



Baseline Survey Summary Report  
Status of Groundwater and Drought Management in SADC  
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SADC Groundwater and Drought Management Project  
Plot 115, Unit 7b, Kgale Mews  
Private Bag 282,  
Gaborone, Botswana  
E-mail: [mail@sadc-groundwater.org](mailto:mail@sadc-groundwater.org)  
Website: [www.sadc-groundwater.org](http://www.sadc-groundwater.org)

## **Introduction**

A Survey on the status of Groundwater and Drought Management in the Southern African Development Community (SADC) Member States was conducted between September 2008 and January 2009 by the SADC Groundwater and Drought Management Project.

## **Use of Survey Findings**

The findings from the survey will enhance the understanding of critical challenges towards groundwater and drought management within the SADC Member States. In addition, information from the Baseline Survey can be used for:

- reviewing progress of groundwater-related programmes and assist towards improving future policies and strategies within Member States and the region as a whole;
- identifying, initiating and supporting further groundwater management and development initiatives throughout the SADC member states;
- developing analysis to provide in-depth information to guide the future direction and effective management of groundwater and drought by academicians, researchers, programme personnel and technical staff in water resource management projects.

The Baseline Survey was conducted through a questionnaire that sought to obtain comprehensive information about the groundwater condition in all the SADC Member States in order to aid designing of strategies to facilitate realization of the project objective.

The objective of the SADC Groundwater and Drought Management Project (GDMP) is the development of consensus on a SADC regional strategic approach to support and enhance the capacity of its Member States in the definition of drought management policies, specifically in relation to the role, availability (magnitude and recharge) and supply potential of groundwater resources.

The GDMP is part of the SADC Groundwater Management Programme (GMP), whose overall goal is to promote the sustainable development of groundwater resources at a regional level, incorporating research, assessment, exploitation and protection, particularly related to groundwater drought management.

The GDMP contributes to the implementation of the SADC Regional Strategic Action Plan (RSAP) on Integrated Water Resources Management (IWRM) which has a Groundwater Management Programme as one of its key components on the planning and management of regional water resources.

## **Respondents**

A total of 12 out of the 15 SADC Member States answered the questionnaire, mostly through their Departments of Water Affairs. Respondents included Directors or Deputies of Water Affairs, Chief Hydrogeologists or Senior Water Technical staff within the Ministry responsible for Water. None of the respondents were female, an indication of the gender imbalance in the water resources management sector.

## **Major findings**

### ***Groundwater Policy***

1. While there appears to be awareness on the importance of groundwater at the technical level within the ministries responsible for water in the SADC Member States, water management practices give little attention to groundwater management issues. There is a greater need for

awareness targeting policy makers at all levels, as well as domestic and large scale users of groundwater on the role groundwater can play towards economic development and poverty alleviation if the resource was properly managed.

- a. *Most member states responded with a Yes to the questions:*
  - i. Does the current policy framework provide adequate groundwater services to the user communities?
  - ii. Do you feel that technical groundwater issues are adequately represented at policy development level?
  - iii. Do you feel that technical groundwater issues are adequately represented at policy development level?
2. The SADC Protocol on Shared Watercourses and the Regional Water Strategy recognize groundwater as an integral part of the Integrated Water Resources Management (IWRM), but incorporating groundwater principles into the IWRM is challenging for many countries in the region due to various constraints including inadequate capacity and knowledge of groundwater's potential towards economic development.
3. Majority of the Member States indicated that they practiced a holistic IWRM but groundwater principles are not adequately integrated in their water resources management programmes due to various challenges. For instance, the legal framework governing groundwater is not fully understood and sometimes not applied correctly. At least eight Member States responded that they have specific legislation to protect groundwater quality but most of them are in the early stages of familiarization and planning on how to benefit from such legislation.
4. Lack of reliable and timely information on the availability, quantity and quality of groundwater in the Member States impacted on the extent to which groundwater and groundwater drought is managed.
5. There is need to develop a generic strategy for drought mitigation with the specific role of groundwater identified. Groundwater is least featured in the drought strategies and only four countries have specific drought management strategies within their water department.
6. There is ineffective maintenance, resulting in a large proportion of groundwater water points remaining inoperative. Many groundwater installations are out of order for significant periods of time before repairs can be affected, especially in rural areas, and the user communities bear the burden of this lack of maintenance. Groundwater managers, policy makers and donors should be made aware of the service provision efficiency and cost effectiveness of borehole pump and water point maintenance in comparison to new installations. An average of 50% of all boreholes in SADC is not working at any given time.
7. Groundwater management and surface water management need to be integrated. In most Member States, surface water and groundwater are managed separately not as a single resource.

### ***Groundwater Knowledge Management***

1. Groundwater data collection is absolutely fundamental for any degree of scientifically viable management of the resource. In many countries, the level of groundwater data collection is completely inadequate, resulting in a poor ability to manage the resource effectively. Where groundwater data is collected information is not often readily useful because the data is not prepared and processed in a way that facilitates groundwater management and allow data users to readily view a variety of factors associated with the condition of the groundwater resource.
2. Groundwater vulnerability mapping should be carried out to ensure better protection of groundwater resources.
3. Borehole and groundwater data collection forms should be improved and possibly standardized across SADC to ensure adequate knowledge of the resource.

### ***Groundwater Awareness***

1. Because of its hidden underground nature, the full potential of groundwater is often misunderstood and significantly underestimated. There are many opportunities where

groundwater can contribute to development goals without endangering or stressing the natural environment, hence the need for more awareness activities on different groundwater management issues.

2. The survey revealed the lack of awareness of both the scale and the nature of groundwater quality problems in the region. Awareness of these issues needs to be raised among both the hydrogeological and the lay community.
3. Groundwater awareness needs to be conducted at all levels from school to policy makers using suitable types of media for targeted groups.
4. The survey singled out television, radio, brochures, posters and newspapers as the best media for disseminating information to policy makers while community meetings, drama, posters and radio were preferred media for awareness activities for rural communities.
5. Groundwater users need to be made more aware of a wide range of information pertaining to groundwater at all levels. All countries have specific groundwater quality issues or problems which are related to either natural or human made factors.
6. Awareness campaigns are required to ensure that groundwater practioners and users are aware of the Code of Good Practice for Groundwater Development in the SADC Region and use it. The SADC Code of Good Practice for Groundwater Development was adopted in 2002 as a guiding instrument on groundwater management processes.
  - a. *Seven out of 12 Member States indicated that they used the SADC Groundwater Code of Good Practice while 3 expressed ignorance on the document.*

### **Gender**

1. Awareness campaigns should be raised to attract many more women into the field of groundwater.
2. The important role of women in groundwater management at water point level needs to be stressed and supported.
3. There is need to improve awareness of the role of women in groundwater use, protection and management and increase their authority and status in this regard.
4. There is need to improve opportunities and support for women in all sectors of groundwater training and management.

### **Capacity Building**

1. The region has inadequate human resources capacity at all levels of groundwater use and management. In the whole region, 56% of the total posts allocated for professionally qualified groundwater personnel and 52% for technically qualified personnel are filled.
2. There is need to establish:
  - a. Training on the use of tools, methods and the data requirements needed for adequate integrated groundwater management.
  - b. Training courses for data base managers.
  - c. Suitable scholarship funding for groundwater study / training, especially for women.
  - d. Short courses for in house training on a variety of topics should be developed.