

Botswana

Capital city: Gaborone
Inhabitants: 2 Million



INSTITUTIONAL SETTING AND PURPOSE

Groundwater level monitoring in Botswana is carried out by the Ministry of Land Management, Water and Sanitation Services (MLMWS, formerly the remit of the Ministry of Minerals, Energy and Water Resources, MMEWR).

The Department of Water and Sanitation monitors both natural (undisturbed) areas and pumping (disturbed) areas. Formerly, the natural areas were monitored by the Department of Geological Survey (DGS), which has been transformed into Botswana Geoscience Institute. The objectives of monitoring are (i) to observe long-term groundwater level behaviour under natural conditions and to collect data for future economic development and resources management, and (ii) to observe long-term groundwater level behaviour under pumping conditions to analyse changes and aquifers' responses to stresses.

DWS also advises the Water Apportionment Board for licenses of large water users. Large water users have to report annually, although without the obligation to submit the relevant data to the Department of Water Affairs (DWA).

Furthermore, the Ministry of Agriculture oversees the livestock watering and large-scale irrigation, and the Water Utilities Company (WUC, parastatal) is the drinking water supply authority responsible for abstraction, distribution, and monitoring of pumped wellfields.

WUC is responsible for compliance monitoring in and around wellfields and monitoring the performance of boreholes. Large water users carry out compliance monitoring as well.

CHARACTERISTICS OF THE NETWORK

The national groundwater monitoring network has approximately 1000 piezometers, and in general the measurements are taken manually and monthly. In addition, WUC has approximately 100 data loggers installed in about 10 wellfields.

PROCESSING AND DISSEMINATION

The Department of Water and Sanitation uses its web-based Integrated Groundwater Resource Data Management System (IG-WRMS) for storage and dissemination of borehole completion certificates, dams, river draw offs, and monitoring data (levels, quality and quantity) and information.

Sources

- **Feedback from the Department of Water and Sanitation Botswana** - received on 06-10-2020;
- **IGRAC, 2013. Groundwater Monitoring in the SADC Region, 2013. Overview prepared for the Stockholm World Water Week** - https://www.un-igrac.org/sites/default/files/resources/files/Report_Groundwater%20Monitoring%20in%20SADC%20region.pdf;
- **Farr, J.L. 2017. Groundwater Monitoring Assessment Study Botswana. World Bank GFDRR Final Report** - Report prepared as a collective contribution from DWS (DWA) and WUC as main stakeholders and other stakeholders as Department of Meteorological Services (DMS), Botswana geoscience Institute (BGI), National Disaster Management Office (NDMO), Universities (UB and BUIST), private sector (Debswana, mining companies, industrial enterprises, parastatals), and government ministries and departments;
- **Upton, K, Ó Dochartaigh, B É, Key, R, Farr J and Bellwood-Howard, I. 2018. Africa Groundwater Atlas: Hydrogeology of Botswana. British Geological Survey. Accessed 02-07-2019** - http://earthwise.bgs.ac.uk/index.php/Hydrogeology_of_Botswana; and
- **SADC country visits** - 2017.