



NEWSLETTER # 8: A Summary Of Project Activities And Outputs

Introduction

In October 2009 the first newsletter in this series, entitled 'Preparing for a New National Groundwater Strategy', appeared. By that time a year had already been spent in this "preparation".

These tasks included:

- A review of groundwater resource assessment methodologies
- An institutional assessment
- A capacity building study
- Stakeholder engagement aimed at unlocking issues

Parallel projects linked to the Groundwater Strategy (or GS) have included:

1. The Rollout of the Artificial Recharge Strategy, and
2. The Development of Technical Series for the Guidelines for Assessment, Planning and Management of Groundwater Resources in South Africa for Primary/Alluvial, Crystalline and Karoo Aquifer

Guided by significant consultative input, the GS promised to provide:

- 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.

The Content Of The Strategy Document

The GS has been constructed around eight key focus areas and each of these is discussed briefly below:

1. Policy, Legislation and Regulation

The National Water Act recognises the place of groundwater in the water cycle and its connection to other water resources. This strategy aims to see that groundwater is fully integrated into all water resource planning processes (such as the National Water Resource Strategy, the Water for Growth and Development Strategy, and Catchment Management Strategies for Water Management Areas) and that the continued development and utilisation of the groundwater resource is funded in line with its importance. The licensing of groundwater use remains a challenge to be resolved through a better understanding of the availability of groundwater and the impacts of its increased use. General Authorisations are one important mechanism.

2. Water Resource Planning

The question of groundwater availability (how much can really and reasonably be put to use) is addressed in this chapter, and in newsletter #5. With a "Utilisable Groundwater Exploitation Potential" estimated at 7 500 million m³/a, and with 2 000 million m³/a currently used, there should be (conservatively estimated) 5 500 million m³/a still available. DWA estimates that at least 3 500 million m³/a is within reasonable reach of users. Planners and licensing officials need to know how much groundwater they have to work with, and the strategy is to ensure that there is confidence in estimates and that these estimates can also be provided at aquifer scale.

3. Human Capacity

There is a national shortage of groundwater specialists. The Department of Water Affairs is fundamental to the status of groundwater in South Africa and should serve as an intentional stepping-stone for the mentoring and development of geohydrologists. The status of groundwater is linked to our recognition of the importance of the resource. A key strategy is to ensure a strong groundwater culture within DWA. This will have a knock-on effect in support of university training.

4. Sustainable Groundwater Management

Groundwater is very widely available but its successful use is entirely dependent on management. This also means monitoring (see newsletter #4). Managing groundwater requires local hands-on technical expertise, and could cost a municipality more effort than if it were to be supplied from a centralised surface water system. But groundwater often comes with the advantages of ready availability, good quality, and lower cost. Groundwater supply to the mining and energy sectors is discussed in newsletter #7. Artificial recharge

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THE GROUNDWATER STRATEGY is now finally in development, and it is an appropriate time to report on content and to dwell upon the future.

Vision

The vision and mission, distilled out of stakeholder processes, were reported on in the first GS newsletter.

The vision is short and sweet and is repeated here:

- Groundwater is recognised, utilised and protected as an integral part of South Africa's water resource.
-

Implementation / Way forward

The GS provides a broad strategic overview of the groundwater situation in the country. Supporting papers provide much of what there is to know about the resource. While there is now some unanimity on the extent to which groundwater can further supplement the national water resource, the need to refine this resource data through the expanded Groundwater Resource Information Programme (GRIP) is the most expensive challenge.

Groundwater Websites

The Department of Water Affairs has a dedicated **GROUNDWATER** website

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

The GS will be accessible through a dedicated site

<http://www.dwa.gov.za/groundwater/NGS.aspx>.

This website also provides access to reports and newsletters produced as part of the process. The documents provide supportive and additional information.

Both the Artificial Recharge Strategy (2007) and the original generic guidelines for Assessment, Planning and Management

is an important management tool that can be used in the replenishment of over-exploited aquifers and, more excitingly, can allow for the storage of surface water underground – thus greatly increasing our total storage capacity. These interesting examples of conjunctive use are discussed in newsletter #6. The GS recommends that DWA establish a groundwater management section to support water services institutions in the operation, maintenance and management of groundwater supply schemes.

5. Institutional Capacity

The strategy requires that strength should be built ‘at the top’ – in this case particularly to reconstitute Groundwater as an entity within DWA, but without losing the benefits of integration. The need is for overall water management capacity, with groundwater a critical component of this. As noted under “Sustainable Groundwater Management” the utilisation of groundwater at local municipal level can be extremely cost effective, but is demanding of institutional and human capacity.

6. Information Management

Groundwater Assessment methodologies have been discussed in a separate paper on Groundwater Research. The National Groundwater Archive must be completed, with privately held datasets included in the national database. Steps to register all drillers, and to capture drilling data, are in process. The expansion of the Groundwater Resource Information Programme (GRIP) to cover the entire country is critical to information gathering, and also one of the major expenses that must be faced.

7. Research

South Africa has had difficulty in losing its isolationist approach to hydrogeology – and in shedding its conviction that it is different from the rest of the world. There is a good research base, but this has been inward looking. There is significant research capability and the strategy is to focus this on key issues facing the country – typically acid mine drainage, rural supply, groundwater recharge, and groundwater / surface water interaction. Most important is that groundwater scientists agree on the size of the resource and its utilisation.

8. Communication and Awareness

Much of South Africa is reliant on groundwater, yet there remains a strong distrust in the resource. This is due on the one hand to occasional failures – all of which can be ascribed to management, and on the other to the visibility and seeming desirability of surface water – stemming from a perception of historic privilege. In fact groundwater is often cheaper, of higher quality, more reliable, and its use takes pressure of other scarce water resources. The communication and awareness strategy calls for these facts to be put on the table so that groundwater can find its rightful place as part of Integrated Water Resource Management.

The Rollout Of The Artificial Recharge Strategy

The Artificial Recharge Strategy was published in June 2007 and is therefore a progenitor of the GS. The rolling out of this strategy has been part of the overall groundwater initiative since 2007. A strategy is of little value without implementation. Artificial recharge (see the AR website and GS Newsletter #6) can be used to restore or sustain aquifers that have been over-utilised, as a way of greatly increasing national storage capacity by using aquifers for the storing of surface water, and as a means of storing and re-using recycled water.

The Technical Series For The Generic Guidelines

The Department of Water Affairs published “A Guideline for the Assessment, Planning and Management of Groundwater Resources in South Africa” in 2008 (DWA, 2008). This guideline (sometimes called the “Generic Guideline” to distinguish it from an earlier guideline aimed at dolomite aquifers) provides general information and templates to all those involved in assessing, planning and managing groundwater in South Africa.

Four new technical series were prepared for the Generic Guideline, covering the four most important aquifer types in South Africa. These were: Karoo aquifers, dolomite aquifers, crystalline basement aquifers and primary (unconsolidated) aquifers. These were designed to provide specific information on these aquifer types, to support and complement the generic information in the DWA generic guideline, for those planners and managers involved with the assessment, planning and management of groundwater in primary aquifers in South Africa. The Generic Guideline is currently being laid out again, incorporating these special technical series.

List Of Other Supporting Papers

The final GS document was designed to be fairly short, and very accessible. It is sometimes forgotten that a number of other reports were produced in the course of the GS work, which helped to shape the final GS document. **A full list of all of the supporting documents and reports developed as part of the GS work, and in support of the final GS document, appears below:**

National Groundwater Strategy: Supporting Reports and documents	No. Pages
Literature Review: GRA1, GRA2 and International Groundwater Assessment Methods	55
A Proposed GRA3 Methodology	35
Case Studies of Groundwater Use in South Africa: Groundwater Success Stories	28
Briefing note for the Water for Growth and Development team	10
Briefing note for the National Water Resource Strategy team	10
Overview of Policy and Law pertaining to Groundwater in South Africa	14
Analysis of the Financial Impact of the Groundwater Strategy	43
Report: Primary aquifers in South Africa	35
Report: Karoo aquifers in South Africa	35

of Groundwater Resources (2008) can be accessed on the DWA website at: <http://www.dwaf.gov.za/groundwater/documents.asp>

Your feedback

Your inputs on this topic, or any other aspect related to the future of Groundwater in South Africa, would be much appreciated.

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Archives

- [Groundwater Strategy Newsletter #7: Groundwater for Mining & Energy sectors](#)
- [Groundwater Strategy Newsletter #6: Artificial Recharge](#)
- [Groundwater Strategy Newsletter #5: Groundwater Availability](#)

Report: Crystalline Basement aquifers in South Africa	48
Technical Workshops: Presentations and Summaries	40
Marketing and Communication: Newsletters and Conference Papers	n/a
Comments and Response Report	15
Capacity Building Report	27

Newsletters

The following newsletters have been produced as part of the GS information process. These newsletters will shortly be available on the **DWA GROUNDWATER** website.

#1 Preparing for a new National Groundwater Strategy

Stakeholder participation, review of Groundwater Resource Assessment methodologies, Institutional Assessment and Capacity Building studies as background for the NGS

#2 Creating an awareness of groundwater

Key communication messages

#3 Planning for water resources – groundwater

A focus on planning processes

#4 The monitoring of groundwater levels

Why we should and how we can monitor groundwater

#5 Groundwater in the national water balance / availability of groundwater

Terminology, availability and use

#6 Artificial Recharge

Introduction to this important groundwater management technique

#7 The Groundwater Strategy in 2010

A summary of project activities and outputs
This newsletter

The Process From Here <needs input>

Add schedules for ...

Publication

Final approval

Implementation

The GS makes recommendations for a regrouping of groundwater expertise with the national office of DWA. Responsibility for the GS and its implementation currently resides with Mr Fanus Fourie, Water Resource Planning Systems, DWA (fourief@dwa.gov.za)

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