**TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT**

**THEME:** Water Availability

**TITLE:** Development of groundwater management plans and a national planning framework for priority aquifer systems in South Africa

**ToR:**

## 1. Rationale

Groundwater is a critical but underutilised component of South Africa's water supply system, particularly in rural and drought-prone areas. Despite its importance, groundwater remains insufficiently integrated into catchment-level planning and national water resource strategies. There is currently no consistent, nationally accepted approach for developing groundwater management plans. As a result, implementation is fragmented across regions, with varying methodologies and levels of detail. This limits the ability of regulators and practitioners to make informed, evidence-based decisions and leaves key aquifer systems vulnerable to over-abstraction, declining water quality and inefficient use. Increasing pressure from climate variability, land-use change and growing water demand is intensifying the need for structured and proactive groundwater management. At the same time, data availability and quality remain uneven across regions, posing challenges for effective planning and implementation.

To address these challenges, there is a need for a practical, adaptable and standardised framework for groundwater management planning that can be applied across different hydrogeological and institutional contexts. Such a framework must be supported by pilot applications to demonstrate feasibility, scalability and relevance to South African conditions. This project aims to develop a national groundwater management planning framework, supported by pilot groundwater management plans for selected aquifer systems. The framework and pilot plans will be co-developed with key stakeholders to ensure practicality, policy alignment and readiness for implementation.

## 2. Main Objective

To develop a practical and adaptable national framework, supported by pilot groundwater management plans, to enable consistent and effective groundwater management across priority aquifer systems in South Africa.

*Specific Objectives*

1. To review and synthesise national and international groundwater planning approaches and tools relevant to the South African context.
2. To identify and prioritise aquifer systems and catchments requiring groundwater management plans based on water security, vulnerability and strategic importance.
3. To co-develop 2–3 pilot groundwater management plans in partnership with Catchment Management Agencies (CMAs), municipalities and DWS regional offices, representing a range of hydrogeological and climatic conditions.
4. To assess the availability, accessibility and quality of groundwater data in selected pilot areas, and identify practical approaches to address data limitations.
5. To develop a replicable national framework/template to guide the consistent preparation of groundwater management plans across regions.
6. To incorporate key considerations, including climate resilience, recharge estimation, land-use impacts, groundwater-dependent ecosystems and institutional roles, into the planning approach.

7. To engage stakeholders at local and national levels to ensure alignment, legitimacy and implementation readiness.
8. To produce policy guidance and recommendations to support the integration of the framework into regulatory and planning processes.

## 3. Expected Deliverables

1. Desktop review report of national and international groundwater planning approaches
2. Prioritisation matrix for aquifer and catchment selection
3. Co-developed pilot groundwater management plans (2 case studies)
4. Data availability and gap assessment report, with recommended approaches for addressing limitations
5. National groundwater management planning framework/template
6. Stakeholder engagement and learning reports
9. Policy and implementation guidance brief for DWS

**Total Budget:** R 1 500 000
**Year 1:** R 200 000
**Duration:** 2 years