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IMPLICATION OF SURPLUS AND SHORTAGE OF WATER ON THE AFRICAN SOIL BETWEEN 1980 - 2020; A CASE STUDY OF ALGERIA, ANGOLA AND ZIMBABWE

Abstract

Climate Change and Global Warming phenomena are impacting Earth's surface temperature. As water plays a crucial role in every form of life, concerns about its scarcity are growing across the globe. The main goal of the research is to study how Earth Observation data have documented the progressive impact of adverse changes in the environment, by analysing both, the surplus and the lack of water on the African soil. Our study concentrates on three countries, Algeria, Angola and Zimbabwe.

Due to worrying UNICEF reports that highlight 44% of Angolans still not have access to clean water, while for Zimbabwe, throughout 2019 and 2020, the rainfall level has been less by 25%, according to the Climate Change Management Department in the Zimbabwean government, we aim to contribute to developing a new proactive approach to better understand and assess the past impacts of droughts and inundations. We aim to use the past 40 years of Earth Observation data archive, USGS Landsat Multispectral imagery, between 1980 to 2015, and Copernicus Sentinel-2 satellite imagery, between 2015 - 2020.

Existing officially recorded spatial data and Earth Observation data are key in this research, and these will provide qualitative descriptors to inform and educate the Future. Comparative data of these three countries will be presented to better summarize the observations and validate the classifications for drought and inundation policies. We conclude by proposing sustainable solutions and directions to Life-threatening situations caused by the surplus and shortage of water.