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(57) Abstract :

Agricultural droughts pose significant challenges to food security and rural livelihoods worldwide. Droughts affect over 55 million people worldwide each year. To effectively mitigate the adverse impacts of drought on agricultural systems, comprehensive assessment approaches are essential. This abstract presents an overview of a comprehensive agricultural drought assessment framework that integrates multiple factors, including meteorological, hydrological, and agricultural indicators, to evaluate the vulnerability of agricultural systems to drought. The proposed framework combines remote sensing data, climate records, soil moisture measurements, and agricultural statistics to capture the multidimensional aspects of agricultural drought. It utilizes advanced geospatial and statistical techniques to analyse and interpret these data sources, providing a holistic understanding of the drought conditions and their impacts on agriculture at various spatial and temporal scales. Key components of the assessment framework include the development of drought indices tailored for agricultural applications, the establishment of drought severity thresholds, and the identification of vulnerable regions and crops. Additionally, the framework incorporates socio-economic factors, such as farmer practices, market access, and agricultural policies, to assess the adaptive capacity of agricultural systems in the face of drought. The outputs of the comprehensive assessment provide valuable information for policymakers, land managers, and stakeholders involved in drought management and agricultural planning. By understanding the spatiotemporal patterns of agricultural drought and identifying vulnerable areas and crops, targeted interventions and strategies can be developed to enhance resilience and mitigate the impacts of drought on food production. This abstract highlights the importance of adopting a comprehensive approach to assess agricultural drought, acknowledging the interconnectedness of meteorological, hydrological, and socio-economic factors. Through the integration of diverse data sources and analysis techniques, the proposed framework offers a valuable tool for policymakers and practitioners to make informed decisions, improve drought preparedness, and safeguard agricultural systems in the face of increasing climate variability and change.

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