A Drought Observatory for Hydroclimatic Risk Monitoring in Morocco

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Water resources in North Africa face growing pressure from both prolonged droughts and episodic flash floods - two extremes that are rarely monitored within a unified framework. This study presents a web-based Drought Observatory developed by the Digital Pole of Agriculture, Forestry and Drought Observatory: an operational geoportal that integrates the Standardized Precipitation Index (SPI) at multiple timescales to support hydroclimatic risk assessment at regional and national scales.

Beyond its core drought-surveillance function, the observatory demonstrates that positive SPI anomalies (SPI > +2.0, "Extremely Humid") are equally effective in detecting intense precipitation episodes and in anticipating flood-generating conditions - particularly in semi-arid catchments characterised by low infiltration capacity and rapid surface-runoff response.

This module reveals historical alternations of extreme dry and wet episodes, enabling retrospective flood-risk identification and early-warning potential. The geoportal's open-data architecture further supports coupling with hydrological modelling and spatial planning tools.

This work argues that a drought observatory is inherently a full-spectrum hydroclimatic monitoring platform, with direct operational relevance for water management and climate adaptation across African river basins.