will assist government in providing equitable and safe sanitation in all settlement types. It guides towards ensuring appropriate support to Water Services Authorities (WSAs) in cases of service delivery lapses, and non-compliance to regulator prescripts leading to a deterioration in the provision of sanitation services. The NSF provides for the revision of the national minimum norms and standards as it relates to sanitation services thus ensuring more equitable provision of sanitation underpinned by the strengthened monitoring and compliance to these standards. The NSF reinforces the importance of prohibiting the provision of bucket toilets by municipalities as a sanitation solution, ending open defecation and eradicating sanitation backlogs by rolling out a range of support measures to poor-performing municipalities, thus ensuring a turnaround of sanitation services. In doing so, the future choice of sanitation technology options for the provision of sanitation services must be based on technical considerations and include population density, groundwater pollution risks and economies of scale. In line with the National Water and Sanitation Master Plan (NWSMP) actions, all new settlements and developments should use water-efficient sanitation solutions.

11.1 Development of The National Sanitation Integrated Plan (NSIP)

The NSIP provides a 10-year roadmap for ensuring access to adequate sanitation services, eradicating open defecation, providing innovative solutions, and creating a pathway to generate new sanitation opportunities. The main goal of the NSIP is to assist the sanitation sector in providing adequate and innovative sanitation services and solutions to enable long-term sustainable management of sanitation services in South Africa. The NSIP will help prioritise sanitation provision aligned to commitments of the National Development Plan (NDP) 2030, NWSMP, and SDGs. The vision of the NSIP is a coordinated plan that considers South Africa's scarcity of resources, promotes the delivery of equitable, efficient and sustainable sanitation services to all and contributes to public health and a clean environment.

Figure 11.1 shows that a significant proportion of the households in South Africa are reliant on on-site sanitation. No municipality is 100% sewerred in South Africa. Only Gauteng and Western Cape have waterborne systems provided to over 90% of the households.

To strengthen governance, support and implementation of the NSIP, Provincial Sanitation Task Teams are set up to work as a vehicle to drive integrated planning, monitoring, reporting and implementation of sanitation programmes and projects in a coordinated manner.

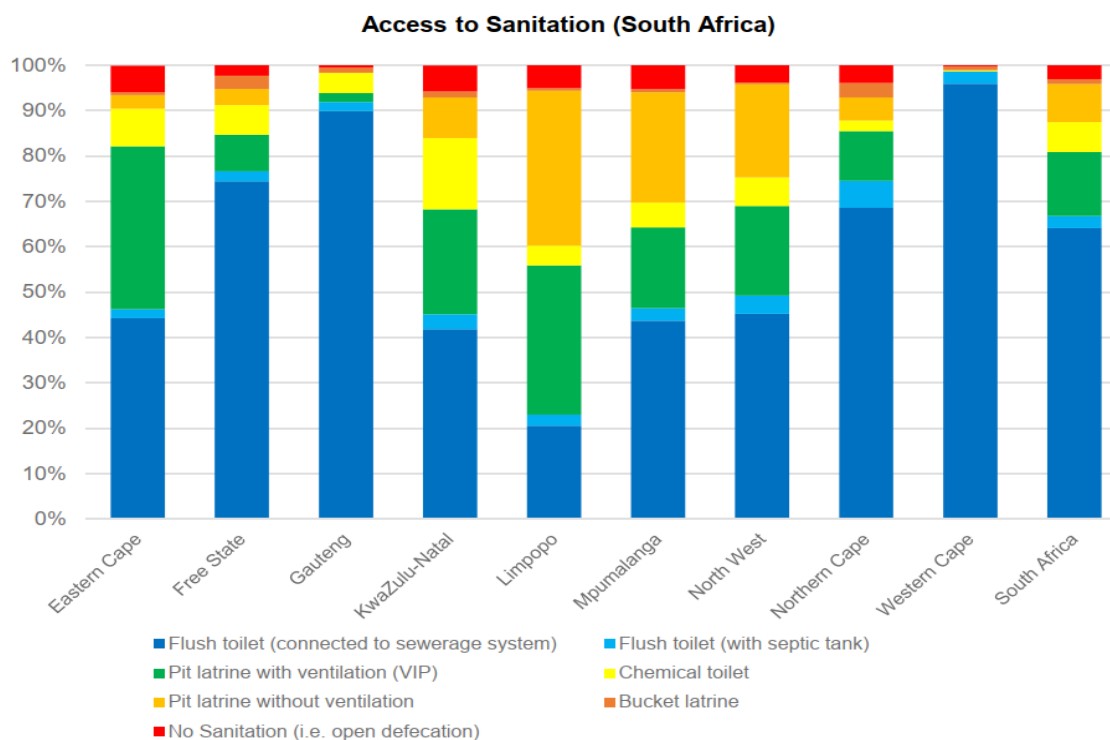


Figure 11.1: Access to sanitation in South Africa 2023.

11.2 The National Faecal Sludge Management Strategy

The National Faecal Sludge Management (FSM) Strategy encourages sustainable sanitation management along the sanitation service chain to prevent health hazards and protect the environment. It also enhances the operation and maintenance of on-site sanitation systems and prevents groundwater contamination. The strategy introduces a paradigm shift of safely managing sanitation along the sanitation services chain. Of importance is the need to recover, re-use and recycle resources from faecal sludge and wastewater sludge for beneficial use. The water and sanitation sector has embraced the reality that sanitation has an economic value, therefore there is a need to explore approaches to creating economic and job opportunities along the sanitation service chain. This can be realised by transitioning to a circular economy and converting faecal and wastewater sludge into various by-products such as biogas, composting, and biochar. The Department is working with various Research Institutions and Universities to fast-track resource recovery initiatives from sludge. The private sector is also encouraged to take advantage of the faecal sludge reuse and resource recovery business opportunities.

As guided by the provisions of SDG 6.2, the overall objective of the strategy is to mainstream faecal sludge management as part of sanitation services in South Africa, and:

- To establish clear regulatory and financing frameworks for FSM across the service chain.
- To establish an enabling framework for private sector opportunities in FSM service provision.
- To provide strategic guidance to WSAs concerning the management of on-site sanitation.
- To promote the beneficial use of faecal sludge as a resource, with the potential to create jobs and economic opportunities, through the sanitation circular economy.

Figure 11.2 shows the six pillars upon which the National FSM Strategy is built **(1)** Policy, Legislation, Regulation and Enforcement **(2)** Institutional Arrangements **(3)** Planning **(4)** Financing **(5)** Capacity, Technical Assistance and Technology **(6)** Promotion and User Engagement.

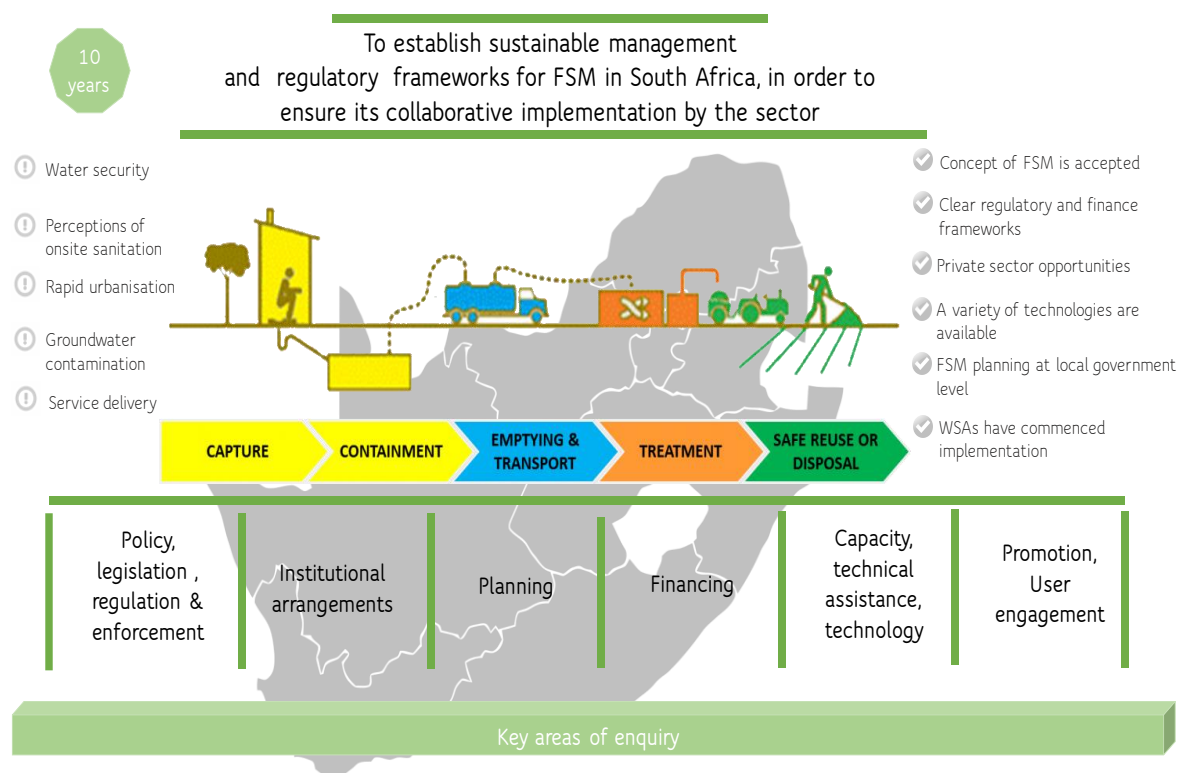


Figure 11.2: Conceptual framework for FSM in South Africa over the next ten years.

11.3 Developing Shit / Excreta Flow Diagram Capacity Building Programmes

A Shit Flow Diagram (SFD) presents a clear picture of how human excreta generated in a municipal area is contained as it moves from defecation to disposal or end-use. It functions as a tool to identify where sanitation improvements are needed. The purpose of the SFD is to estimate a proportion of the population using safely managed sanitation. It consists of a diagram, a narrative report, and a record of data sources. SFD has been identified as a useful tool to better understand the sanitation situation within South Africa. At present, SFDs have been developed for only a few WSAs in South Africa. It is therefore not currently possible to develop a provincial or national view of the status of sanitation using SFD outputs. DWS is aiming to roll out SFDs in a phased approach starting with 36 WSAs across the country. SFD development at selected WSAs will be initiated in 2024. Considering that it will take some time to develop SFDs for all 144 WSAs in South Africa, a SFD approximation was developed using available sanitation data. The output from this exercise has been dubbed the “1st Order SFD” and these outputs have been developed for South Africa and all 9 provinces.

The 1st order SFD is a useful tool to guide and influence appropriate strategy and planning (Figure 11.3). Benefits include:

- Lower cost or shorter time to obtain strategic overview of key challenges along the sanitation service chain,
- Common language for the sector,
- Contribution to national planning and reporting obligations, and
- Alignment to international reporting obligations.

The 1st order SFD highlights significant gaps in the sanitation value chain. These deficiencies, all potentially have a negative impact on communities (water supply) and the environment (water sources).

As improved data and information become available through SFD development or other related sanitation initiatives, the 1st Order SFD can continue to be reviewed and refined. SFD has been identified by DWS as a useful tool to better understand the sanitation situation within South Africa. DWS is aiming to roll out SFDs in a phased capacity-building approach.

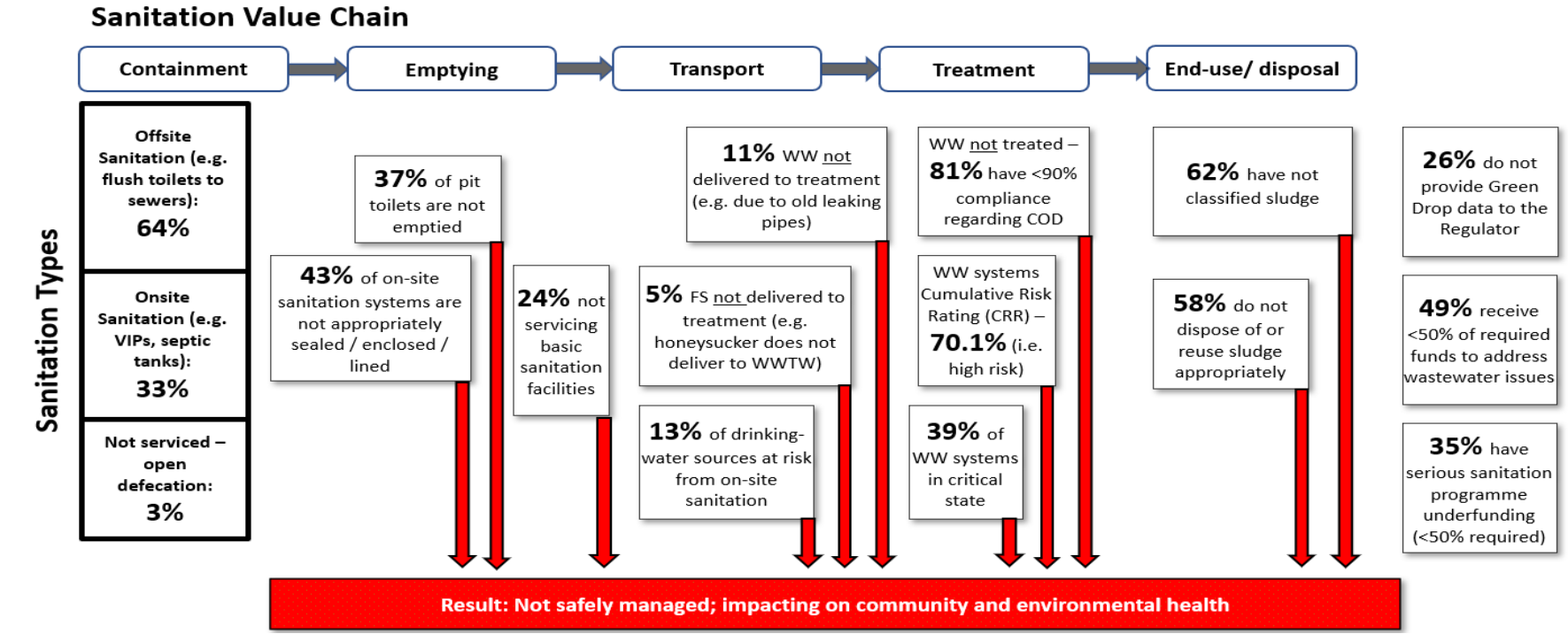


Figure 11.3 1st Order SFD for South Africa.

11.4 Development of Regulatory Mechanisms for non-sewered sanitation services

In South Africa sanitation services are provided with a mix of sanitation systems which include onsite and offsite (centralised and decentralised systems). South Africa needs a tool to plan, regulate, and report on safely managed sanitation for onsite sanitation systems. Faecal sludge and non-sewered sanitation are not currently a Green Drop focus, though faecal sludge from pits is often disposed of at wastewater treatment works. The impact of this on the treatment processes is often not monitored, and the loads inserted from vacuum tankers and buckets are not adequately assessed. There are challenges of full pits, stockpiling of sludge, safety concerns regarding poorly constructed onsite sanitation systems, and unsafe handling of human excreta in the entire sanitation service chain.

The regulation mechanisms are available for wastewater systems through the Green Drop Certification Programme while existing regulatory mechanisms for onsite sanitation systems are limited to package plants, decentralised systems and vacuum tank discharges through bylaws and enforcement. To address this gap, a new set of criteria has been developed and incorporated into the Green Drop Certification process. These new criteria will be communicated to WSAs and rolled out accordingly.

The inclusion of the non-sewered sanitation criteria into the Green Drop Certification Audit will be achieved in a phased manner, with appropriate accompanying (1) stakeholder advocacy and awareness engagements; and (2) water services institutions training and capacity building to ensure that the sanitation sector is ready and able to respond to the amended criteria.

This approach aims to provide sufficient time for:

- Sector stakeholders to grasp and understand complexities of including assessment of non-sewered sanitation systems,
- WSAs to improve current monitoring and evaluation systems,
- DWS to further refine the criteria through practical testing of the draft criteria (through pilot trials at selected WSAs).