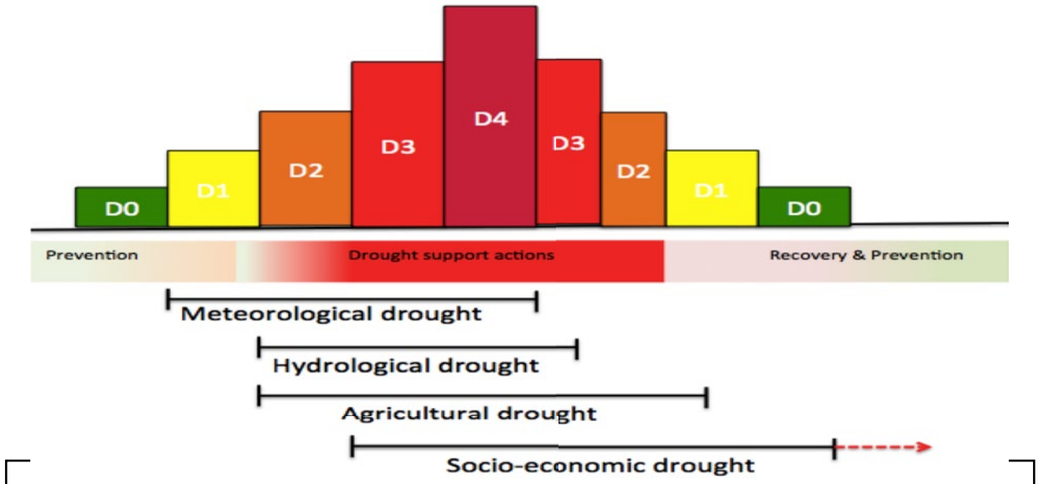
Indicator Thresholds for Drought Classification at the Country Level - Developing Indicator Thresholds for South Africa

Priority for Actions 1 and 4 - Drought Severity Classification and Monitoring



Application field: To identify indicators and related thresholds for drought classification at the national level. Research completed by the University of the Free State highlighted the importance of indicator thresholds for drought classification for different sectors. As a result, the Department of Agriculture Forestry and Fisheries (DAFF) in South Africa proposed the use of a suite of indicators for drought classification. Drought classification is important, in that it guides the declaration of disaster droughts and the activation of safety nets for different sectors.

Methodology / workflow: Drought severity and intensity is categorised into 5 levels; namely, (i) D0: Dry,(ii) D1: Moderate dry, (iii) D2: Severe drought, (iv) D3: Extreme drought, (v) D4: Exceptional drought. Indicators are categorised as meteorological, remotely sensed and hydrological. In this case, three to four indicators were selected under each category. Thresholds for each indicator were determined based on literature and practical application, yet improved calibration would be required for different climate ecological zones and different agricultural systems.

Key results: Identification of drought thresholds for different agricultural sectors. The communal farming sector experience normal dry periods as disaster droughts due to high vulnerability while the resilience of commercial farming sector allows them to withstand dry periods. Acknowledgement of varying thresholds for drought disasters in different sectors is a key result.

Innovative impact: Drought categorization allows for improved drought management practices to be implemented. Identification of drought indicators; based on quantitative thresholds, limits political interference or qualitative evaluation of drought disasters. Drought classification that is based on a suite of indicators, allows for sound decision making during activation of safety nets and disaster declaration.

Global Partnership using Space-based technology applications for disaster risk reduction – GP-STAR

Drought Monitoring and Assessment in South Africa
Indicator Thresholds for Drought Classification at the Country Level; Developing Indicator Thresholds for South Africa

Application status: Pre-operational
Drought classification framework based on a suite of indicators is proposed for

Area of application: Implemented at National and Provincial levels in South Africa with local calibrated thresholds under three categories; namely, (i) meteorological, (ii) remotely sensed, and (iii) hydrological

Identified indicators are also combined with impact related indicators at the catchment and farm level.

Jordaan, A.J. (Ed), Sakulski, D.M., Muyambo, F., Shwababa, S., Mdungela, N., Phatudi-Mphahlele, B., Mashimbye, C., Mlambo, D., Fadeyi, O., Miya, T., Bahta, Y. & Owusu-Sekyere, E. 2017. Vulnerability, adaptation to and coping with drought: The case of commercial and subsistence rain fed farming in the Eastern Cape. Water Research Commission (WRC) Report 2280/2/17. Pretoria, South Africa.

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