

IAF EARTH OBSERVATION SYMPOSIUM (B1)  
Assessing and Mitigating the Global Freshwater Crisis (6)

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ASSESSING VULNERABILITY TO DROUGHT IN ANGOLA USING MULTISOURCE SATELLITE  
EARTH OBSERVATIONS AND SOCIOECONOMIC DATA

**Abstract**

Angola is increasingly vulnerable to climate hazards and associated shocks, and has experienced profound impacts from prolonged drought events. Recent data from the World Bank reveal that the country is grappling with its most severe drought in the past four decades, exacerbating food security challenges for over 1.5 million people in the southern provinces. To address and mitigate the impacts of drought in Angola, our study develops a comprehensive Socioeconomic Vulnerability Index (SVI) at municipal level. The SVI will be part of a larger Angola Drought Decision Support System that includes satellite-based drought index estimates and will allow for policy scenario analysis. Drawing on a diverse array of data sources, such as satellite Earth observations, demographic and health surveys, and census data, the SVI aims to quantify the vulnerability of distinct regions and demographic groups to the challenges posed by drought. Using the methodology proposed by the Intergovernmental Panel on Climate Change (IPCC), the index integrates variables related to exposure, sensitivity, and adaptive capacity. These variables span across physical, economic, social, institutional, and technological contexts linked to drought. For example, physical variables include sanitation facilities, drinking water sources, or distance to roads; economic variables include GDP per capita or poverty rates. With the motivation to provide valuable insights into

the intricate mechanisms through which disparities in wealth, education, and resources influence adaptive capacities and recovery strategies, this study uses the Environment Vulnerability Decision Technology (EVDI) framework to address this complexity. This index will serve as a diagnostic tool, identifying areas of heightened vulnerability and guiding targeted policy interventions. Ultimately, our research aims to contribute to informed decision-making and effective strategies to address the pressing challenges posed by climate-induced vulnerabilities in Angola. The goal is to foster socioeconomic resilience in the face of drought, ensuring that policies and interventions are tailored to mitigate its disproportionate effects on different segments of the Angolan population.