

## **An Overview of Water Resources Systems Modelling in South Africa**

**Caryn Seago** and Ronnie Mckenzie  
WRP Consulting Engineers, Pretoria, South Africa

**Abstract :** Because of their integrative powers, predictive abilities and demonstration utilities, computer-based decision support models can play a major role in the operations of all Water Management Areas. The objective of water resources system analysis is to provide analytical decision-making tools for optimum utilization of available resources and to facilitate development planning to satisfy the increase in water demand. In the South African context, the water resources systems analyses are based on generated stochastic streamflow records in addition to the normal available historical streamflow time series. This paper presents the approaches to and methodologies used for water resources modelling in South Africa. It covers the range from the development of hydrology to the determination of system yield and then the planning and operation of a water resources system. It is believed and will be shown that the technologies applied in South Africa are state of the art and comparable with world wide practice.