Working Towards Next-Generation Copernicus Agricultural Services: The ECoLaSS Project

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The Horizon2020 research project, "Evolution of Copernicus Land Services based on Sentinel data" (ECoLaSS) aims at developing innovative methods, algorithms and prototypes to improve and develop next-generation operational Copernicus Land services from 2020 onwards, for the pan-European and Global Components. One new envisaged pan-European service is an agricultural service, for which a prototype is developed in the framework of ECoLaSS. The ECoLaSS project concept as well as first analyses with focus on the agricultural service are presented in this work.

Methods based on dense Sentinel-1 (SAR) and Sentinel-2 (optical) time series are utilized to develop high volume data processing chains for, e.g., image pre-processing, optical and SAR data integration, time series classification and change detection, and Copernicus High Resolution Layer (HRL) updating. These methods are automated, customizable for different products, and scalable to be fit-for-purpose for a pan-European roll-out of new/improved Copernicus Land Monitoring services.

Several prototypes will be developed and a selection of first results is presented on indicators and variables, HRL incremental updates, permanent grassland identification, and crop area and crop status/monitoring (agricultural service). These prototypes will be implemented on larger demonstration sites representing various bio-geographic regions in Europe. An outlook presents the main challenges for assessing/benchmarking all pre-operational products in view of their innovation potential and technical maturity for a future pan-European roll-out.