



Sentinel-2 ArcGIS Tool for Environmental Monitoring

Alin Plesoianu (1,2), Ionut Cosmin Sandric (1,2), Paula Anca (1), Alexandru Vasile (1), Andreea Calugaru (1,3), Cristian Vasile (1), and Lucian Zavate (1)

(1) Esri Romania, Bucharest, Romania, (2) University of Bucharest, Faculty of Geography, (3) University of Agricultural Sciences and Veterinary Medicine

This paper addresses one of the biggest challenges regarding Sentinel-2 data, related to the need of an efficient tool to access and process the large collection of images that are available. Consequently, developing a tool for the automation of Sentinel-2 data analysis is the most immediate need. We developed a series of tools for the automation of Sentinel-2 data download and processing for vegetation health monitoring. The tools automatically perform the following operations: downloading image tiles from ESA's Scientific Hub or other vendors (Amazon), pre-processing of the images to extract the 10-m bands, creating image composites, applying a series of vegetation indexes (NDVI, OSAVI, etc.) and performing change detection analyses on different temporal data sets. All of these tools run in a dynamic way in the ArcGIS Platform, without the need of creating intermediate datasets (rasters, layers), as the images are processed on-the-fly in order to avoid data duplication. Finally, they allow complete integration with the ArcGIS environment and workflows