



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

MEDIA BRIEFING NOTES ON THE STATUS OF DROUGHT BY THE MINISTER OF THE DEPARTMENT OF WATER AND SANITATION, MS. NOMVULA MOKONYANE

RAND WATER, GLENVISTA, JOHANNESBURG

01st November 2015

South Africa is a water scarce country with highly variable rainfall and water runoff. To mitigate this situation this requires pro-active and responsive risk management, coupled with innovative water security management interventions. Climate Change has exacerbated the situation and thus numerous parts of South Africa have for a few years, now, been experiencing below average rainfall.

Due to prolonged lower-than-normal rainfall since the beginning of the year, drought conditions are being experienced across the country. The rainfall recorded by the Department of Water and Sanitation (DWS) during the month of September till the middle of October 2015 revealed that early spring has not yielded the anticipated rainfall resulting in worsening drought conditions.

This has led to water shortage in a number of public water supply schemes/dams. But so far, drought disaster has been declared in only two of the nine provinces – KwaZulu Natal and Free State provinces. Funding for specific drought mitigation measures have been received by only KZN province.

Currently large areas of KZN are experiencing severe drought conditions. Despite the rains received in July, the drought is continuing unabated. The long range forecast show below normal expected rainfall and therefore little relief is anticipated in the coming months.

From a water supply perspective, water security must therefore be viewed and assessed in consideration of the following water services situations:

- *Users served by large regional water supply schemes comprising major dams and large bulk infrastructure networks.*
 - *These systems have a higher assurance of supply due to multi-year water storage and lower risk of water variability due to a larger spatial footprint and inter-basin water transfers.*
 - *The bulk of the economic nodes and national growth points are served by such schemes, totalling 238 schemes nationally. The majority of these systems are currently in a positive water balance with the national average dam storage measured at 66% of full supply capacity.*
 - *In selected drought areas, such as KwaZulu Natal, the average dam storage of the large schemes is 69% with three of eighteen schemes below 50% of full supply capacity;*
- *Users served by local water supply schemes consisting of smaller dams and/or groundwater resources.*
 - *These schemes are more vulnerable to the effect of droughts as there is generally less water storage capacity, smaller water catchment areas and only limited water sharing / augmentation opportunity.*
- *Users with stand-alone or rudimentary water supply, such as individual boreholes, rainwater tanks, springs and run-of-river abstractions.*
 - *These users are most vulnerable and may be impacted within relatively short time frames by falling groundwater tables, reduced river base flow and depleted water storage.*
 - *An estimated 6500 stand-alone rural communities are currently experiencing water shortages. These are mostly situated in KwaZulu Natal, Mpumalanga, Limpopo and North West provinces. This number could increase to over 11,000 rural communities as the dry period extends and local water resources get depleted.*

In drought stricken areas such as the northern parts of KwaZulu Natal, southern parts of Mpumalanga, and selected areas in Limpopo, North-West and Northern Cape provinces, about 50% of local water storage is problematic and could become critical if they are not managed carefully.

The drought currently affects 173 of the 1628 water supply schemes nationally, serving approximately 2.7million households or 18% of the national population.

PROVINCIAL DROUGHT RELATED WATER SECURITY PERSPECTIVES

Gauteng

Most of Gauteng's water is supplied by the Vaal and Crocodile West River systems. Currently the average dam levels are at 84% and pose manageable short-term water security risk.

No hydrological drought is experienced currently.

A number projects are however underway to address service deliver problems.

The restrictions that have been implemented by Tshwane or Rand Water are as a result of the current high weather conditions which could lead to drought situation.

The smaller water supply systems are the ones affected the most and not the bigger systems such as the Vaal.

As part of the normal operating rules, the department does a 3-year view in May of each year of how the system is going to react. Based on what we saw during the May runs this current year, it was decided to release some water from Sterkfontein Dam to Vaal Dam to create storage in the Sterkfontein Dam, which will then be filled with water pumped from the Tugela River.

For years now, we were experiencing above normal rainfall and runoff, which means that we only had to pump enough water to replenish that what was lost through evaporation in Sterkfontein Dam.

But, because of the system storage being lower than before, and to avoid having to impose possible restrictions in the near future, we decided on this additional pumping. Gauteng receives most of its water from the Vaal River System and should therefore be fine for the coming couple of years. We are also monitoring the situation on a monthly basis.

The City of Tshwane implemented the water restriction in most of their towns due to the heat wave towards the end of the first week of October 2015. With no major rainfall currently happening the water restriction have continued to be implemented.

Towards the end of October, Randwater informed the three metros in Gauteng (The City of Tshwane, City of Johannesburg and City of Ekurhuleni) of the low levels in the water reservoirs due to very high temperature and no or low rainfall. Joburg water had not yet implemented water restriction in its area

of operations, but communities have been advised to use water wisely.

The key measures to be implemented in mitigation of potential drought impacts are: water conservation and water demand management programmes, Phase 2 of Lesotho Highlands Water Project, the eradication of unlawful water use in the irrigation sector, desalination of mine water and re-use of return flows.

Eastern Cape

The water situation is generally good with the average dam level at 78% and most of the key dams are at full or close to full levels. Five of the 25 local municipalities have an average dam water level below 60% with two due to dam safety operations. These are the Camdeboo, Ikwezi, Inxuba Yethemba, Mbashe and Nyandeni municipalities.

Areas of concern include Butterworth/Idutywa, which is fed by the Xilinxha Dam (under 48% full) and the Gcuwa Weir. Water restrictions should be implemented urgently to stretch the available water in that system. The Nelson Mandela Bay Metro remains at risk due to slow implementation of the Nooitgedacht Low-level scheme which was started in the drought of 2009-2011. The city will be subject to water restrictions until its completion by 2018.

Free State

The province is generally in a positive water balance with the average dam water level at 67%. The critical water areas are the central areas along the watershed relying on water transfers from the Caledon River system. This system has experienced abnormally low flows in recent years.

Water restrictions have been implemented for users in the Caledon River system and releases from the Lesotho Highlands transfer into the Little Caledon River are being implemented to augment the system in the short-term. A direct pipeline from Gariep Dam to supply Mangaung and the surrounding areas is being planned as a long-term solution. Rural towns in the western low rainfall region depending primarily on local groundwater supply are also vulnerable to drought.

KwaZulu Natal

Rainfall records show that 2014/2015 was one of the 10 driest years since 1960. The average water level of all the dams in the province is currently 58% of full supply capacity. Currently 3 of 18 large water supply schemes are at risk, including Hazelmere Dam at 27%, Goedertrouw Dam at 35% and Hluhluwe Dam at 30%.

Rainfall at Hazelmere dam was the lowest in 33 years. At present 42 of the 117 schemes are affected by the drought. The main drought impacts are however at local and rudimentary water supply

schemes where more than 50% of schemes are experiencing serious water shortages. The Department has prioritized the KwaZulu Natal Province as it is currently the one most affected.

A plan of action has been developed which includes, drilling of boreholes, spring rehabilitation and packaged desalination plants. More than 150 tankers have already been deployed in 12 local municipalities. There is also severe restrictions already been put in place across numerous towns and cities, such as Vryheid and Ulundi, City of uMhlatuze, North Coast and South Coast. It is noteworthy that some of the affected areas have extremely high water losses which must be improved so that resilience to the drought situation can be enhance.

Limpopo

The average water level of dams is 71% in the province with 12 of 24 dams above 80% and 4 dams below 50%.The dams that are of concern are Luphephe Dam (18%) ,Nwanedzi Dam (35%) ,Middle Letaba Dam (32%), Nsami Dam (34%) and Modjadji Dam (32%).

Recent construction of the De Hoop Dam brings much needed relief to the rapid growth in mining and domestic water demands in the Sekhukhune District Municipality. However, due to the lack of bulk connector services, rural communities are prone to drought impacts. Speeding up the connector services will go a long way in alleviating the situation.

Of the 245 water schemes, 24 are currently impacted by the drought. Most of the other schemes are also at risk due to poor operation and maintenance and many experience regular interruptions, which are not related to the drought. Groundwater is an important and strategic water resource in the province.

Areas of concern are related to uncontrolled abstraction, as well as declining groundwater levels in the Molototsi, Klein and Middel Letaba River areas. Interventions measures include rehabilitation and drilling of boreholes.

Mpumalanga

Dam water levels are on average at 70% in the province. The drought stricken area is primarily located in the south bordering KwaZulu Natal and Swaziland. Ohrigstad Dam is currently at 10% and Rhenosterkop Dam at 32% posing water shortages for Ohrigstad and the surrounding areas. Municipalities most affected include Chief Albert Luthuli, Dr JS Moroka, Dr Pixley ka Seme, Mkhondo, Msukalingwa and Thembisile.

Despite below average rainfall the domestic water supply systems are still in a good state. Main impacts are on irrigated agriculture, forestry and associated industries.

Northern Cape

The Northern Cape is located in a semi-desert climate and is thus regularly subjected to extremely low rainfall. A total of 280 communities are dependent on groundwater. This represents about 465 000 people or approximately 30% of all Northern Cape households.

Many of these towns are already utilizing over 76% of the groundwater potential and alternative sources of water are being investigated to reduce the risk of non-supply of water. These include re-use of water, water loss reduction and further transfer of water from the Orange River.

North West

The average water level in all dams is 53%. While the Crocodile West system is still in a good state, the Marico river catchments are experiencing extreme drought with some dams (such as Kromellenboog) as low as 6%.

Below normal water levels are experienced in Sehujwane, Marico-Bosveld & Kromellenboog, Swartruggens, Pella, Molatedi Lindleyspoort and Koster Dams supplying Kgetleng River and Moses Kotane Local Municipalities. The situation is intensified by growth in urban water requirements and associated needs. Molatedi dam is a critical water supply to Botswana and is now at a level of only 5%. Water restrictions are currently being implemented. The province relies heavily on groundwater and there is potential for further exploitation

Western Cape

The average dam level in the Western Cape is currently at 70%. This is low compared to the same time last year (89%) because of lower than normal rainfall during the past winter

The main drought impacts are on agriculture in the Vredendal, Garies, Bitterfontein areas, where the farmers have already applied for drought relief for their stock. The Central Karoo areas of Merweville, Laingsburg, Prince Albert, Beaufort West, Drakenstein, Stellenbosch and Loxton are also very dry due to the delays in winter rains.

The situation is exacerbated by the low rainfalls in the traditionally summer rainfall areas, where groundwater levels are dropping. The September indicators went even lower in these areas. Other municipalities, such as Mossel Bay, Beaufort West, Ladysmith and Bitterfontein have pro-actively addressed the impact of the drought through groundwater exploration, desalination and re-use of return flows.

DROUGHT MITIGATION IN THE LARGER WATER SUPPLY SYSTEMS

Mdloti Water Supply System – Hazelmere Dam

The Hazelmere dam has maintained levels in the region of 30% since June 2015. In September 18.4 mm rain was recorded and the dam dropped 0.59% during the month. A total of 217.4 ml/day was pumped to the Hazelmere Dam from oThongathi River.

Water restrictions are being maintained at 30% and a drop in the level of the oThongathi River limited the volume pumped early in October.

Drought meetings are convened in a biweekly basis to monitor the situation on the North Coast.

Umzinto Water Supply System- EJ Smith and Umzinto Dams

The Umzinto area and the dams are currently at 68.54% (EJ Smith) and 20.68% (Umzinto). Although the combined volume of water in the Umzinto system appears acceptable, the level of the Umzinto Dam has reached a critically low level as infrastructure constraints prevent more than 5Ml/day being abstracted from the EJ Smith Dam.

The frequency of the drought committee meetings has been increased to every week and the Ugu District Municipality (DM) has been requested to ensure at least a further 2Ml/day is saved in order to prevent the Umzinto Dam from failing. The system responds quickly and it is anticipated that summer rainfall should result in the levels recovering.

The pumping from the Mpambannyoni River has maintained the levels in the EJ Smith Dam.

Mhlathuze Water Supply System – Goedertrouw Dam

Goedertrouw Dam is currently at 36.86%. The emergency pumping scheme from the Thukela River continues to be utilised. The imposed restrictions have had a positive impact on the declining dam storage. The risk of the dam failing has been reduced significantly but careful monitoring is required, particularly in the longer term with risks in 2016 and 2017.

Vryheid and Ulundi Water Supply System - Klipfontein Dam

The Klipfontein Dam level is currently at 34.38%. Water restrictions are being implemented but the success of the restrictions is not evident. The risk to Vryheid has been reduced through reduced draw off the Dam.

The dam level is currently tracking outside of the projection for the scenario with water restrictions and if the current trend continues the dam may come close to the 20% critical level towards the end of the year. The extent of summer rainfall will determine how close to critical levels the system will come.

Buffalo River System – Ntshingwayo Dam

Ntshingwayo Dam level is currently at 65.28%. The implementation of restrictions includes the closing of the water supply from 8 pm until 4 am daily. High lying areas are supplied with water tankers.

Interventions include the upgrading of the Tayside abstraction pumps and the drilling of boreholes. Forced leak repairs in Sithembile have yielded positive savings and awareness campaigns and public meetings have been undertaken. The projects have been updates to incorporate the additional releases that are being made to support the Tayside weir for Dundee and Glencoe areas.

Greytown WSS – Lake Merthley

The level of Lake Merthley is critically low at approximately 10% and is dropping faster than was anticipated with restrictions from the May analysis.

Approximately 2400 flow restrictors have been installed at a connection level in an attempt to reduce the consumption in the system which is currently at 2.1 MI/day. The risk of the Dam failing early in 2016 is unacceptably high.

Connection of 3 boreholes into the supply system as well as re-commissioning of the abstraction from the Greytown Stream has yielded approximately 0.8 MI/day.

A meeting has been held with the Municipal Manager to discuss the urgency of the situation. Water is only being opened between 4am and 8am daily to force the required savings.

Hluhluwe Water Supply System - Hluhluwe Dam

The Hluhluwe Dam level is currently at 33.28% and over the past 2 months has responded positively to the reduced abstraction volumes.

The Regional office is monitoring the implementation of the water restrictions that were advertised in the Government Notice on 3 July 2015.

Drought Committees have been established in the following areas and are meeting at lease biweekly:

- *North Coast Supply Systems – Hazelmere, Umvoti, Ilembe*
- *Mhathuze System – Richards Bay, Uthungulu*
- *Ugu Supply Systems – Harding and Umzinto*
- *Umzinyathi – Greytown supply system*

- *Klipfontein Supply System – Vryheid and Ulundi*

DROUGHT RESPONSE MEASURES

To address and mitigate the potential impacts of this drought there are immediate/short, medium and long term measures are being put in place. These measures include:

- *Strict implementation of drought operating rules at all dams including restrictions*
- *Increase the water mix especially ground water utilization (drilling of additional boreholes), rainwater harvesting, re-use of return flows and packaged desalination plants*
- *Reduce operational risks by proper infrastructure operation and maintenance with associated skills development*
- *Implementation of water conservation and demand management programmes (including the war on leaks and drop the block interventions)*
- *Emergency interventions by tankering*
- *Climate research as well as hydrological and geo-hydrological monitoring.*

FUNDING SUPPORT TO THE WATER SERVICE AUTHORITY MUNICIPALITIES

Purchase of water tankers

The Department of Water and Sanitation through its National Water Resource Infrastructure Unit is managing the procurement of 45, 18 000 litre water tankers. A total of 682 water tanks with stands will be distributed to Ugu district municipality (DM), Umkhanyakude (DM), Illembe DM and Harry Gwala DM.

Illembe DM has completed their tank stand installation. Umgeni Water has completed the 30 tanks in Harry Gwala DM. 81 tanks have been installed in Umkhanyakude DM. The budget limitation of R2m allowed for 81 tanks not the 500 they had requested. Additional sites are being identified in order to utilize the savings on the budget. Umgeni Water has completed 20 of the 144 Ugu DM tanks. Uthukela DM are beginning the procurement process for the installation of their tanks

Spring Protection, Refurbishment And Upgrade, Tanker Rental

The expenditure on the spring protection, refurbishment and upgrade projects, as well as tanker rental to be implemented by the nine Water Services Authorities amount to R75 667 240.93.

Boreholes

Approval was granted to appoint a turn-key service provider to procure siting, drilling and hydrogeological services to implement borehole interventions where the DM did not already have contracts in place. Work started at the Umkhanyakude and Ilembe DM in September 2015.

Interim tankering and second phase intervention in five district municipalities, namely; Umkhanyakude, Umzinyathi, Ugu, Amajuba, and Uthungulu, have been approved for the total amount of R96 620 552.00

The Department of Water and Sanitation has committed R352.6 million to the initial drought intervention projects and a further R96.620 million to interim tankering and additional interventions. Significant additional funding is still needed for a second drought declaration which is being led by the Province Disaster Management Unit of the Department of Cooperative Governance and Traditional Affairs.

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