



## **CLIMATE CHANGE CHARACTERISTICS OF THE MOUNTAINOUS REGIONS OF FREE STATE**

Mountainous regions are more vulnerable to climate change due to their high sensitivity to rainfall and temperature variations. Free State is predominantly mountainous over the northeast where the region forms the western extension of the Drakensburg Mountains. As such the sub region should be more vulnerable to the changing climate than the rest of the State and southern Africa as a whole. In this study, we use observational and reanalysis data to determine how the climate of the Free State mountainous areas have been changing relative to the rest of Southern Africa. This is achieved through analyzing how the impacts of the dominant climate drivers of southern Africa such as the Angola Low, ENSO, Indian Ocean Dipole and the Southern Annular Mode have been regionally modified by the highlands of the Free State. Establishing the current relationship of the region's climate and that of its drivers will assist in projecting how the region may respond to the future changes. As such our component of the research informs on the broader objective of the Afromontane Research Unit (ARU) which seeks to maximize the relationship of the communities living on the highlands of Free State and their environment. As such our research outputs will form the basis on which to determine the vulnerability and adaptation options of the various components of the ARU, especially the socio-economic aspects of the sub region.