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Abstract: Geo-Spatial Decision Support Systems (S-DSSs) are becoming increasingly popular since they provide operational tools to a large community of end-users and policy-makers for multiscale land planning and management. Moreover, they promise to better connect scientists and end-users over landscapes management (e.g. farmers and planners). In this context, the H2020 LandSupport project (https://www.landsupport.eu) aims at i) supporting sustainable agriculture and forestry, ii) evaluating

trade-off between different land uses and iii) contributing to the development and implementation of land use policies in Europe. More than 100 operational tools are going to be implemented in a Web-based Land S-DSS, built on a smart geospatial cyberinfrastructure, to pursue a set of innovative scientific, technical and land policy-oriented specific objectives. In particular, there will be included models for the simulation of agroecosystems management on crop productivity, land degradation, environment-related variables (e.g. land take and pollutants transport) under current and future climate scenarios. The integrated models will also allow for the evaluation of climate change resilience (e.g. LULUCF models), ecosystem services, and socio-economic aspects. These will rely on both the rasdaman datacube technology and COMPSs framework for parallel workflows of modelling units. EO maps and products from the Copernicus Sentinel satellites will be also delivered, enabling a continuous monitoring of highly dynamic land surface variables and providing vegetation biophysical variables. A data service platform, with integrated handling of raster, vector and meta data, including query APIs, will manage the data and will enable easy-to-use exploration and analysis capabilities. As all these are based on open standards, freely available clients can be employed for accessing the LandSupport service. The spatial scale spans from European level to national and regional/ local scale – in Italy, Hungary and Austria – with additional pilot sites (e.g. Tunisia), to evaluate LANDSUPPORT tools in very different physical, socio-economic and cultural settings.

***Keywords**:* Sustainable agriculture and forestry development; LandSupport; Web-based Land S-DSS