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The Copernicus Global Land Service: present and future

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From 1st January 2013, the Copernicus Global Land Service is operational, providing continuously to European, African and International users a set of biophysical variables describing the vegetation conditions, the energy budget at the continental surface and the water cycle over the whole globe at one kilometer resolution. These generic products can serve numerous applications such as agriculture and food security monitoring, weather forecast, climate change impact studies, water, forest and natural resources management.

The Copernicus Global Land Service is built on the achievements of the BioPar component of the FP7 geoland2 project. Essential Climate Variables like the Leaf Area Index (LAI), the Fraction of PAR absorbed by the vegetation (FAPAR), the surface albedo, the Land Surface Temperature, the soil moisture, the burnt areas, the areas of water bodies, and additional vegetation indices, are generated every hour, every day or every 10 days on a reliable and automatic basis from Earth Observation satellite data. Beside this timely production, the available historical archives have been processed, using the same innovative algorithms, to get consistent time series as long as possible. As an example, more than 30 years of LAI and FAPAR relying on NOAA/AVHRR sensors (from 1981 to 2000) and SPOT/VGT sensors (from 1999 to the present) are now available. All products are accessible, free of charge and after registration, at the following address: http://www.geoland2.eu/core-mapping-services/biopar.html. Documentation describing the physical methodologies, the technical properties of products, and the results of validation exercises can also be downloaded.

In view of service continuity, research and development are performed on two parallel ways. On one hand, the existing retrieval methodologies will be adapted to new input data sets (e.g. Proba-V and Sentinel-3 at 1km resolution) that will be used in replacement of current sensor (SPOT/VGT) which reached the end of its service-lifetime. On the other hand, the mid-term move of operations to finer resolution (300 m) is prepared in the FP7/ImagineS project, started on 1st November 2012 for 40 months, which focus on the retrieval of LAI, FAPAR, fraction of vegetation cover and surface albedo by merging Sentinel-3, Sentinel-2 and Proba-V sensors data.

The presentation will present the Copernicus Global Land service, its current status, and its evolution over the next 4 years, and will introduce the ImagineS activities.