

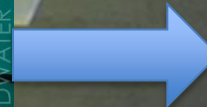


water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

# WRC Dialogue on the Roll-out and implementation of the National Groundwater Strategy

22 November 2016



**NGS**

# Why a National Strategy for Groundwater?

**Experience (own and world-wide): development of effective approaches for groundwater management will require a long term process through which viable national, regional and local systems can evolve.**

**A national strategy is required to:**

- *To let the full role/potential of groundwater towards water security in SA unfold.*
- *To establish a framework within which stakeholders at all levels can become an essential part of good groundwater governance in SA.*
- *To initiate a long-term process of rolling out sustainable groundwater utilization within IWRM.*
  
- *This is fully in line with the direction of the DWA Functional Management Committee 2/2011*

# Global Groundwater Governance - A Framework for Action (2015)

**Partners:** UNESCO, GEF, FAO, World Bank, IAH

## Series of 3 Outcome Documents

- Global Diagnostic
- A Shared Global Vision for 2030
- Global Framework for Action



## Groundwater Governance Project A Global Framework for Action

### The project

The Groundwater Governance project is a 3-year initiative (2011-2014) designed to address emerging global concerns on groundwater resources management.

It is funded by the Global Environment Facility (GEF) and is jointly executed by the Food and Agriculture Organization of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Bank and the International Hydrological Association (IAH).



### Objectives

The project is designed to increase awareness of the paramount importance of sound groundwater resources management to tackle the global water crisis. It intends to identify and promote best practices in groundwater governance as a way to achieve the sustainable management of groundwater resources.

### Expected outputs

The project will develop a Global Framework for Action consisting of a set of general principles and guidelines for policy-makers and stakeholders, including policy options, laws, regulations and customary practices.

A Shared Vision on Groundwater Governance based on case studies, thematic papers and a Global Groundwater Diagnostic integrating experiences and information collected from a series of regional consultations around the world, will inform the design of the Global Framework for Action.

Targeted outreach events will be organized to promote the results of the Project and the Global Framework for Action.



## Where We Are – by end 2016

- A Draft strategy has been produced in partnership with the Water Research Commission;
- It has been widely consulted – in all 9 provinces, with a full range of stakeholder representatives (mining, agriculture, energy, local government, civil society);
- Excellent inputs have been received, giving authority to the Strategy (now as Draft Final);
- **National Stakeholder Consultation - 22 November**
- **NGS approved as a component  
of the *National Water Resources Strategy*  
and start of roll-out – early 2017.**



# Objectives of NGS

*To ensure sustainable, accessible and cost-effective groundwater supplies for human survival and socio-economic development, while maintaining environmental services that groundwater is supporting, in an integrated development approach.*

- improved **rural water supplies** (groundwater and other local sources)
- sustainable **small town / village supplies** (local scale IWRM)
- improved water security in **urban development (conjunctive use)**
- expanded irrigated agriculture, especially **for small-scale and supplementary irrigation** (sustainability and cost-effectiveness)
- **new groundwater sources** in increasingly complex locations (for industrial / mining supply in situations of increasing water scarcity)
- **Protection and conservation** of groundwater resources and its vital services, including vital ecosystem services, **by all sectors of society.**
- **An appropriate groundwater governance system**  
**to ensure sustainable resource utilization**

# Groundwater Governance

## Principle

*The unique, widely distributed groundwater resource, with its open access to a large number of users and a wide range of impacts, requires local level management of the shared groundwater resources within an appropriate enabling and supporting environment.*

## **Internationally recognized groundwater management approach**

*“National facilitation of local actions”*

## **Groundwater Governance Framework**

**Local action level** (individual users, local collective management institutions, relevant regional/local public agencies)

**National / Strategic level** (coordinating, regulating and supporting)

**Enabling environment** (policy; capacity)

# NGS Groundwater Governance Framework

<b>National Level (enabling environment)</b>								
0. Enabling legislation and strategy (is in place) 1. Stakeholder-driven development 2. National Groundwater Leadership								
<b>National / Regional / Basin Level</b>								
3.	4.	5.	6.	7.	8.	9.	10.	11.
Regulatory Framework	Groundwater Protection	Sustainable Utilization	Institutional Development	Awareness, Skills & Capacity	Redirecting Finances	Planning and Development	Information Management	Regional / International Partnerships
<i>Implementing regulations of aquifer level</i>	<i>Protecting aquifer resources</i>	<i>Achieving aquifer sustainable utilization</i>	<i>Establishing local institutions</i>	<i>Building the local awareness skills &amp; capacity</i>	<i>Collecting &amp; utilizing local funds</i>	<i>Planning and developing shared aquifer resources</i>	<i>Monitoring and managing aquifer information</i>	<i>Enhancing aquifer management regionally and globally</i>
<b>Local Action (12)</b>								

# Regulated Resource Development and Protection

(Theme 3 & 4)

## Policy & Legislation

Anchor the shared understanding of groundwater governance in appropriate policy and regulations.

*Groundwater use authorization streamlined;*

*Regulated groundwater use (specific regulations for all sectors; priority for domestic use;*

*Regulation of the groundwater industry (mix of voluntary and national regulation)*

## Groundwater resource protection

Develop and maintain approaches for pro-active protection of groundwater and aquifer-dependent ecosystems

*Public awareness (key instrument of precautionary approach);*

*Establish groundwater in Resource Directed Measures (RDM);*

*Regulation and prohibition of **land-based activities** (develop suite of regulations and guidelines / best practices to underpin these)*



# Stakeholder Involvement

## Regulated Resource Development and Protection

- A national groundwater policy that lays down **norms and standards** to guide local management practices;
- **Groundwater policy coordination** in terms of in terms of integrated land, water and environment management policy;
- **Cross-sector collaboration** and intergovernmental processes to influence action against pollution;
- Development of municipal **by--laws** that will incorporate groundwater management;
- **Sectors to regulate drilling** within their sector (eg agriculture, municipal);
- A special focus on **monitoring and achieving compliance** with regulations.

# Sustainable groundwater resource utilization

## Theme 5

Translate practical understanding of groundwater resources into appropriate guidance material to fully capacitate those responsible at all levels for sustainable groundwater resource utilization, covering planning, development, management and protection.

*Focused **guidelines**;*

***Training** programmes (in support of guideline implementation);*

*Ongoing **auditing and awareness-raising** (through focused material; use of updated BlueDrop assessment);*

***Local Hydrogeologist** for District and Local municipalities (if necessary in terms of appropriate regulation.)*

# Stakeholder Involvement

## Sustainable groundwater resource utilization

- Inclusion of groundwater into different sectors' own guidelines / best practices (to speed up implementation).
- Communities and operators taking ownership through monitoring their groundwater / incentives where good groundwater management is practiced.
- Different sectors, in particular municipalities to establish own information systems for their groundwater infrastructure and resource status (eg drilling and pump test data) to allow for professional support of their operations.
- Continuity of involvement of consultants in projects – from implementation (well field development) to monitoring and operation (initiated through the licensing process and appropriate tender specifications).

# Development of Capacitated Institutions

Theme 6 & 7

## **Institutional development**

Facilitate and support the development of appropriate institutions that will allow local level participative management of groundwater resources.

*Local participative management institutions (aquifer management committees and WUAs)*

*National sector support for local management (within-sector support structures and processes)*

*Capacitating municipalities*

*Compliance with existing government requirements (compliance monitoring; Blue Drop)*

## **Water sector skills and capacity**

Develop and maintain skills and capacity for the sustainable development and management of groundwater resources at all levels throughout the different water use sectors

*WRC leveraging role (build networks of people and technology);*

*SA Groundwater Center of Excellence (industry-supported virtual centre);*

*Private sector role (much larger role in education and training; Groundwater Division a mobilizing role)*

# Stakeholder Involvement

## Development of Capacitated Institutions

- Make **Catchment Management Agencies** (and catchment management strategies) central to NGS roll-out;
- WUAs could play a major role at local level in integrated management of the resource if funds are redirected to them / work strategically with the **Association of WUAs**;
- Qualified **hydrogeologists** should be a requirement for any groundwater tender; Districts should be capacitated through hiring of hydrogeologists who will overlook the whole district's groundwater requirements;
- There needs to be an emphasis on the **training** of different categories of workers dealing with groundwater source development and operation;
- The institutes of higher education should align their **curriculum** to accommodate groundwater management.



# Integrated Financing and Planning of Resource Development and Use (Theme 8 & 9)

## Groundwater resources planning and development

Achieve integrated groundwater resource planning at national, regional and local levels that will allow for sustainable resource development and management

*Catchment management strategies (integrated focus on groundwater);*

*Best Practice Guidelines (for all sectors);*

*Drought risk management plans (during and ahead of droughts);*

*Groundwater development (Systematic groundwater resource assessment and development programmes)*

## Redirect finances

Redirect incentive policies and public expenditures impacting groundwater within different sectors to achieve a combined, much stronger focus on sustainable groundwater management.

*Align groundwater finance (between different sectors);*

*Invest in good gw governance ( not compromise basic groundwater management functions).*

*Legal instruments and regulatory provisions (must be matched by the means required for their implementation); (Charging for groundwater use (improve efficiency)).*

# Stakeholder Involvement

## Integrated Financing and Planning of Resource Development and Use

- The groundwater priority must work through into all instruments of planning and financing (eg Treasury; IDPs)
- Stakeholders must be systematically involved in drawing up and reviewing all basin and aquifer plans;
- Aquifer management for shared aquifer resources should be in sector plans for incorporation into regional spatial development plans;
- Alignment is important between sectors (eg no farming subsidies in groundwater-stressed areas)
- A better understanding of the cost and investment requirements of groundwater supplies is essential;
- Wherever money is spent on groundwater there needs to be provision for groundwater skills development.

# Groundwater Information Management

## Theme 10

### Groundwater Information Management

Grow and maintain the groundwater resource **knowledge base**, focusing on the resource itself, its socio-economic role and its appropriate management.

Develop and maintain effective and efficient (smart) information and **information systems** to undertake groundwater development and management at different levels

*Expand national groundwater data archives (with data from **private consultants and drillers** as well as related data from **other institutions**);*

*Special attention to verified **groundwater use** information;*

***Harmonization** of data bases / information systems;*

*GIS supported **information service** at municipal and aquifer management level*

# Stakeholder Involvement

## Groundwater Information Management

- **Stakeholder groundwater data collection** should be in terms of best practice provisions as well as water use license conditions;
- A **comprehensive groundwater monitoring strategy** (quantity, quality, use and integrated with surface water) should address **monitoring responsibilities** of all sectors;
- Provision of **privately owned data** to the nationally-shared system needs to be achieved, if necessary enforced through regulations and fines;
- There should be an **accessible database** in which all sectors can record groundwater data;
- Groundwater **information needs to be focused at the local level** for practical management and for gaining of industry benefits from its use;

# Regional and international partnerships

## Theme 11

Actively participate in and grow appropriate regional and international partnerships towards groundwater resource understanding and optimal utilization, including transboundary resource management

*SADC and Africa (SA an active role in the SADC Groundwater Programme and AMCOWs Africa Groundwater Commission)*

*Basin Commissions (take groundwater fully on board)*

*UNESCO International Hydrological Programme (national leadership from DWS)*

*International Association of Hydrogeologists (IAH) (facilitate widespread membership of South African groundwater professionals;*

*Groundwater Division (should become sector leader – coordination for scientific links with Africa)*



# Local Action

## Theme 12

**Aquifer management** – joint management of shared aquifer resources by stakeholder organized in appropriate local management bodies within available plans, regulations and guidelines.

**Action by municipalities** – a professional groundwater supply service and source protection

**Action from utilities** - source protection, waste water management;

**Farmers and larger agricultural ventures** – institutionalized good practices

**Mines / Energy producers / Industries** – institutionalized good practices

**Civil Society** – raising public awareness, taking community initiatives and acting as watchdog.

**Media** – Unique communication role in society; create public discussion

**These various roles and responsibilities need to be established in the roll-out action plans for the NGS.**

# Enabling Strategies

## 1. Stakeholder-driven development

Continuously improve stakeholder understanding and collectively agree on and work within an expanding framework of local level participative management and 'good' groundwater governance.'

- *A long-term process of to **step-wise institutional development** and the wider implementation of improved groundwater resource management*
- *A major **ongoing awareness campaign** at all levels during the long-term process.*
- *A **Groundwater Trust** through which the groundwater sector / industry can be mobilized to develop and lead a multilevel awareness and education campaign.*
- *Need for **departmental task team** to drive implementation process of the strategy and this should involve **groundwater champions from all sectors (stakeholder core group)**;*

# Enabling Strategies

## 2. National Groundwater Leadership

Develop and maintain the national groundwater champion that must hold the overall groundwater governance framework together and **facilitate and support its roll-out, smooth functioning and growth.**

- *The groundwater leadership in terms of **coordinated resource planning, sustainable development and protection, policy, regulation, research, training platform, central database – with one point of entry for users.***
- *Foresee a **‘governance center’** which would include the DWS Regions and could draw on the resources of other institutions to fulfil the evolving, wide range of its responsibilities.*

# A Planned Roll-out of NGS

Early inclusion of NGS roll-out in:

- national plans of different sectors
- groundwater plans of each CMA
- WSDPs of each Municipality

This should result in local institutional development

Support the roll-out systematically with:

- Resource status monitoring / Regulations / Guidelines / Awareness-raising / Capacity development

Ongoing stakeholder participation:

- held together by **stakeholder core group** and through **ongoing communication**

# Key Deliverables in 1<sup>st</sup> Year of Roll-out

	The national groundwater champion designated and developed	2
	Stakeholder communication initiated with a website in this regard (linked to the Community of Practice - below)	1
	The National Stakeholder Core Group established and functional	1
	A Groundwater Governance Strategic Action Plan, indicating critical deliverables and respective stakeholder responsibilities, developed	1
	A Groundwater Governance Community of Practice established as a long-term process for achieving a stakeholder-driven NGS roll-out initiated (potentially through a WRC programme)	1
	A 'groundwater awareness-raising through stakeholders' strategy developed, including the media	1, 12
	Groundwater sector organisation in response to the participation requirements (Groundwater Division; Groundwater academic institutions) underway	1
	Plans for groundwater source protection by municipalities in place (with WRC support)	4
	A prototype groundwater management plan developed for one CMA (possibly as a WRC consultancy)	9
	A strategy for a new, more detailed, phase of groundwater resource assessment in place	10



# Key Deliverables in Years 1-3 of Roll-out

	A Groundwater Code of Practice (widely understood national policy) developed cooperatively	3, 4, 5
	A groundwater management plan for each CMA developed (per example – above) as basis for overall roll-out to local level	9
	Introduction of groundwater sustainable utilisation into various sector development plans as the basis for the roll-out of further sector actions.	9
	Promotion of relevant available guidelines ongoing and commissioning of critical new ones underway	5
	Groundwater use verification completed country-wide	3
	A country-wide groundwater pollution assessment undertaken	4
	A suite of groundwater regulations developed and publication initiated	3
	The first local shared aquifer management institutions in place in all nine CMAs	6, 7
	The new phase of regional / local groundwater resource assessment underway	10
	A National Groundwater Information System in place, adapted and expanded with participation of stakeholders	10
	A groundwater capacity building strategy developed and implementation underway	7
	A groundwater education & training programme, initiated jointly by the groundwater academic and technical institutions, for stakeholders at all governance levels	7
	Indicators of 'groundwater sustainable utilisation and good governance', linked to the Water & Sanitation SDGs, developed. (See Table 3-3 examples)	11
	District / Local Municipalities have started to appoint/contract hydrogeologists to manage water supplies from groundwater and shared aquifers.	5, 6, 12

# Ongoing Communication

- Communication supporting vertical and horizontal integration with different sectors at all levels of management is **essential**;
- **Sharing of best (and poor) practice** as essential part;
- WRC is suggesting the possibility of a **Community of Practice programme** to facilitate the NGS roll-out.

# Your Comment / Input:

## towards an effective & efficient NGS roll-out

- *Comments on aspects of NGS from your sector perspective?*
- *Essential strategy aspects for early roll-out / establishment?*
- *Available institutions / processes for **between-sector** coordination (national / local)??*
- *Available institutions / processes for **within-sector** coordination and communication (national / local)??*
- *Composition and functioning of NGS Stakeholder Core Group?*
- *Groundwater governance unit – special requirements??*