10

SANITATION SERVICES

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The Africa Water Vision 2025: is for *"an Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation, and the environment."* This shared vision calls for a new way of thinking about water resources management and its use even in sanitation delivery programmes.

The first pillar of the shared Africa Water Vision 2025 focuses on "sustainable access to safe and adequate water supply and sanitation to meet the basic needs of all." This Pillar is in line with the aspirations of the National Development Plan 2030 vision, the national target for water supply and sanitation of achieving universal, sustainable, and reliable water supply and sanitation provision for all.

To develop, demonstrate, and validate appropriate alternative waterless and off-grid sanitation solutions by 2025. The DWS, in collaboration with the Department of Science and Innovation (DSI) is in the process of establishing the Sanitation Technology Technical Coordination Committee (STTCC) that will advise the sector on appropriate alternative sanitation technologies suitable for all settlement types that are using minimal resources and taking into consideration the effects of climate change.

10.1 Sanitation Technology Options used in South African

When considering technology choices for service provision, the choice has generally been full flush or latrine-based technologies. The technology choice is based on interlinked determinants such as availability of water, proximity in relation to the existing sewer network, and cost.

South Africa is a semi-arid country, with a projected 17% water deficit between demand and supply by 2030. The projected water deficit and climate change impact will significantly impact the traditional way of providing waterborne sanitation and requires the country to re-think sanitation provision, with more investment in non-sewered, low water, and waterless sanitation solutions.

10.2 Status of Sanitation Services

Statistics South Africa conducts the General Household Survey annually to determine the progress of the development in the country. It measures on a regular basis the performance of programmes and the quality-of-service delivery in key service sectors in the country.

A larger proportion (61%) of households are served with full flush toilets (waterborne sanitation) – which is a toilet connected to the sewer network, and wastewater treatment works, however, are not sustainable due to water shortages in the country and the impact of climate change and its dependency on energy (electricity) unless it

is an oxidation pond. Figure 10.1 presents an overall breakdown of the sanitation system types used in South Africa. What is critical regarding water and sanitation is South Africa's anticipated 17% deficit between water demand and supply by 2030. Therefore, there is an urgent need to move towards adopting and implementing non-sewered sanitation systems aligned with the National Water and Sanitation Master Plan. South Africa can no longer afford to use drinking water for flushing toilets.

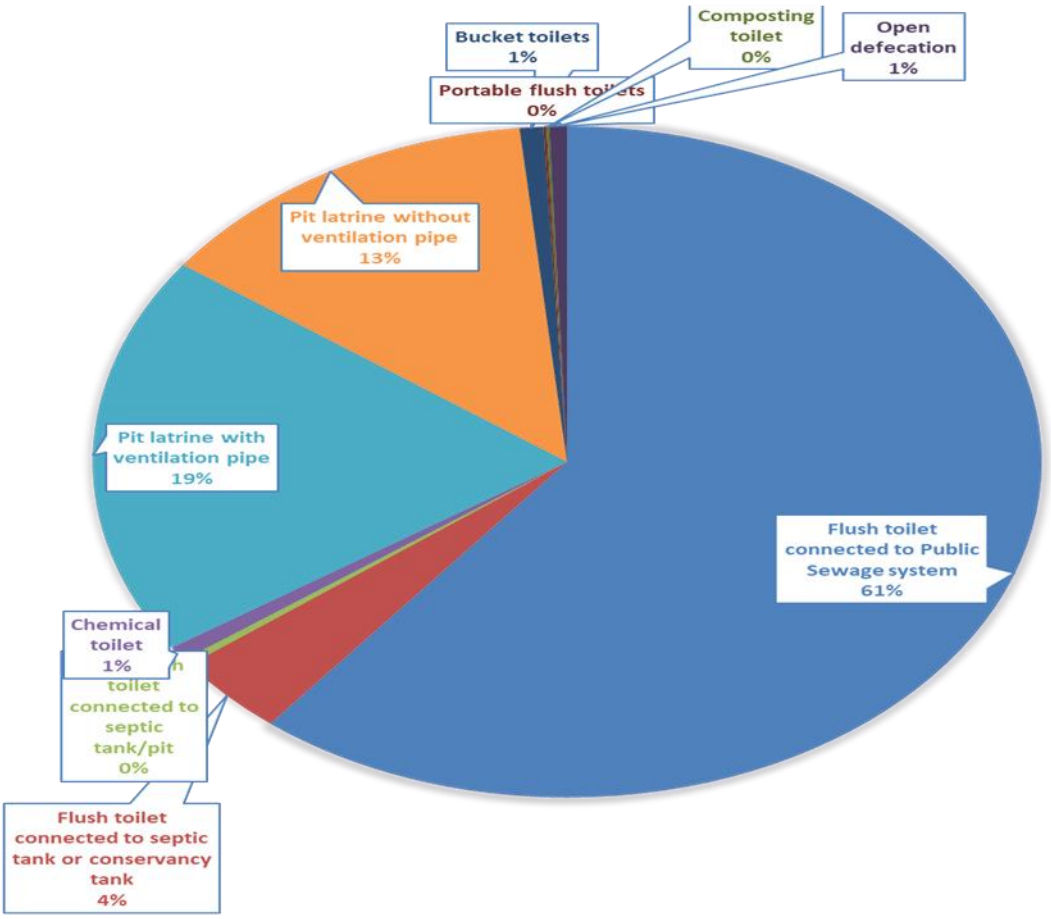

Figure 10.1 Sanitation systems used in South Africa (Stats SA, 2022)

In South Africa, significant progress has been made in addressing the sanitation backlog and providing appropriate sanitation to poor households in the country since 1994. Figure 10.2 Presents the sanitation delivery per province in 2021. Overall, the country has achieved 84% sanitation delivery in sanitation services.

Through the provision and the efforts of the government, support agencies, and existing stakeholders, the percentage of households with access to improved sanitation increased by 22,4 percent from 61,7% in 2002 to 84,1% in 2021. Most of the improvements are noted in the Eastern Cape, where the percentage of households with access to improved sanitation increased by 58,3%, and Limpopo with an increase of 31,6% to 58.6% in 2021.

However, there are still approximately 2.8 million households in South Africa without access to improved sanitation services which in some instances leads to open defecation. The eradication of open defecation requires immediate intervention.

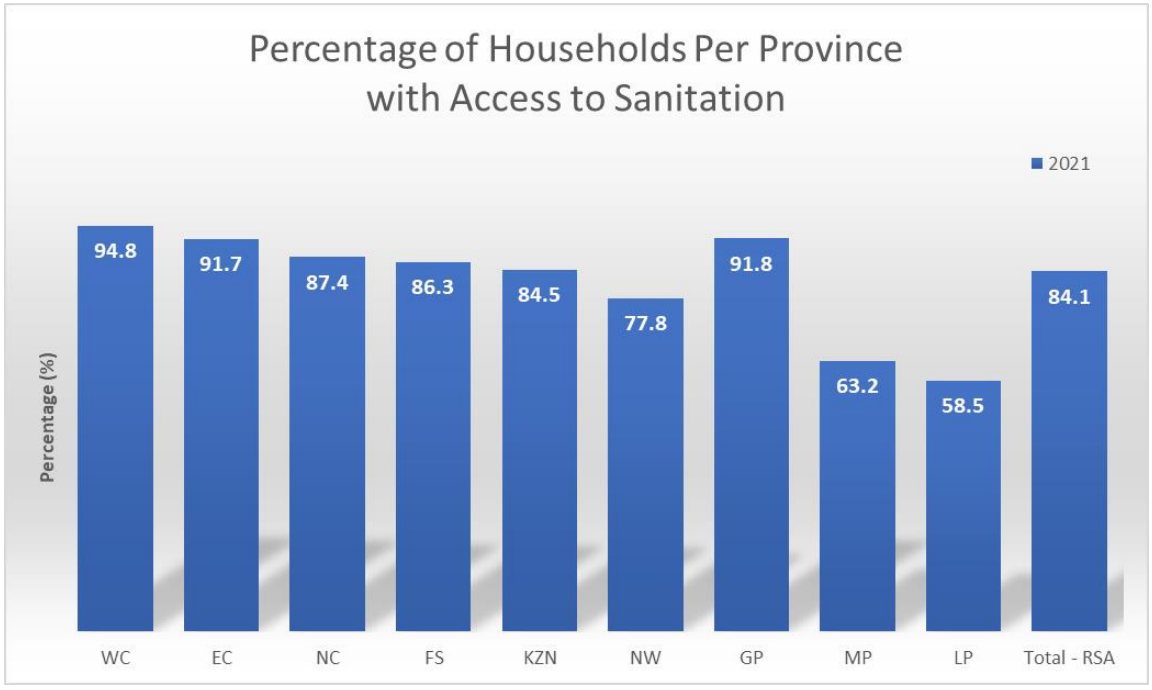

Figure 10.2 Access to sanitation per province, 2021.

10.3 Development of the Faecal Sludge Management Strategy

There are operations and maintenance needs that should be met which necessitate faecal sludge management from the collection, transportation, treatment, safe disposal, or reuse. In the past, the operation and maintenance of onsite sanitation technologies have not been given attention when compared to offsite sanitation systems, which include sewerage networks and Wastewater Treatment Works.

Faecal sludge management technologies: South Africa has access to a variety of uncertified technologies for toilets/containment technologies, emptying, and on-site treatment. Perceptions of these technologies are that they are interim solutions and that they are inferior technology. In addition, there is no transparent standardisation process in place. In addition, planning and budgeting for FSM technologies at the Municipal level needs strengthening. Finally, the services required to use those technologies safely are not in place and need to be regulated.

Faecal sludge management financing: Key issues for current FSM financing mechanisms in South Africa are as follows:

- Equitable Share is inadequate to meet all infrastructure maintenance requirements.

- The Municipal Infrastructure Grant is a well-established mechanism to support on-site sanitation. However, more funds are allocated to water supply than sanitation.
- The Water Services Infrastructure Grant tends to focus on water infrastructure in rural areas. The contribution to on-site sanitation and FSM is minimal
- Capital grants for networked/sewered sanitation services dominate overall sanitation expenditure.
- Tariff revenue tends to be well short of cost-recovery levels, leaving no room for cross-subsidy.
- Capital and operational subsidy go primarily to capital expenditure in most municipalities. Support to operations is inadequate.

10.4 Transforming Sanitation into the Future

Most South Africa's urban population sanitation needs are addressed through reticulated waterborne systems. The requirement for the technical functioning of these systems is water. According to Pillay and Bhagwan (2021) and research produced by the Water Research Commission (WRC), South Africa is over-exploiting its water resources, and withdrawals are expected to increase over the next 20 years. The flushing of 9 to 12 litres of potable water with faeces may not be viable in the near future and represents one area amongst many where South Africa's high per capita usage could be reduced.

Studies conducted by the WRC indicated that Dry sanitation is considered the "poor person's toilet" and a strong user preference for a flush toilet over dry sanitation technologies. Whereas the implementation of the VIP has shown fault lines along user acceptance and the Operation and Maintenance challenges of emptying and disposal of accumulated faecal sludges. Universal access to waterborne sanitation may not be realised due to the prohibitive costs and the availability of water. This calls for a paradigm disruption.

The WRC developed a systems approach to transforming sanitation into the future by addressing the much-needed paradigm shift. According to Pillay and Bhagwan (2021), the SANITI strategy incorporates the elements of behaviour change, industrial development, policy development for new sanitation, technology standards and regulations, technology testbeds, Research, Development, and Innovation (RDI) focused on supporting the strategy and sanitation academy which build the next cohort of skill and artisans required to service this new frontier resulting in:

- New sanitation that meets user needs and expectations while less demanding natural resources. The new sanitation must be replicable on a large-scale and the components must be easily sourced throughout the supply chain.
- Circular economy principles in which products in the value chain are recycled or re-used with the addition of other revenue streams.
- Establishing market needs and demands.

- Presenting a RDI pathway to achieve technical, policy and procurement targets in line with the vision.
- Creating a sanitation manufacturing industry around the technical advancements and creating several new jobs and employment around this.

The Department of Water and Sanitation will have to play a leading role in disrupting the current paradigm.