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Climate change and mining development impacts on residential water security in South Africa

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Abstract

Social science research on mining and climate change and associated impacts on water resources particularly for the developing world has been limitedly explored. Climate change is expected to make water insecurity in rural areas more severe as weather patterns become unfavorable. The extent to which the mining sector is able to reduce its impact on water resources and adapt to climate change will have implications for host communities. This paper explores the relationship between climate change, mining development and water security and how this places rural communities in a position of binary risk for water security. This paper focuses mainly on the Somkhele rural community located in Northern KwaZulu-Natal, a climate change-induced water scarce area. Despite drought, mining operations continue and there is a proposal for a new mining development. Semi-structured interviews were used to collect data from key social actors (i.e. residents opposing mining development and those already burdened with mining operations). Additionally, a questionnaire was used to ascertain 424 household views on the impacts of climate variability and mining impacts on livelihoods and water. Results indicated an interplay between climate change, mining impacts and water (and food) security. Development must be implemented in an integrated and holistic manner that contributes to sustainable development and does not impact on water resources. A number of recommendations are made to address water security in the region.

Keywords: climate change, water security, mining, drought, South Africa