

Wireless Sensor Network to Help Low Incomes Farmers to Face Drought Impacts

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Abstract : This research presents the main ideas to implement an intelligent system composed by communicating wireless sensors measuring environmental data linked to drought indicators (such as air temperature, soil moisture , etc...). On the other hand, the setting up of a spatio temporal database communicating with a Web mapping application for a monitoring in real time in activity 24:00 /day, 7 days/week is proposed to allow the screening of the drought parameters time evolution and their extraction. Thus this system helps detecting surfaces touched by the phenomenon of drought. Spatio-temporal conceptual models seek to answer the users who need to manage soil water content for irrigating or fertilizing or other activities pursuing crop yield augmentation. Effectively, spatio-temporal conceptual models enable users to obtain a diagram of readable and easy data to apprehend. Based on socio-economic information, it helps identifying people impacted by the phenomena with the corresponding severity especially that this information is accessible by farmers and stakeholders themselves. The study will be applied in Siliana watershed Northern Tunisia.

Keywords : WSN, database spatio-temporal, GIS, web mapping, indicator of drought

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