Monitoring pasture damage in subarid conditions in south of Spain.

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This work analyzes four areas in Murcia region (Spain) to study the application of the indexed pastures insurances in arid and subarid conditions. For this purpose four zones of 2,5 km have been selected, all of them close to meteorological stations, with records covering the period since 2001 to 2012 and with compound MODIS images of 500 m x 500 m from eight days intervals on that period.

In addition to obtain historical series of the Normalized Difference Vegetation Index (NDVI), other indices (NDWI, NDDI and NDWU) have been computed. The results of this study show that NDWU provides additional information to that in the NDVI. In fact, according to our results, NDDI does not provide accurate information for the regions analyzed in this particular case study.

In an attempt to relate precipitancy indices and drought situations in the four areas selected, we have showed that Standardized Precipitation Index (SPI) cannot be used accurately for drought intensity assessment. Then new indices have been formulated based on Markov chains: PI5mm and PI10mm.These indices can assess on isolated droughts which are missed by using indexed insurances. Nonetheless, it has also been observed that abnormal droppings in the NDWI index often coincide with drought lapses well established by indexed insurances.