

SOUTH AFRICA YEARBOOK

2023/24

Water and Sanitation



Water and Sanitation

South Africa is a water-scarce country and rated the 30th driest in the world, with a rapidly increasing population. This is based on its average rainfall of 500 mm compared to the world average of 860 mm. The country's rainfall is unpredictable and common periods of drought limit the water resources even further. Rivers that used to flow throughout the year are now dry while others flow only during rainy seasons. Climate change continues to present changes in temperature, precipitation and extreme weather events.

South Africa's average annual rainfall is about half the global average. The country also has a very high evaporation rate. Raw water availability in South Africa could, however, rapidly deteriorate as demand escalates due to both economic and population growth. In addition, there are factors which could result in a contraction of supply, such as increasing physical losses in municipal distribution systems, degradation of wetlands, and the impact of climate change.

The mandate of the Department of Water and Sanitation (DWS) is set out in the National Water Act, 1998 (Act 36 of 1998) and the Water Services Act, 1997 (Act 108 of 1997)). The department's legislative mandate is to ensure that the country's water resources are protected, managed, used, developed, conserved and controlled by regulating and supporting the delivery of effective water supply and sanitation.

This is done in accordance with the requirements of water-related policies and legislation that are critical in delivering on people's right to have enough food and water, growing the economy, and eradicating poverty. Most of South Africa's freshwater comes from catchments that receive the highest rainfall (strategic water source areas). There are 22 strategic water source areas occupying 8% of the land, however these provide 50% of the surface run-off (water in wetlands, streams and rivers). The strategic water source areas support the water needs of approximately 60% of the population, 67% of national economic activity, and supply approximately 70% of irrigation water.

Agriculture is the largest water use at 61%, followed by municipal use at 27% (including industrial and commercial users provided from municipal systems), with power generation, mining and bulk industrial use, livestock and conservation and afforestation jointly making up the remaining 12%. The assurance level at which agricultural water is supplied is lower than for other sectors at 90%. Water for power generation is seen as strategically important and is provided with the highest assurance of supply at 99.5%; which translates to 1:200-year risk of failure.

Agricultural consumption is largely unmet, and there are concerns about unauthorised abstraction and water wastage in the sector. Chapter 4 of the NDP envisages a South Africa that recognises the importance of secure and equitable access to water and sanitation as catalysts for socio-economic development.

Over the medium term, the department will focus on providing

reliable water and sanitation services; improving the regulation of water quality through the application of blue drop, green drop and no drop incentive schemes; and prioritising the integration of water resource planning and development. Transfers to municipalities, public corporations and departmental agencies represent the largest component of the department's budget, accounting for an estimated 64.2% (R47.3 billion) of total spending over the medium term.

These transfers are expected to increase at an average annual rate of 3.7%, from R13.3 billion in 2023/24 to R14.8 billion in 2026/27. Large water resource projects, including the raising of the Clanwilliam Dam wall and the uMkhomazi water project, will be prioritised over the period ahead.

These projects receive funds in 2024/25 and 2025/26 through the budget facility for infrastructure and the Water Trading Entity's capital augmentation grant. The department will also work with water boards and municipalities to fast-track the delivery of water and sanitation services funded through the regional bulk infrastructure grant and the water services infrastructure grant.

Despite Cabinet-approved reductions amounting to R5 billion over the medium term, expenditure is expected to increase at an average annual rate of 3.6%, from R21.4 billion in 2023/24 to R23.8 billion in 2026/27. This is due to allocations in the current and previous two budgets from the budget facility for infrastructure water resource and bulk water infrastructure projects.

To mitigate against any negative impacts of the reductions on performance, the department plans to curtail spending on travel and subsistence, and consultants; capital augmentation transfers to the Water Trading Entity and the Magalies and uMngeni-uThukela water boards; and direct and indirect grants to local government.

Providing reliable water and sanitation services

To improve the provision of reliable water and sanitation services in municipalities over the medium term, the department plans to complete 37 regional bulk infrastructure project phases (seven mega, 22 large and eight small) and 234 small water infrastructure projects through the water services infrastructure grant that will support water services authorities such as municipalities and certain water boards. To achieve these targets, the Water Services Management programme is allocated R44 billion over the next three years.

Regulating water quality and access

Over the period ahead, the department intends to strengthen its regulatory function through increased capacity. This is expected to be achieved through establishing a regulator commission, an independent advisory body tasked with overseeing the trading of water and ensuring its continuous, equitable and sustainable provision. In addition to its regulatory role, the department plans to strengthen interventions to

address environmental and wastewater pollution in communities and support municipalities in which water and sanitation services have deteriorated.

As such, it plans to assess 1 032 water supply systems in 2025/26 for compliance with blue drop regulatory requirements, and 1 004 wastewater systems in both 2024/25 and 2026/27 for compliance with green drop regulatory requirements. It also intends to finalise 80% of water use licence applications within 90 working days of receipt.

Expenditure on these activities is expected to increase at an average annual rate of 4.7%, from R228.5 million in 2023/24 to R262.1 million in 2026/27, in the Water Resources Regulation subprogramme in the Water Resources Management programme.

Integrating and improving water resource planning and development

To improve infrastructure planning and development and ensure better integration of these two functions, the department plans to oversee the completion of 7 strategic projects, including the uMkhomazi bulk water supply scheme; the raising of the Clanwilliam Dam wall; and projects aimed at meeting high water demand for large strategic users such as Eskom, Sasol and Exxaro.

Expenditure on these projects is expected to increase from R3.3 billion in 2023/24 to R6.4 billion in 2026/27 at an average annual rate of 24.3%, due to additional allocations in the current and previous 2 budgets from the budget facility for infrastructure and the entity's capital augmentation grant. This work will be funded through transfers to the Water Trading Entity in the Water Resources Infrastructure Management subprogramme in the Water Resources Management programme.

To decrease over-reliance on surface water, the department intends to diversify its water mix by exploring other sources such as groundwater and aquifer systems, and by treating acid mine drainage water and desalinating sea water. Accordingly, four catchment plans for mine water and wastewater management are scheduled for implementation over the period ahead.

There are also plans in place to maintain and refurbish water resource infrastructure to ensure its optimal performance in securing water supply. These plans are related to the maintenance of conveyance systems such as the Orange-Vaal: Vaalharts, Fish Sundays government water schemes and the Qamata irrigation scheme.

Funding for these initiatives is made available in the Water Resources Information and Management subprogramme, which has a budget of R1.9 billion over the next three years, in the Water Resources Management programme.

Drinking water

Tap water inside their dwellings, on-site or off-site, was most common among households in Western Cape (99,3%), Gauteng (97,6%), and Free State (93,3%) and least common in Limpopo (64,2%) and Eastern Cape (67,2%), according to Statistics South Africa's (Stats SA) General Household Survey (GHS) of 2023.

Although the percentage of households in Eastern Cape with access to water in the dwelling, on- or off-site increased by 23,1 percentage points between 2002 and 2012, access has declined by 12 percentage points to 67,2% since then.

A similar pattern is observed in Limpopo where access to piped or tap water in their dwellings, off-site or on-site increased from 73,8% to 84% in 2010, before declining to 64,2% in 2023, almost 10 percentage points lower than in two decades earlier in 2002. On a more positive note, access to water in KwaZulu-Natal increased by 6,1 percentage points to 81,5% over this period.

Although, nationally, access to tap water inside their dwellings, off-site or on-site improved by 2,6 percentage points between 2002 and 2023, it is notable that access declined in five provinces during this period. Declines were observed in Limpopo (-9,6 percentage points), Mpumalanga (-3,9 percentage points), Northern Cape (-2,4 percentage points), Free State (-2,3 percentage points) and Gauteng (-1,1 percentage points). Although the percentage of households with access to water has been declining, it is important to note that a larger number of households received tap water in 2023 than two decades earlier.

An estimated 45,2% of households had access to piped water in their dwellings in 2023. A further 29,8% accessed water on-site while 9,7% relied on communal taps and 2,3% relied on neighbours' taps. Although generally households' access to water improved, 3,3% of households still had to fetch water from rivers, streams, stagnant water pools, dams, wells, and springs in 2023. About 97,2% of households in metros had access to tap water.

This type of access to water was most common in Cape Town (99,8%), Johannesburg (98,9%), and Ekurhuleni (98,6%). The lowest access amongst metros was recorded in Nelson Mandela Bay (87,6%), and Mangaung (91,7%). Despite a rather modest increase in the percentage of households with access to tap water between 2002 and 2023 (2,0 percentage points), the number of households with access to piped water from municipalities increased by 60,4% between 2004 and 2023, expanding from 9,2 million to 15,2 million during this period.

Fetching water

According to Stats SA's GHS of 2023, almost three-quarters (74,8%) of households who did not have water in their dwelling, or on their yards took less than 30 minutes to fetch water (i.e. to go there, get water and come back) from the nearest collection point. A further 18,8% took

between 31-60 minutes. Households that took less than thirty minutes were most common in the Western Cape (100%) and Gauteng (94,9%) and least common in Limpopo (64,4%) and KwaZulu-Natal (63,7%).

Water quality regulation and access

The department enforces regulatory measures that ensure the provision of safe water and the effective management of wastewater. To this end, it implements the green and blue drop certification programmes, which are incentive-based regulatory tools that measure the capacity and environmental, financial, technical and quality compliance of water service institutions.

The department plans to assess 1 004 wastewater systems in 2023/24 for compliance with the green drop regulatory requirements and 1 035 water supply systems in 2024/25 for compliance with blue drop regulations. To improve equitable access to water resources, the department plans to finalise 80% of water use authorisation applications within 90 days of application.

Expenditure for these activities is within the Water Resources Regulation subprogramme in the Water Resources Management programme. The subprogramme has a total budget of R694.1 million over the next three years.

Integrated water resource management

In its efforts to ensure water security, the department will continue to adopt an integrated approach to maintaining existing water resource infrastructure, supplying bulk water to strategic users such as large industrial companies through the Water Trading Entity, and supporting the long-term sustainability of water resources.

As such, the department will consider the impact of climate change, the role of ecosystems, rainwater runoff and storage, the use of other water resources such groundwater and aquifer systems, water conservation and water demand management plans.

The department also plans to implement and monitor the river eco-status monitoring programme in 221 rivers and implement five catchment plans for mine water and wastewater management.

Improving water services

To improve water services, over the medium term, the department plans to ensure reliable water and sanitation services by overseeing 25 large regional bulk infrastructure project phases and 14 small regional infrastructure project phases.

World Water Day and Week

World Water Day, which takes place annually on 22 March to underline the importance of fresh water, was celebrated in 2024 under the theme: "Water for Peace", raising awareness about water conservation and

sustainable management. In South Africa, the annual National Water Week campaign in March is aimed at educating the public about their responsibility in water conservation initiatives, raising awareness around the need to protect and conserve the country's water resources.

Sanitation

Environmental hygiene plays an essential role in the prevention of many diseases. It also impacts on the natural environment and the preservation of important natural assets, such as water resources. Proper sanitation is one of the key elements in improving environmental hygiene. According to Stats SA's GHS of 2023, for households per province that had access to improved sanitation facilities, nationally, the percentage of households with access to improved sanitation increased from 61,7% in 2002 to 83,3% in 2023.

Households' access to improved sanitation was highest in Western Cape (95,6%), Gauteng (90,7%) and Eastern Cape (88,1%), and most limited in Limpopo (61,9%) and Mpumalanga (67,2%). In Eastern Cape, households' access to improved sanitation facilities increased by 54,7 percentage points between 2002 and 2023, growing from 33,4% to 88,1%.

Similarly, the percentage of households with access to improved sanitation increased by 35,0 percentage points in Limpopo, and 31,8 percentage points in KwaZulu-Natal over the same period. Much of the growth observed in Eastern Cape between 2022 and 2023 was due to the installation of Ventilated Pit toilets.

Nationally, almost two-thirds (66,0%) of households used flush toilets that were either connected to a public sewerage system or a septic or conservancy tanks, while another 17,3% used pit toilets that are connected to ventilation pipes.

Households that did not have access to improved sanitation facilities largely depended on pit toilets without ventilation pipes (13,6%). The use of flush toilets was most common in Western Cape (95,4%), Gauteng (87,1%) and Free State (77,0%).

About one-third (30,0%) of households in Limpopo used some type of flush toilet, while another 31,9% used ventilated pit toilets. The largest percentage of pit toilets with ventilation pipes were observed in Eastern Cape (40,5%), Limpopo (31,9%) and KwaZulu-Natal (31,7%).

Legislation

The Constitution of the Republic of South Africa of 1996 enshrines the basic human right to have access to sufficient water, as well as a safe and healthy environment. Government fulfils these rights through the DWS, assisted by specific legislation, including the:

- National Water Act of 1998, which ensures that South Africa's water resources are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all people;

- Water Services Act of 1997, which prescribes the legislative duty of municipalities as water-service authorities to provide water supply and sanitation according to national standards and norms. It also regulates water boards as important water service providers and gives the executive authority and responsibility to the Minister of Human Settlements, Water and Sanitation to support and strengthen the capacity of municipalities to manage their own affairs, exercise their powers and perform their functions;
- Water Research Act, 1971 (Act 34 of 1971), which provides for the promotion of water-related research through the Water Research Commission (WRC) and the Water Research Fund; and
- National Environmental Management Act (NEMA), 1998 (Act 107 of 1998), which provides for cooperative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that promote cooperative governance and procedures for coordinating environmental functions exercised by organs of state.

Entities:

Consolidated water boards

Water boards were established by the Water Services Act of 1997 to provide support to municipalities by providing bulk water treatment and water distribution infrastructure. The water boards vary in size, activities, customer mix, revenue base and capacity. Some water boards provide retail water and sanitation services on behalf of municipalities. Rand Water and Umgeni Water serve largely urban areas. The rest of the water boards operate largely in the rural areas.

Rand Water

Rand Water is the largest bulk water utility in Africa and is one of the largest in the world, providing bulk potable water to more than 11 million people in Gauteng, parts of Mpumalanga, the Free State and North West – an area that stretches over 18 000 km². It operates 13 tertiary pumping stations and 60 strategically located service reservoirs and secondary booster stations; as well as multibillion Rand regional pipeline network of approximately 3 500 km.

Umgeni Water

Umgeni Water was established in terms of the Water Services Act of 1997 to provide water and sanitation services in its service area, which comprises mostly rural areas in KwaZulu-Natal and the eThekweni metropolitan area. The water board supplies water to approximately six million consumers. Its ongoing objective is to support.

Magalies Water

Magalies Water provides quality bulk water and secondary services

directly to municipalities, mines and other industries which in turn helps to grow the economy and improve the lives of communities. Raw water is drawn from the rivers which flow into dams that are owned by the DWS and Magalies Water buys the water from the department.

Water from the dams is channelled to Magalies Water's four water-treatment plants where the water is treated and made safe for public consumption. Municipalities draw the water provided by Magalies Water through the reservoir and provide it to consumers for household use.

Bloem Water

Bloem Water (formerly Bloem Area Water Board) was established in 1991 with the aim to operate the Caledon/Bloemfontein Government Water Scheme as well as supplying water to the municipal areas of Bloemfontein, Bainsvlei, Bloemspuit, Botshabelo and Dewetsdorp.

Amatola Water

Amatola Water was established in 1998 to provide bulk-water services in the Eastern Cape. It is committed to ensuring that the Eastern Cape communities have access to basic water services as this is a right enshrined in the Constitution of the Republic of South Africa of 1996.

Mhlathuze Water (MW)

MW was established in 1980 and predominantly operates in the uMkhanyakude, King Cetshwayo and Zululand district municipalities but has plans to expand beyond these districts. MW is supplied by three dominant water sources namely: Mhlathuze River, Lake Mzingazi and Lake Nsezi. The organisation's business activities include raw (untreated), clarified (partially treated) and purified water supply; disposal of industrial and domestic waste water and scientific services.

Lepelle Northern Water (LNW)

The mandate of LNW is to provide bulk-water services to water services authorities and industries within Limpopo. It is actively involved in schemes serving more than three million people as well as some major industrial users. LNW will continue to partner with the DWS in implementing Water Conservation and Demand Management as well as groundwater exploration to augment the surface water.

Overberg Water

Overberg Water came into being in 1993 when the former Duivenhoks and Rùensveld water boards amalgamated. It distributes water to the surrounding and rural areas of Cape Agulhas, Theewaterskloof and Swellendam. It has three water-treatment schemes with 22 reservoirs, which are strategically located across the Overberg region. The water

board derives its revenue from the sale of bulk potable water to its main customers, namely municipalities, as well as retail sales to the agricultural sector/industry in the region.

The organisation supplies and distributes approximately four million cubic metres of water per year. The region currently supplied covers approximately 6 000 square kilometres with a pipeline network estimated at 1 450 kilometres.

Other entities:

- The **Breede-Gouritz Catchment Management Agency** was established in terms of the National Water Act of 1998. The agency plays an important role in protecting, using, developing, conserving, managing and controlling water resources in a cooperative manner within the boundaries of the Breede-Gouritz catchment area.
- The **Inkomati-Usuthu Catchment Management Agency** was established in 2004 in terms of the National Water Act of 1998. The agency plays a key role in the use, protection and development of water resources in the Inkomati-Usuthu water management area, and aims to ensure that water is used and managed to support equitable and sustainable socio-economic transformation and development.
- The **Water Research Commission** was established in terms of the Water Research Act of 1971. It is mandated to conduct research in the water sector by determining needs and priorities for research; promoting coordination, cooperation and communication in the area of water-research development; stimulating and funding water research; promoting the effective transfer of information and technology; and enhancing knowledge and building capacity in the water sector.
- The **Water Trading Entity** was established in 1983 and was converted into a trading entity in 2008, in terms of the Public Finance Management Act of 1999. The entity's primary role is to manage water infrastructure and resources, and the sale of raw water.
- The **TCTA** was established in 1986 as a specialised liability management entity, deriving its mandate from the National Water Act of 1998. It is responsible for financing and implementing the development of bulk raw water infrastructure and providing treasury management services to the DWS. The authority plays an important role in providing: financial advisory services such as structuring and raising project finance, managing debt and setting tariffs; project implementation services; and other technical support to the department and water boards.

Policies and strategies

- **Mine Water Management Policy:** the policy seeks to balance the mining sector's economic development with the protection and ensuring sustainable use of water resources in a manner that

is beneficial to all. It will provide a coherent and integrated South African approach for sustainable mine water management by building on existing strengths; addressing gaps and weaknesses and seizing identified opportunities relating to mine water management, including acid mine drainage.

- **Sustainable Hydropower Generation Policy:** the policy aims to support the long-term energy master plan that pursues hydropower as part of the energy mix. In addition, it will provide policy positions on the establishment and development of hydropower from infrastructure owned by the DWS as part of interventions that support and contribute towards sustainable power supply in South Africa.
- **Integrated Water Quality Management Policy:** the policy seeks to develop an intergovernmental water quality management approach that will facilitate an integrated response to address water quality management challenges in the country. The policy will also strengthen the existing integrated water quality management strategy that identified priority programmes to be implemented country-wide.
- **National Water and Sanitation Bill:** This is a consolidation of the National Water Act of 1998 and the Water Services Act of 1997 to a single legislation. It will clarify the legislative framework regarding water management across the water and sanitation value chain. It will further obviate the need for cross reading between the two Acts.
- **National Water Resource Strategy 3 (NWRS-3):** the strategy provides a framework for the protection, use, development, conservation, management and control of water resources for the country as a whole. The National Water Act of 1998 requires the review of the NWRS at intervals of not more than five years and this is the third edition the strategy.
- **Review of The Water Pricing Strategy:** the strategy review seeks to improve the financial viability of government's bulk raw water business to ensure that this scarce resource is valued by all citizens. One of the major changes of the review is to replace the return on asset to future infrastructure-built charge over a 10-year rolling period.
- **National water and Sanitation Master Plan (NWSMP):** the plan operationalises the NWRS and aims at mobilising commitments and efforts of all role players and stakeholders in the water and sanitation sector towards collectively achieving the desired future state of the sector, as defined by government's vision, goals and targets until 2030. It provides a critical overview of the present state in the sector and the key challenges it is currently facing, together with a consolidated plan of actions required to enable the achievement of the set targets. The plan of actions will include a detailed schedule of consolidated and prioritised interventions, actions, investments, projects and initiatives. For each action, the plan defines specific intermediate and final targets, the parties responsible for their

achievement, the deadlines for delivery and the estimated costs or other required resources. The achievements are monitored and evaluated annually and the plan is updated bi-annually to reflect the dynamics in the sector.

National Water Policy

The National Water Policy is underpinned by three fundamental principles for managing water resources: equity, (environmental) sustainability and efficiency. All water users who do not receive their water from a service provider, local authority, water board, irrigation board, government water scheme or other bulk supplier, and who use water for irrigation, mining purposes, industrial use, feedlots or in terms of general authorisation, have a statutory obligation to register. This includes the use of surface and groundwater.

Other uses that must be registered are:

- diversion of rivers and streams;
- discharge of waste or water containing waste;
- storage, which includes any person or body storing water for any purpose from surface run-off, groundwater or fountain flow in excess of 10 000 cubic m³ or where the water area at full supply level exceeds one ha in total on land owned or occupied by that person or body, and who is not in possession of a permit or permission;
- local authorities and other bulk suppliers with their own water sources and purification works; and
- controlled activities such as irrigating with waste, power generation with water, atmospheric modification or recharging of aquifers.

An assessment of the environmental requirements of the rivers and streams concerned is conducted before a licence can be issued. To promote sustainable and equitable water resource management, the DWS has developed and continues to update a range of strategies for water management.

National Water Resource Strategy 2 (NWRS2)

The NWRS2 sets out the vision and strategic actions for effective water management, including the security of water supply, environmental degradation, and pollution of resources. The NWRS2 outlines key challenges, constraints and opportunities in water resource management and proposes new approaches that ensure a collective and adequate response for the benefit of all people in South Africa. The strategy also responds to the priorities set by government in the NDP and the National Water Act of 1998 imperatives that support sustainable development.

It is centred on these key objectives:

- Water supports development and the elimination of poverty and inequality. The strategy recognises that the manner in which water was allocated in the past was unequal and favoured certain sections of the population. The intention, therefore, is to redress past

imbalances in the manner in which water was allocated, ensuring that water contributes to the economy and job creation.

- Water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner. The NWRS2 also focuses on water conservation and the management of water demand as key priorities.

National Groundwater Strategy

In South Africa, groundwater plays a key strategic role in supporting economic development and sustaining water security in several rural and urban settlements that are either entirely or partially dependent on groundwater supply.

To augment the current available water and increase supply, the DWS was by mid-2024 implementing several measures to ensure the increased use of groundwater in a sustainable and reliable manner. Generic standard operating procedures for municipalities have been developed, covering groundwater planning and exploration, drilling, borehole testing, monitoring, operation and maintenance.

Compliance with these standard operating procedures was included in the revised norms and standards for water services which were released for public consultation. The department also supports municipalities with capacity building and data regarding groundwater aquifers, which have potential for further sustainable exploitation.

The regulation of the use of groundwater was also strengthened to include spot checks of groundwater users to ensure that they are adhering to the legal requirements and to their licence conditions.

The new regulations will also require all groundwater users to register their boreholes and provide information such as abstraction volumes and that borehole drillers provide the department with information on all drilling.

Reuse Strategy

The DWS has developed a Water Reuse Strategy to encourage informed decisions relating to water reuse. Reuse could be increased significantly with return flows in coastal cities, where it would otherwise drain into the sea. In coastal cities, water reuse and desalination compete as two options for water conservation.

Reuse is becoming increasingly acceptable and feasible owing to increasing shortages, improved purification technology and decreasing treatment costs.

Membrane technologies, also used for desalination of seawater, have become more affordable and have improved. The reuse of treated wastewater would be managed to ensure public health safety.

Alternative sources of water

According to Stats SA's GHS of 2023, alternative sources of drinking water were used by households that experienced water interruptions

that lasted two days or longer during the previous year. Nationally, 27,3% of households relied on water from water tankers or vendors. 6,2% used water from springs, wells, dams, pools or from rivers and streams. Rainwater tanks (4,2%) and boreholes (2,6%) were also relatively common.

Moreover, 39,3% relied on stored water, while 15,9% did not have backup plans. The use of water vendors was highest in North West (23,5%) and Limpopo (23,0%), while water tankers were most common in Free State (30,2%), Gauteng (29,4%) and KwaZulu-Natal (28,0%). Drawing water from springs, wells, dams, pools, rivers, or streams was most common in KwaZulu-Natal (13,8%), Eastern Cape (10,3%) and Mpumalanga (5,8%).

For households that consumed bottled water at home by province, nationally, 46,8% of households never drank bottled water while 34,6% of households drank it 'sometimes'. Drinking bottled water everyday was most common in Northern Cape (23,9%) and North West (15,5%) and least common in Limpopo (4,8%).

Resources

South Africa's water resources are, in global terms, scarce and extremely limited. The precipitation per year for Africa is 22 300 km³, of which the evaporation rate is 80% and the runoff rate is 20%. Southern Africa only has 12.25% of the total water in Africa, making it a highly arid region. Rainfall is, however, relatively higher in the northern and eastern parts of southern Africa (the Democratic Republic of Congo (DRC), Zambia and Mozambique) with the drier parts of the region including Namibia, Botswana and South Africa.

South Africa has a mean annual rainfall of approximately 500 mm, compared to the world's average of 860 mm. It is characterised by low, variably distributed rainfall as well as high evaporation rates, resulting in the uneven distribution of run-off across the country.

The country experiences severe and prolonged hydrological droughts, which may last as long as 10 years at a time. The quality of water in South Africa is also negatively impacted by dissolved salts from host rocks in certain areas such as Namaqualand in the Northern Cape.

The surface water potential of the major drainage systems in South Africa are dominated by the Orange and the Limpopo river basins, which are shared with neighbouring countries. Over 60% of the country's river flow comes from 20% of the land area.

To overcome the uneven spread of water resources and to manage floods and drought, more than two thirds of the country's mean annual rainfall is currently stored in dams. The country's water security is mainly reliant on fresh surface water, with groundwater and return flows underused. However, the freshwater available for use is currently at its limit, and alternative sources, such as groundwater need to be further exploited.

In addition, the country shares four major rivers with six neighbouring states, namely Zimbabwe, Botswana, Mozambique, Eswatini, Lesotho and Namibia. Therefore, international agreements on water sharing are in place on all of these river basins.

There is well-developed infrastructure, with more than 4 395 registered dams in South Africa, including 350 dams belonging to the DWS, and a number of large-scale, inter-basin water transfer schemes. Water services infrastructure covers more than 35 000 km of bulk pipelines and 200 000 km of reticulation systems that are managed by 152 water service authorities and providers. However, this existing infrastructure needs maintenance and the country is already experiencing challenges with lack of focus on sustainable asset management.

The schemes also require efficient and effective operations, for which specialised skills and capabilities at all levels are needed. Major challenges are experienced regarding the capabilities of water services authorities to effectively manage the schemes on a sustainable basis.

This issue needs to be dealt with decisively through a review of the mandates and policies in relation to the management of water infrastructure, and available capacity.

Work is also required in terms of rolling-out the establishment of appropriate institutions, such as regional water utilities, as the development of tourism, fisheries and other projects for economic and social development.

Education and awareness

National Water Week

The National Water Week campaign is aimed at educating the public about their responsibility in water conservation initiatives, raising awareness around the need to protect and conserve the country's water resources. The DWS celebrated National Water Week from 20 to 26 March 2024 by urging everyone to use water sparingly to ensure Water For All. Each year, the United Nations Water sets a theme for World Water Day which responds to a current or future challenge.

The theme for World Water Day 2024 in South Africa, and globally, was "Leveraging Water for Peace". This theme highlighted the importance of water cooperation and sharing to enhance peace and stability. It emphasises using water resources to promote peace rather than conflict. The day raises awareness of the global water crisis and focuses on the achievement of Sustainable Development Goal 6: Clean Water and Sanitation for all by 2030. The DWS launched the #SaveWater campaign to remind all South Africans that every drop counts.

Despite good rainfall, South Africa remains a water-scarce country and, as such, is susceptible to sustained droughts exacerbated by climate change.

Regional and international cooperation and initiatives

In line with the DWS's regional and international responsibilities in the water sector, the department entered into collaborative relationships with countries, such as:

- Lesotho, Namibia, Botswana, Zimbabwe, the DRC and Eswatini in the region.
- Mozambique and Eswatini on the Inkomati and Maputo rivers.
- Botswana, Lesotho and Namibia on the establishment of the Orange Senqu River Commission.
- Botswana, Zimbabwe and Mozambique on the establishment of the Limpopo Watercourse Commission.
- Lesotho on the Lesotho Highlands Water Project.
- Eswatini on the Komati River Development Project.
- These agreements improve South Africa's bilateral and multilateral relations in the African Union. All the countries involved benefit, while sharing development costs. South Africa shares four of its major river systems with six immediate neighbouring countries, namely Botswana, Lesotho, Mozambique, Namibia, Eswatini and Zimbabwe.