

From global observations to locally relevant information: the Earth Observation Monitor

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Earth Observation data are available around the globe and can be used for a wide range of applications. Dependent on the spatial resolution local regions can facilitate from global Earth observation (EO) data. A lot of applications are reasonable with the use of vegetation time-series information based on EO data. To support local stakeholders in the usage of information from space existing barriers especially in data processing need to be limited. Therefore the “Earth Observation Monitor” (EOM) provides automated and operational time-series access and analysis of several EO data. Data providers such as the NASA Land Processes Distributed Active Archive Center (LPDAAC) for MODIS Land products, NOAA National Climatic Data Center (NCDC) for climate station data, and Google Earth Engine for Landsat and MODIS data are connected and can be used to retrieve data for specified areas. Data is being automatically downloaded and processed. Time-series analysis tools (breakpoint and trend detection, phenological analyses) were integrated to extract further information based on the temporal resolution of the data. With an easy to use web portal and a mobile app two applications of EOM are described. Furthermore use cases for vegetation change analyses are demonstrated. Focus of this work is to make time-series analyses more useful for local stakeholders. This was achieved by automated data processing in line with direct result visualization in web-based and mobile systems. Automated data processing is realized with web services based on the Web Processing Service specification of the Open Geospatial Consortium (OGC). All needed steps from data download to data analysis is automated and provided as an operational service. Local stakeholders can use these services by the before mentioned client applications with simple interfaces.