A GEOSPATIAL DSS FOR SUPPORTING THE ASSESSMENT OF LAND DEGRADATION IN EUROPE

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Abstract

Nowadays, Land Degradation Neutrality (LDN) is on the political agenda as one of the main objectives in order to respond to the increasing degradation processes affecting soils and territories. Nevertheless, proper implementation of environmental policies is very difficult due to a lack of the operational, reliable and easily usable tools necessary to support political decisions when identifying problems, defining the causes of degradation and helping to find possible solutions. It is within this framework that this paper attempts to demonstrate that a new type of Spatial Decision Support System (S-DSS) that is developed on a Geospatial Cyberinfrastructure (GCI) might provide a valuable web-based operational tool which could be offered to EU administrative units (e.g. municipalities) so that they may better evaluate the state and the impact of land degradation in their territories. The land degradation data utilized were obtained from a platform named Trends.Earth, designed to monitor land change by using earth observations, and post-processed to correct some of the major artefacts relating to urban areas. The S-DSS (www.landsupport.eu) has also been designed to encourage use by multi-user communities (from citizens to scholars, associations and public bodies). Moreover, it supports the acquisition, management and processing of both static and dynamic data, together with data visualization and computer on-the-fly applications, in order to perform modelling, all of which is potentially accessible via the Web. The Land Degradation tool, is designed to support land planning and management by producing data, statistics, reports and maps for any EU area of interest. It is in line with this LDD special issue which requires to report on " *advanced approaches and methods in land-based geoSpatial Decision Support Systems... implementation of S-DSS to address the various sustainable land uses in different sectors such as ... environmental and human health*". The tool will be demonstrated through a short selection of practical case studies where data, table and stats are provided to challenge land degradation at different spatial extents. Currently there are WEBGIS system to visualise land degradation maps but – to our knowledge – this is the first SDSS tool enabling a customized LDN reporting at any NUTS level for the entire EU territory.

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