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EO4CEA PROJECT: AN INITIATIVE TO ENCOURAGE THE ADOPTION OF SATELLITE IMAGERY-BASED PRODUCTS AND SERVICES IN CENTRAL AND EASTERN AFRICA

Abstract

The Earth Observation for Central-East Africa (EO4CEA) project has been funded by Italian Space Agency in the framework of the intergovernmental agreement between Italy and Kenya. Italian Space Agency (ASI) together with the Kenyan Space Agency (KSA) manage the Broglio Space Centre (BSC), located in Malindi (Kenya). The project carried out by the Sapienza University of Rome, in cooperation with Kenyan institutions aims at supporting ASI in enhancing the EO activities and the role of the Malindi ground station as an international hub for remote sensing applications and training. The specific objective of the project consists in developing a platform for the consultation and analysis of added-value products generated by the processing of satellite images. The system allows also the integration with products developed by researchers and students belonging to local institutions, which will promote a valuable synergy. EO4CEA will contribute to the Sustainable Development Goals 9,13,14,15, and its portfolio of products is developed based on FAIR Data Principles (Findable, Accessible, Interoperable, and Reusable).

The project geoserver is populated with a large number of products, accessible via a catalogue, which have been selected on the basis of requests collected through a questionnaire distributed in the initial phases of the project. The products, computed automatically, are based on the processing of Copernicus satellite (Sentinel-1, Sentinel-2, Sentinel-3, Sentinel-5, etc), NASA satellite (Landsat, ECOSTRESS) and images directly acquired at Broglio Space Centre through antennas devoted to this purpose.

In particular, some of the products refer to the following case studies: monitoring of agricultural areas, monitoring of soil characteristics, monitoring of water bodies, atmosphere studies, deforestation, forest fires and drought warning. The added value data made available on the project platform can be analyzed and utilized by using a series of Python Notebooks already present on the platform or by using those implemented and tested by the end users.

Which is the main difference with respect to other systems devoted to the dissemination of EO satellite data? The data are already clipped on the base of counties or areas of interest. This minimizes the need for data download, typically a problem for developing countries. A full description of the meaning of each product is given. A series of training courses are present in the same system. Notebooks allowing to understand how to use and manage the data are given. Data that is not easily findable are also provided.