

Laura Barrett. An investigation of the rainfall-related and human-induced risk rivers that contributed to acute urban water scarcity: A case study of the urban water scarcity in the George Municipality from 2009 – 2010 (Mphil in Disaster Risk Sciences, 2012)

In 2009, severe water scarcity in the Eden District resulted in seven municipalities being declared drought zones”. This was largely attributed to the lowest rainfall recorded in 132 years and widely recognised as a climate change problem (SABC News, 2009). The Eden District administrative centre, the municipality George, was also identified as significantly drought affected with water storage declining in the Garden Route Dam to 26.86% of Full Capacity Storage (Department of Water Affairs, 2010). The declaration of the drought emergency in South Africa’s Eden District in 2009 illustrates the increasing episodes of urban water scarcity in rapidly growing urban centres in Africa that are also exposed to climate variability.

Specifically this study sought to investigate the atmospheric and human-induced risk drivers that contributed to the acute urban water scarcity in the George Municipality from 2009 - 2010. Such understanding is viewed as central to sustainable urban development in rapidly growing Africa cities already exposed to climate extremes.

The methodology used for data collection and analysis comprised a “mixed-methods” research design that incorporated both quantitative data, including rainfall, population, urban water consumption and recorded dam levels for the Garden Route Dam and qualitative information sourced from drought workshops and the district and provisional disaster management centres.

The findings of this study suggest that the disaster event was a meteorological and hydrological drought. They also point to a downward trend in rainfall, highly variable rainfall and shifting seasonality in the George Municipality. Garden Route Dam storage levels show an overall downward trend and Garden Route Dam consumption levels show the opposite, with an increasing trend over the last ten years.

Severe weather events, management interventions and an increase in rainfall are the three variables that contributed to the end of the drought event. However, the challenges facing the municipality are complex and highly variable. The results indicate the need for improved understanding and implementation of integrated water resource management.