

PREPARING FOR A NEW NATIONAL GROUNDWATER STRATEGY

WHY A NATIONAL GROUNDWATER STRATEGY?

Groundwater does not play a big enough role as a water resource in South Africa. The Department of Water Affairs (DWA) has assembled a team to assist with the writing of a National Groundwater Strategy (NGS). The aim is to capture the understanding, position and value of groundwater so that it can fulfil its role as equal partner in integrated water resource management and use. The will inform the National Water Resource Strategy, now due for revision.

WHAT HAS BEEN DONE SO FAR?

The focus to date has been on laying the foundations of knowledge and information. The building blocks for the NGS include the existing strategy (DWA 2000) and the Framework for a National Groundwater Strategy (DWA 2007), which identified many key issues.

Reviews covering Groundwater Resource Assessment Methodologies, Institutional strengths and weaknesses, and Capacity and Training have been undertaken and are reported on in this newsletter.

The development of a National Groundwater Strategy is very dependent on inputs from stakeholders. All water related sectors have been contacted and asked for inputs and ideas. This is the first in a series of newsletters aimed at continuing this participation process. You are most welcome to contribute in way you can.

ASSOCIATED PROGRAMMES

In addition to the direct development of the National Groundwater Strategy, associated programmes include:

- (i) The Rollout of the Artificial Recharge Strategy, under the leadership of Dr Ricky Murray, and
- (ii) The Development of Annexures for the Generic Guidelines for Hydrogeological Assessment, Planning and Management for Primary/Alluvial, Crystalline and Karoo Aquifers, under Dr Martin van Veelen.

The 'Framework for the National Groundwater Strategy' (Feb 2007), the Artificial Recharge Strategy (June 2007), the 'Guidelines for Assessment, Planning and Management of Groundwater Resources' (March 2008), and other DWA groundwater publications can be accessed via the websites referenced at the end of this document.

STAKEHOLDER PARTICIPATION

Participatory engagement has come primarily from sectors concerned about the use of groundwater. Users of groundwater have been far more muted in their response.

Key issues have been pulled together in the following list:

- The lack of reliable information on availability and use of the resource
- Wrong perceptions of groundwater as a resource (limited awareness; lack of trust)
- Lack of investment in groundwater utilisation
- Poor resource development planning
- Under-utilisation where groundwater is available
- Over-exploitation of some groundwater resources
- Lack of understanding of the interaction between groundwater and surface water
- Contamination of groundwater
- Failure to monitor availability and use
- Failure to manage
- Poor design, operation and maintenance of municipal groundwater supply schemes
- Lack of skills and implementation capacity



PICTURE ABOVE: Artesian borehole being geophysically logged

Stakeholders also called for the following management approaches:

- Be conservative – and follow the precautionary principle
- Improve information gathering (knowledge base, groundwater database)
- Manage expectations that groundwater is the answer to all our problems
- Transfer knowledge and information to managers and users
- Improve regulation - notably drilling; abstraction control
- Attend to licensing, and provide guidelines and protocols for licensing
- Establish equality between groundwater and surface water (IWRM). Pursue integration and cooperative governance.
- Conjunctive use
- Make use of multi-stakeholder reference groups; allow civil society oversight
- Monitor the resource. Manage aquifers with the attention accorded to dams
- Role of DWA – advisory, regulatory, supportive.
- Communication

REVIEW OF GROUNDWATER RESOURCE ASSESSMENT METHODOLOGIES

Opinions still vary widely on how much groundwater there is in South Africa and how much of this could be available for use. This uncertainty is a major stumbling block to both the credibility and use of the resource. Groundwater has been assessed through Groundwater Resource Assessment Methodology processes known as GRA1 and GRA2, but until now there has been no single agreed approach on assessing availability.

Levels of assessment have been broad, and not helpful to wise management and use at implementation scale. Review of GRA1 and GRA2 methodologies leads inescapably to the need for a further round of assessment (GRA3).

This review finds and recommends that:

- All systems everywhere rely on good data; this is a fundamental need.
- Uncertainties will always exist; these should not stand in the way of groundwater development.
- There is no single accepted way of assessing and managing groundwater, and to fix on a single "cure-all" methodology in South Africa is not appropriate.
- A core part of GRA3 must be an improvement in data density. Data generated by the private sector (including drillers) should be brought into the national groundwater data archive.
- The compatibility of regional groundwater databases must be addressed, along with the improvement in quality of centrally held data.
- A strong and capable groundwater capacity within the Department of Water Affairs at all levels is essential.

AN INSTITUTIONAL ASSESSMENT

This research review provides a high level assessment of the institutional and management challenges with regard to groundwater in South Africa. Recommendations from this assessment are aimed primarily at strengthening the institutional base for groundwater within the Department of Water Affairs, whilst ensuring that the integrated approach to water resource management is maintained.

These include:

- DWA should strengthen its Groundwater Coordinating Committee, with a Departmental champion and a Head Office Coordinator.
- Regions should have Groundwater Advisory Committees.
- Geohydrologists should be recruited and trained to fill all vacant positions, alongside bursaries, internships and improved working conditions (recreating DWA's role in training and skilling the sector).
- Introduction of a programme to raise the profile of groundwater and groundwater professionals.
- Skilling of consulting engineers and municipal water



PICTURE ABOVE: Kuruman Eye in the Northern Cape

- managers in groundwater.
- Upgrading of groundwater data and information systems.
- Introduction of standardised systems for groundwater use in municipalities so as to reduce demands for capacity and support.

CAPACITY BUILDING

A capacity building study has addressed the position with regard to groundwater knowledge, skills and capacity within South Africa and the SADC, with a focus on training institutions (11 in all) and the ability to build new capacity through training and education.

The challenge remains to ensure that:

- South Africa does not develop a National Groundwater Strategy so demanding of capacity that it cannot be implemented.
- Capacity needs are understood and underlined, and that the development of this capacity is addressed in line with the needs identified by the Institutional Assessment

WHAT WILL THE NGS CONTAIN?

A provisional table of contents for the NGS indicates the direction the strategy will be taking:

- Principles and definitions
- Vision and strategic context
- How the sector is organised in SA (Institutional arrangements)

- The resource situation - best understanding of quantity, quality, and availability
- Resource quality objectives - managing and protecting the resource
- Key issues and strategic gaps
- Strategic objectives and priorities
- Management approaches and implementation planning

WHAT LIES AHEAD?

The building blocks are in place and the core task over the next six months is to pull the NGS itself together, taking all the inputs and turning this into a guiding strategy. Stakeholders will be asked to review this.

In future newsletters we would most particularly like aspects of the NGS itself to be introduced and discussed.

Prospective themes include:

- Groundwater and the mining sector
- Groundwater quality; Groundwater - surface water interaction; Conjunctive use
- Strategies as they evolve, such as "Approaches to the registration of drillers" and "Growing capacity in groundwater".



PICTURE ABOVE: Capping an artesian borehole

CONTACT DETAILS

This newsletter is produced under the direction of the Department of Water Affairs (Mr Fanus Fourie, Water Resource Planning Systems)

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WEB ADDRESSES

<http://www.dwa.gov.za/groundwater/documents.asp>

<http://www.artificialrecharge.co.za>

DID YOU KNOW?

Groundwater can be sourced from neighbouring properties. Groundwater does not belong to the owner of the land. Municipalities wishing to supply towns can seek groundwater from any economic distance even where this water must be drilled on private land. DWA will consider the licence application on the basis of the catchment and aquifer resource and not the ownership of the land.