

Water resources and water management in the Bahurutshe heartland

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Abstract

With this study a brief descriptive survey, covering the period from 1972 to the present, of the water resources in the Lehurutshe district, formerly part of Bophuthatswana and now part of the Zeerust district of the North-West Province, is given. Both surface water bodies (rivers, catchments, drainage systems, wetlands, pans, dams and reservoirs) and groundwater resources (aquifers, dolomitic eyes, springs and boreholes) of Lehurutshe are discussed in terms of the quantity and quality of their water yields. Water provision and water use are assessed and observations made about water management in Lehurutshe in the context of shifting hydropolitical objectives in South Africa.

Keywords: Lehurutshe, surface water resources, groundwater resources, water management

Introduction

In the north-western corner of South Africa, bordering Botswana, lies a piece of land that has been occupied for at least the past 300 years by the Bahurutshe, a section of the Tswana people. During the apartheid period this hilly terrain, covering just over 250 000 ha, formed a block of the Bophuthatswana homeland and was named Lehurutshe 1 District (Bophuthatswana Region Planning book, 1974b: Map 4.1). It is now part of the Zeerust district of the North-West Province and is situated on the western side of the semi-arid Bushveld and Bankenveld of the Marico region. Figure 1 indicates where Lehurutshe is located in relation to the Zeerust district, the Crocodile (West) Marico Catchment (one of 19 catchments identified in South Africa) and the rest of South Africa.

The western part of South Africa, where Lehurutshe is located, is arid to semi-arid, receiving rainfall in the summer months when the evaporation rates are at their highest. Lehurutshe has a mean annual precipitation (MAP) of approximately 560 mm (Department of Water Affairs, 1986) and the evaporation rate of 1 600 to 1 800 mm/a (Barnard, 2000) exceeds rainfall by about 300%. Because of the high evaporation rate and the porous nature of the terrain the mean annual runoff (MAR) is very low, only about 3.1% of the precipitation (Department of Water Affairs, 1986), which is among the lowest conversion rates in the world (Turton et al., 2003). Drought statistics show that between 1920 and 1984 relatively severe droughts occurred for 22 years out of 65, i.e. about one year in every three on average, in the Lehurutshe area (Department of Water Affairs, 1986).

Water is the most fundamental and indispensable natural resource. As a result of the growing world population and the drop in the renewable freshwater supply per person (Turton et

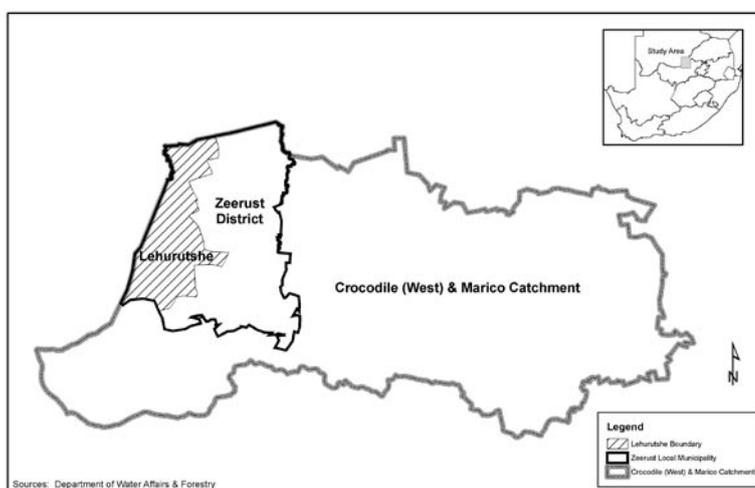


Figure 1
Location of Lehurutshe

al., 2003) there has been an increasing awareness of the value of water resources, which has also led to a readjustment of priorities with regard to water supply. Since the 1970s, when the Mar del Plata Action Plan and UNESCO's first International Hydrological Programme were adopted (Department of Water Affairs, 1986), the global focus has been on the efficient, equitable and sustainable use of water. Wise management of water on a global, regional, national, local and individual basis is of the utmost importance.

When one looks at the water situation in South Africa, it becomes clear why the country's water resources are so precious. Located in the drought belt of the globe South Africa has very limited water resources and is ranked as one of the twenty most water deficient countries in the world (Ashton & Haasbroek, 2002). The country does not have sufficient freshwater nationally to meet current and future needs and is expected to reach the limit of its economically usable land-based water resources sometime between 2020 and 2030 (Allan, 2002; Ashton and Haasbroek, 2002). At the start of the new millennium

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