Improving Future Ecosystem Benefits through Earth Observations: the H2020 Project ECOPOTENTIAL

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Terrestrial and marine ecosystems provide essential goods and services to human societies. In the last decades, however, anthropogenic pressures caused serious threats to ecosystem integrity, functions and processes, potentially leading to the loss of essential ecosystem services. ECOPOTENTIAL is a large European-funded H2020 project which focuses its activities on a targeted set of internationally recognised protected areas in Europe, European Territories and beyond, blending Earth Observations from remote sensing and field measurements, data analysis and modelling of current and future ecosystem conditions and services. The definition of future scenarios is based on climate and land-use change projections, addressing the issue of uncertainties and uncertainty propagation across the modelling chain.

The ECOPOTENTIAL project addresses cross-scale geosphere-biosphere interactions and landscape-ecosystem dynamics at regional to continental scales, using geostatistical methods and the emerging approaches in Macrosystem Ecology and Earth Critical Zone studies, addressing long-term and large-scale environmental and ecological challenges. The project started its activities in 2015, by defining a set of storylines which allow to tackle some of the most crucial issues in the assessment of present conditions and the estimate of the future state of selected ecosystem services. In this contribution, we focus on some of the main storylines of the project and discuss the general approach, focusing on the interplay of data and models and on the estimate of projection uncertainties.