

**ASSESSMENT OF WATER BALANCE FOR  
MT. MARSABIT SUMMIT //**

**BY**

**MATHEW LOLE LOLTOME**

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**UNIVERSITY OF NAIROBI  
FACULTY OF SCIENCE  
DEPARTMENT OF GEOLOGY.**

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## ABSTRACT

The Marsabit summit is an area in northern Kenya, of about 160 km<sup>2</sup>, bounded by longitudes 37°50' E and 38°02' E and latitudes 2°15' N and 2°20' E. The summit is part of a larger Marsabit shield, which has a surface area of approximately 8,300 km<sup>2</sup> with altitudes ranging from 610 m to the west to 1,710 m to the east.

The mountain summit is a national reserve area harbouring a fairly large population of wild animals, human population, livestock, and supports a forest on the eastern slope. In the late 1970's, about 5,000 people inhabited Mt. Marsabit summit area. However, after the collapse of the Ethiopian and Somalia governments, in the early 1980's, there was a rapid influx of people into the area. These people settled permanently and the population today has risen to over 30,000 people. The new settlers introduced farming practices and established urban centres. Population expansion and new practices, tremendously, increased water demand as opposed to that of traditional pastoralism originally practiced in the area.

The main sources of water have remained the same while water demand is on rapid increase since early 1980's. It is expected that more water will be required to meet the increasing water demand in the near future. The study carried out investigations on the variations of the summits water balance resulting from increasing water demand against constant supply from available water sources over the years. To obtain the water demand variations, estimates and projections of population growth of the study area were made. The total available water was determined from the yields of the available sources.

The finding from the study been organized into three main sections, which dealt with water demand estimates and projections, available water, and the discussions and interpretations of results.

The study established that the water balance is at a level, which cannot support the area's water requirements, i.e., water demand is greater than the total yield from the available water sources. This water imbalance is reflected by the historical trend of water ration and import of water by trucks from the neighbouring areas. The study explored the distribution of water sources and their yields and pointed out possibilities for alternative water sources development strategy to help acquire and maintain a water balance that can support and sustain the area water requirements.