

TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

THEME : Water Availability
TITLE: Setting-up an operational water resources accounting system for SA.
TOR NUMBER: 1010008

Rationale

Globally, the approaches to water resources assessment have evolved over the last 30 years to produce data and information for use in water governance and management within the framework of water accounting. South Africa is one of the few developing countries to have developed a unique water resources accounting (WRA) framework for assembling multiple data sources to provide the integrated information that can support water governance and management. This system covers the water quantity (e.g. water budget, and availability), water quality, the water supply and use, and water-related ecosystem services. During its development, the system has been linked to other types of environmental information and, in particular, ecosystem accounts and Statistics South Africa's System of National Accounts (SNA) for economic management and policy.

The WRA system was developed over the last 8 years and it is ready for implementation. The development of the system entailed developing a generic modelling framework for the hydrological assessment, the development of a method to delineate Quaternary catchments into sub-Quaternary catchments (or Quinaries) and generating national datasets for Quinaries, collation of all datasets required to generate water resources accounts, etc.

Main Objective

The main aim of this project is to set-up an operational water resource accounting system that provides spatially and temporally consistent summaries of the country's water resources, based on measured and modelled data, to promote informed, sustainable and equitable use of these resources. Specifically, the WRA system will estimate the water availability and sectoral water use components at a sub-Quaternary catchment scale, and to determine water resources accounts on a monthly and annual basis. The system will compute water balances, quantify all water fluxes in the hydrological cycle and to distinguish between (i) use by different sectors, (ii) different hydrological components (i.e. green and blue water), (iii) beneficial and nonbeneficial water use, and (iv) consumptive and non-consumptive use.

The Specific Objectives are to;

1. set up the WRA system throughout South Africa,
2. conduct hydrological assessments at a local or sub-Quaternary scale,
3. generate water resources accounts monthly and annually,

4. determine water resources predictability/forecasting in the short to medium term in view of climate and landuse change.

Expected Deliverables

1. A report on Water Resources of South Africa (e.g. water balance);
2. Water resources accounts (including hydrological assessment for groundwater and surface water, water quality, water use per sector, using, e.g. WA+ framework, etc.);
3. Datasets “accreditation” as required for StatsSA’s SNA;
4. Monthly or quarterly water use and water quality reports;
5. Hosting arrangements for the WRA system.

Total Budget: R 8 000 000.00 (Including VAT)

Year 1: R 2 000 000.00 Including VAT)

Duration: 5 years