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An approach to drought data web-dissemination

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Drought data dissemination has always been a challenge for the scientific community. Firstly, a variety of widely known datasets is currently being used to describe different aspects of this same phenomenon. Secondly, new indexes are constantly being produced by scientists trying to better capture drought events.
The present work aims at presenting how the drought monitoring communication issue was addressed by the ITHACA team.
The ITHACA drought monitoring system makes use of two indicators: the Standardized Precipitation Index (SPI) and the Seasonal Small Integral Deviation (SSID). The first one is obtained considering the 3-months cumulating interval of the rainfall derived from the TRMM dataset; the second one is the percent deviation from the historical average value of the integral of the NDVI function describing the vegetation season. The SPI and the SSID are 30 and 5 km gridded respectively. The whole time-series of these two indicators (since year 2000 onwards), covering the whole Africa, are published by a WebGIS platform (http://drought.ithacaweb.org). On the one hand, although the SPI has been used for decades in different contexts and little explanation is due when presenting this indicator to an audience with a scientific background, the WebGIS platform shows a guide for its correct interpretation. On the other hand, being the SSID not commonly used in the field of vegetation analysis, the guide shown on the WebGIS platform is essential for the visitor to understand the data.
Recently a new index has been created in order to synthesize, for a non-expert audience, the information provided by the indicators. It is aggregated per second order administrative levels and is calculated as follows: (i) a meteorological drought warning is issued when negative SPI and no vegetative season is detected (a blue palette is used); (ii) a warning value is assigned if SSID, SPI, or both, are negative (amber to brown palette is used) i.e. where the vegetative season is ongoing and the SSID is negative, a negative SPI value entails an agricultural drought warning, while a positive SPI implies a vegetation stress warning; (iv) a meteorological drought warning is issued when negative SPI during the vegetation season is detected but vegetation stress effects are not (i.e. positive SSID).
The latest available Drought Warning Index is also published on the mentioned WebGIS platform. The index is stored in a database table: a single value is calculated for each administrative level. A table view on the database contains fields describing the geometry of the administrative level polygons and the respective index; this table view is published as a WMS service, by associating the symbology previously described. The WMS service is then captured in order to generate a live map with a series of basic WebGIS functionalities.
The integrated index is undoubtedly useful for a non-expert user to understand immediately if a particular region is subject to a drought stress. However, the simplification introduces uncertainty as it implies several assumptions that couldn't be verified at a continental scale.