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The Drakensberg Escarpment as the great supplier of water to South Africa

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ABSTRACT:

During the past century, South Africa focused on engineered systems (dams, inter-basin transfers, tunnels, and pipelines) to safeguard its water supply. National water security in South Africa in the future is now expected to depend on an ability to plan development compatible with mountain catchment ecological infrastructure (Nel et al., 2013). Using existing infrastructure, since 1994, the South African state has provided access to basic water services for 9 million people, mostly those concentrated in the urban areas. The Free Basic Water policy of 2001 aimed to provide the first 6 kL of water free to all households. In 2013, DEA reported that during 2006, 3.3 million people still lacked access to adequate, clean water supplies, with another 15.3 million being without access to sanitation services at that time (DEA, 2013, p. 21). In terms of the Great Southern Africa Escarpment (Fig. 1.1), key water resource areas include the Eastern Cape Drakensberg (also called the Cape Midlands Escarpment (CME)), the southern Maloti-Drakensberg, and Northern Drakensberg [including the eKangala Drakensberg and the Mpumalanga Drakensberg (MD)] (Nel et al., 2013). In South Africa and Lesotho, these mountain catchments have now been designated as strategic water areas (Nel et al., 2013). These strategic water source areas together contribute 50% of the region's water supply, captured from less than 8% of the land surface area. The Drakensberg/Maloti escarpment segment of the Great Escarpment of Southern Africa forms a major catchment that supplies water to large parts of southern Africa including Swaziland, Mozambique, and Namibia (Nel et al., 2013; Tyson, 1986), while the other Drakensberg segments are important locally. The biggest catchment is that of the Orange-Senqu River some 100,000 km2 in extent and draining from the Drakensberg/Maloti mountains westward to the Atlantic Ocean. In the modern era, long-distance transfer of water to several urban and irrigation farming areas has been possible, particularly from the Senqu-Orange

catchment of the Maloti-Drakensberg (de Villiers, 1996). The entire Drakensberg thus forms a critical resource for southern Africa, not only because it provides so much of the water but also because several international cooperative initiatives secure water from this mountain range. This chapter focuses on the water dynamics and physical hydrology of the entire Drakensberg, management and uses of the water from the Drakensberg, and a perspective on the way forward for an already-overused water resource in a region that is generally water deficient. The discussion also considers long-term changes in these processes. The aims of the chapter are as follows: 1. To summarize the readily available knowledge about the factors affecting water supply from the Drakensberg. These include climatic, socioeconomic, as well as water governance issues. 2. To identify the critical deficiencies with respect to the sustainable management of water from the Drakensberg escarpment. 3. To propose ways of addressing the science and governance deficiencies affecting water from the Drakensberg in order to promote sustainable management of this resource.