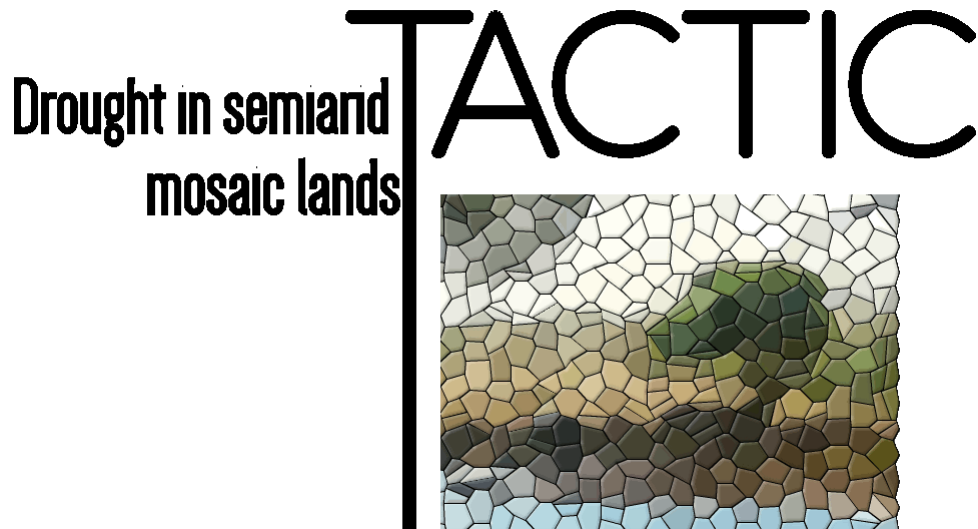


Drought impACT on the vegeTation of South African semiarid mosaiC landscapes: Implications on grass-crop-lands primary production (TACTIC)



Resumen:

Semiarid rangelands are one of Africa's most complex and variable biomes. They are a mosaic of land uses, where extensive livestock is the main economic activity, and agriculture, soil for livelihood, or conservational uses are also crucial. They are highly controlled by the availability of water, e.g., pasture and rainfed crop production. Although the vegetation is adapted to variable climatic conditions and dry periods, the increase in drought intensity, duration, and frequency, changes in agricultural practices, and other socioeconomic and environmental factors precipitate their degradation.

Through the integration of Earth Observation data into models, we can evaluate, on the one hand, the water consumed by semiarid ecosystems and their vegetation water stress and, on the other, its primary production. Thus, allowing us to assess the interaction of both processes, improving our knowledge about the vegetation's behavior in the face of drought.

TACTIC will map water consumption and primary production of semiarid mosaic crop-rangelands at the optimal spatiotemporal scales, setting up an open-source cloud framework to monitor these processes' interaction in the long term and analyze system tipping points. This information can help reduce the uncertainty associated with the administration and farmers' decision-making processes.

Objetivos:

TACTIC's main goal is to reinforce the provision of semiarid mosaic ecosystem services supporting decision-making with quantitative, distributed, and quality information. The specific questions are: 1) Which are the optimal spatiotemporal scales when monitoring semiarid mosaic vegetation cover, actual ET, and biomass?, 2) What is the evolution of these variables and their anomalies?, 3) What impact drought events have? and 4) the implementation of this monitoring framework as an open-source tool for long term analysis.

Objetivos contribución:

Together with the University of Western Cape, managing and developing Tactic.

Presupuesto: 25,000

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