



Meteorological and Agrohydrological drought monitoring based on conventional and remotely sensed data

E. Kanellou, E. Tsiros, C. Domenikiotis and N.R. Dalezios

University of Thessaly, School of Agricultural Sciences, Department of Ichthyology and Aquatic Environment, Volos, Greece.

efkanellou@uth.gr/ +302421093253/ +302421093256

Droughts are long-term phenomena affecting large regions causing significant damages both in human lives and economic losses. Droughts are generally considered as periods with insufficient precipitation, soil moisture and water resources for sustaining and supplying the socio-economic activities of a region. They are difficult to define, detect and monitor. Scientists have developed various indices to monitor droughts. A drought index is useful if it provides a clear, simple and quantitative assessment of the major drought characteristics: intensity, duration and spatial extent. In this paper two indices, RDI and VHI, for drought monitoring in Larissa, central Greece, are used. The RDI (Reconnaissance Drought Index) is based on ground measurements of mean monthly temperature and cumulative monthly precipitation derived from Larissa's meteorological station. RDI is used from the meteorological drought monitoring in the study area from 1981 to 2001 time period. For the detection of the agricultural drought the Vegetation Health Index (VHI) is used. VHI is an indicator for monitoring and assessment of vegetative drought as it uses for identification of the vegetation stress, and it is calculated using an equal weight of VCI and TCI indices. For the VCI and TCI computation monthly NDVI and LST images derived from NOAA/ AVHRR satellite, from 1981 to 2001, are used respectively. VHI is extracted by the combination of these indices. For the comparison of results between the RDI and the VHI, the VHI values derived from the pixel over the Larissa station are used.