TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

THEME :	**Water Availability**
TITLE:	**What are the opportunity costs of not being able to access hydrological data in South Africa?**
TOR NUMBER:	1010011

Rationale

Access to reliable and comprehensive hydrological data is fundamental for informed decision-making in water resource management, disaster preparedness, agriculture, spatial planning, and industrial development. Hydrological data and information encompass quantitative and qualitative data on the movement, distribution, and quality of water within the water cycle, including surface water, groundwater, and atmospheric processes. This data is essential for managing water resources, predicting extreme events, and supporting environmental and infrastructure planning. Despite its importance, significant challenges persist, including limited data availability, fragmented datasets and coordination, lack of real-time access, and barriers related to cost, intellectual property, or technical capacity. These limitations hinder the ability to monitor and predict water availability, manage flood and drought risks, ensure equitable resource allocation, and achieve sustainable development goals.

In South Africa, a country marked by extreme hydrological variability and increasing pressures from climate change, population growth, and industrial demands, the inability to access robust hydrological data exacerbates vulnerabilities. Lack of data contributes to increased risks of mismanagement, inefficient infrastructure investment, and failure to anticipate and respond to water-related disasters. The absence of accessible hydrological data and information has direct and indirect costs. Direct costs include financial losses resulting from delayed or ineffective responses to floods, droughts, and other water-related emergencies. Indirect costs are reflected in broader socio-economic and environmental impacts, such as reduced agricultural productivity, diminished industrial growth, impaired public health, and degraded ecosystems. The lack of accessible data undermines opportunities for research, innovation, and private sector involvement, which could otherwise contribute to improving water security.

This position paper will provide a comprehensive analysis of the costs of inaccessibility, highlighting the financial, social, environmental, and developmental implications. It will also explore the economic, technical, and institutional solutions required to address these challenges, guiding policymakers, researchers, and stakeholders in prioritizing investment in hydrological data systems.

Main Objective

To assess and quantify the costs and implications of the inability to access hydrological data, providing evidence-based insights to inform policies, investments, and strategies for improved data accessibility in South Africa.

The Specific Objectives are to;

1. Evaluate the current state of hydrological data accessibility in South Africa
2. Examine the implications of data inaccessibility on sectors such as agriculture, water and sanitation, disaster management, energy, and urban planning
3. Quantify the direct and indirect costs associated with inaccessible and inadequate hydrological data
4. Investigate successful models of data-sharing platforms, public-private partnerships, and open data initiatives from global and regional contexts
5. Propose strategic interventions to improve hydrological data access and integration into decision-making processes

Expected Deliverables

1. Comprehensive position paper detailing findings and recommendations.
2. Executive summary for policymakers and stakeholders.
3. Workshop or stakeholder engagement to validate findings and recommendations.
4. Policy briefs for decision-makers.

Total Budget: R 600 000.00 (Including VAT)

Duration: 1 year