



Assesment of Cotton Production in Drought-Prone Areas in Greece

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Drought is a major environmental hazard causing great public concern. In recent years droughts have been dramatically increased in number and severity in many parts of the world partly due to climate change. Several studies have been carried out to assess drought, which are mainly based on precipitation shortage and water supply deficit estimations. These studies have focused on the development of drought indices and models for drought identification and quantification. Moreover, remote sensing is an important tool for the detection of spatial and temporal drought distribution at different scales. Several features are used to characterize drought events such as severity, duration and areal extent. In this paper the Reconnaissance Drought Index (RDI) is used, which can be characterized as a general meteorological index for drought assessment. RDI is a new index suitable for studying drought severity under climate change, since it incorporates both precipitation and potential evapotranspiration, which are directly affected by climate change. RDI also offers a rational comparison of drought conditions between areas with different climatic characteristics enabling universal applicability. Another innovation consists of using remotely sensed data to estimate potential evapotranspiration in RDI in order to assess the area of extent and other spatial features of drought. RDI is used to assess the impacts of drought on vulnerable agriculture. The study area is the region of Thessaly in central Greece, which is the major agricultural area of the country characterized mainly by low precipitation and high evapotranspiration, thus resulting in reduced water availability. Cotton crop production is examined for the years 2007, 2008 and 2009, where 2007 was a drought affected season and 2008 and 2009 are normal years respectively.