

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Applications and Economic Benefits (5)

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REMOTE SENSING FOR DROUGHT EARLY WARNING AND MONITORING IN MOROCCO

Abstract

Morocco is characterized both by low-average annual rainfall and high-discrepancy precipitation rates. Throughout the last decades, Morocco has suffered from a series of drought waves, a trend that has developed to become structural, rather than a short-term. Drought affects rainfed and irrigated agriculture and industry sector and the overall population exacerbating poverty and the rural exodus. Since the 1980's, Morocco has set up efficient structures and programs to monitor and mitigate the impact of drought. Yet, all those approaches that have been adopted remain reactive rather than proactive. This paper presents a developed methodology by using remote sensing techniques and GIS for drought early warning and monitoring in Morocco. The objective of this study is to develop a comprehensive approach of drought risk management based on indicators calculated from biophysical parameters extracted from NOAA/AVHRR data. Drought early warning requires the use of macrogeographic data generated at national scale and collected daily, decadal or monthly. The calculated indicators in the framework of this study are: standardized vegetation index (SVI), vegetation condition index (VCI), temperature condition index (TCI) and combined vegetation and temperature index (VH). These indicators are being used for evaluation of vegetation health and monitoring drought. The present study shows the application of VCI and TCI combination for drought monitoring in a Moroccan rainfed area. The potential users of the generated information about drought are mainly the Moroccan departments in charge of agricultural resources management at national and/or local scale.