

Preface

Drought, as a natural hazard, has been a pressing concern in various regions across the globe. Its detrimental impacts on water availability, agriculture, ecosystems, and socio-economic systems make it imperative to understand its underlying causes and explore effective mitigation strategies. Among the numerous factors influencing drought, soil moisture plays a crucial role in regulating the water balance of an area and, therefore, warrants in-depth investigation.

This research paper titled "Exploring linkage between Drought and Soil Moisture over period of 21years (2002-2022) by using Earth Observation Technique: A Case Study of Ahmednagar" investigates the intricate relationship between drought occurrences and soil moisture dynamics in Ahmednagar district. The study aims to analyse meteorological data and satellite-derived soil moisture data to understand the spatial and temporal variations of drought events in the region.

By integrating observation techniques, statistical methods, and geospatial tools, we seek to identify potential connections between precipitation deficits and soil moisture anomalies. The findings will contribute to drought monitoring and management strategies, providing insights for policymakers, water resource managers, and agricultural practitioners in Ahmednagar.

While focusing on the case study of Ahmednagar, this research paper offers valuable insights applicable to similar regions facing drought challenges. The study's limitations are acknowledged, primarily dependent on data quality and availability.

Overall, this research can add to sustainable water resource management, agricultural planning, and disaster preparedness efforts. It also seeks to provide valuable insights for policymakers, water resource managers, and agricultural practitioners in Ahmednagar. The findings from this study can with water resource allocation, land management, and agricultural practices, ultimately contributing to the sustainable development and resilience of the region.

It is our aspiration that this research will contribute to sustainable water resource management, agricultural planning, and disaster preparedness efforts not only in Ahmednagar but also in other drought-prone regions worldwide.