

Assessment of Sustainable Development Goals for Ukraine using NEXUS approach

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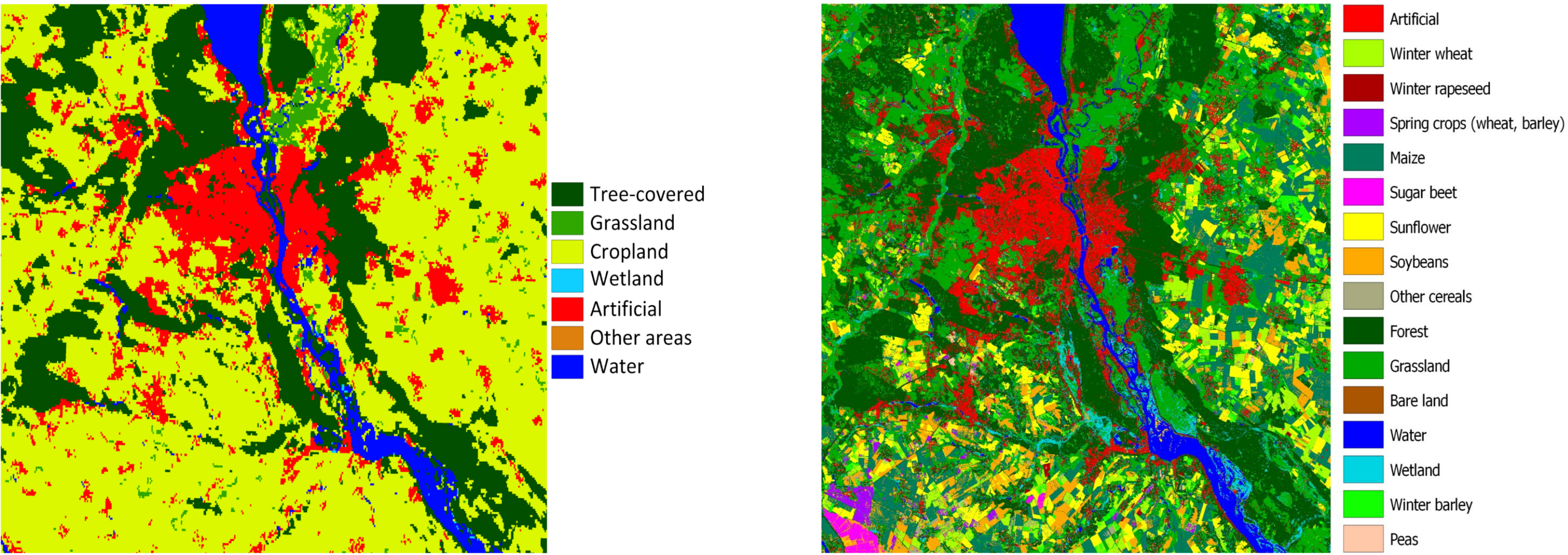
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Objectives

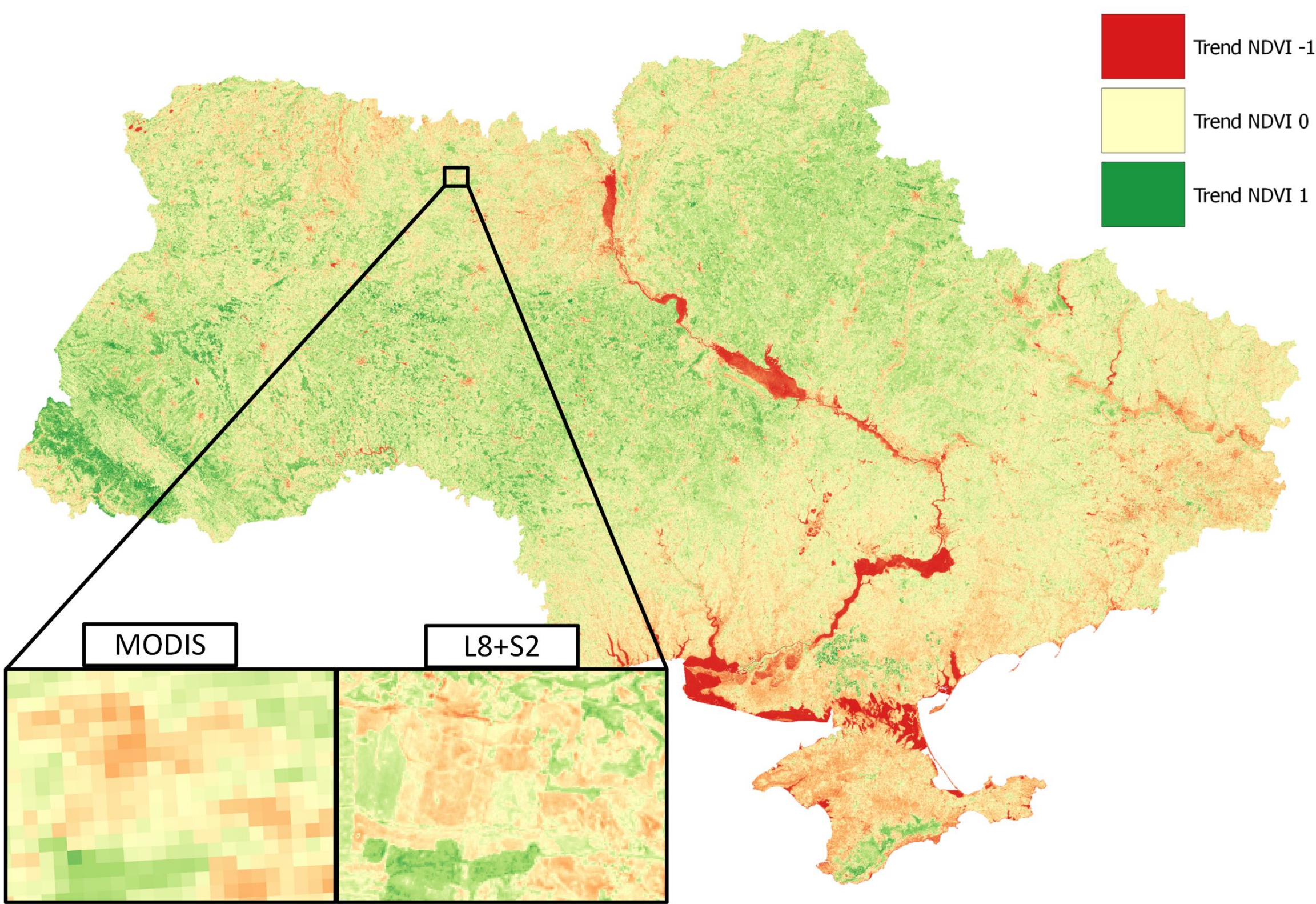
- Land degradation indicators identification is one of the most important tasks in achieving of sustainable development goals 15: Life on Land and 2: Zero Hunger.
- The main task is to develop methodology for SDG's indicators calculation using high resolution satellite images with better accuracy in comparison with the use of available global products, that can be useful for territory of Ukraine in ERA-Planet project.

Global ESA CCI-LC and our regional 10m land cover map

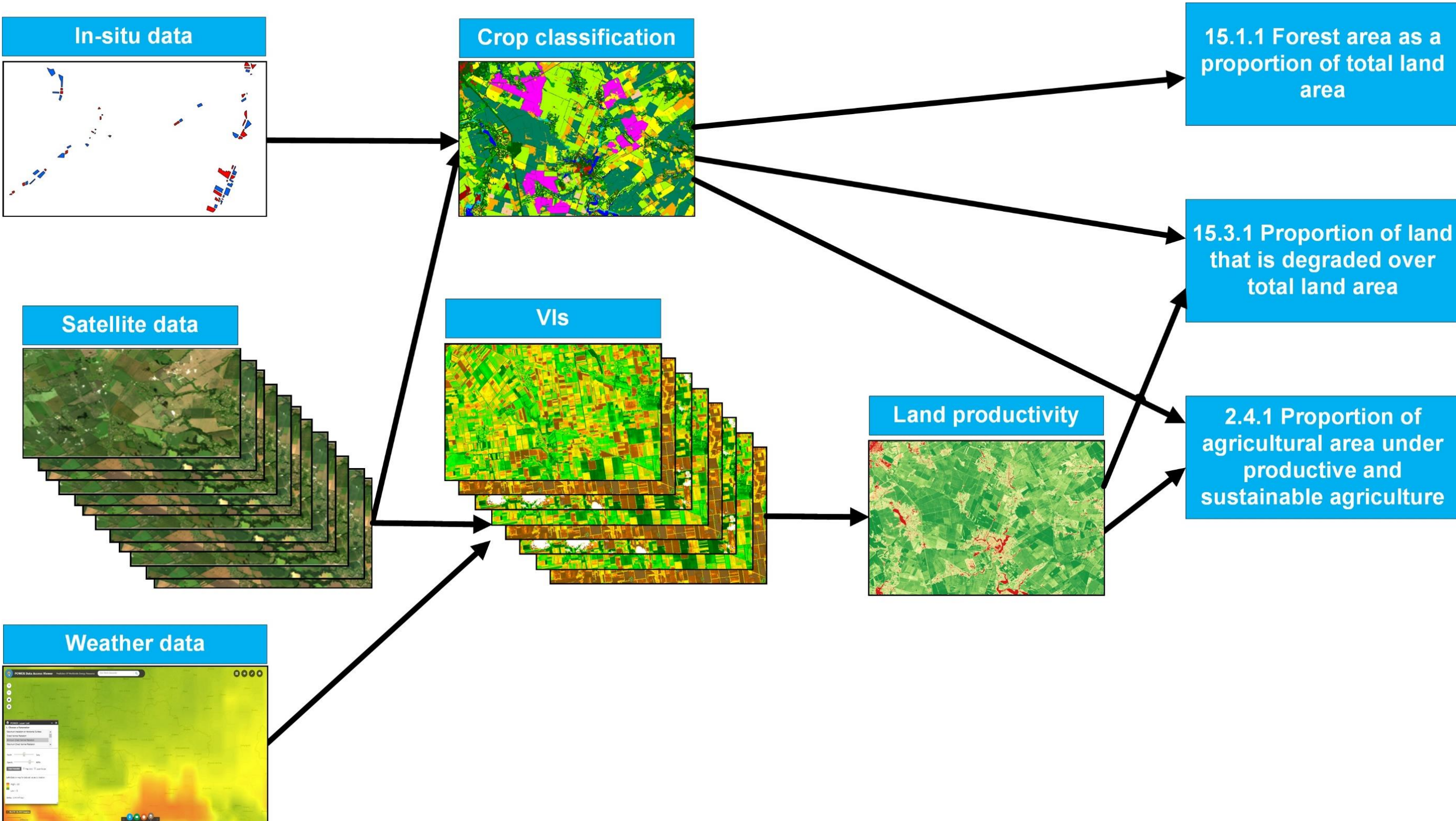


Methodology

Productivity Map build by NDVI trend using Sentinel-2 and Landsat-8 satellite images



Data Processing Chain for SDG's indicators 15.1.1, 15.3.1 and 2.4.1



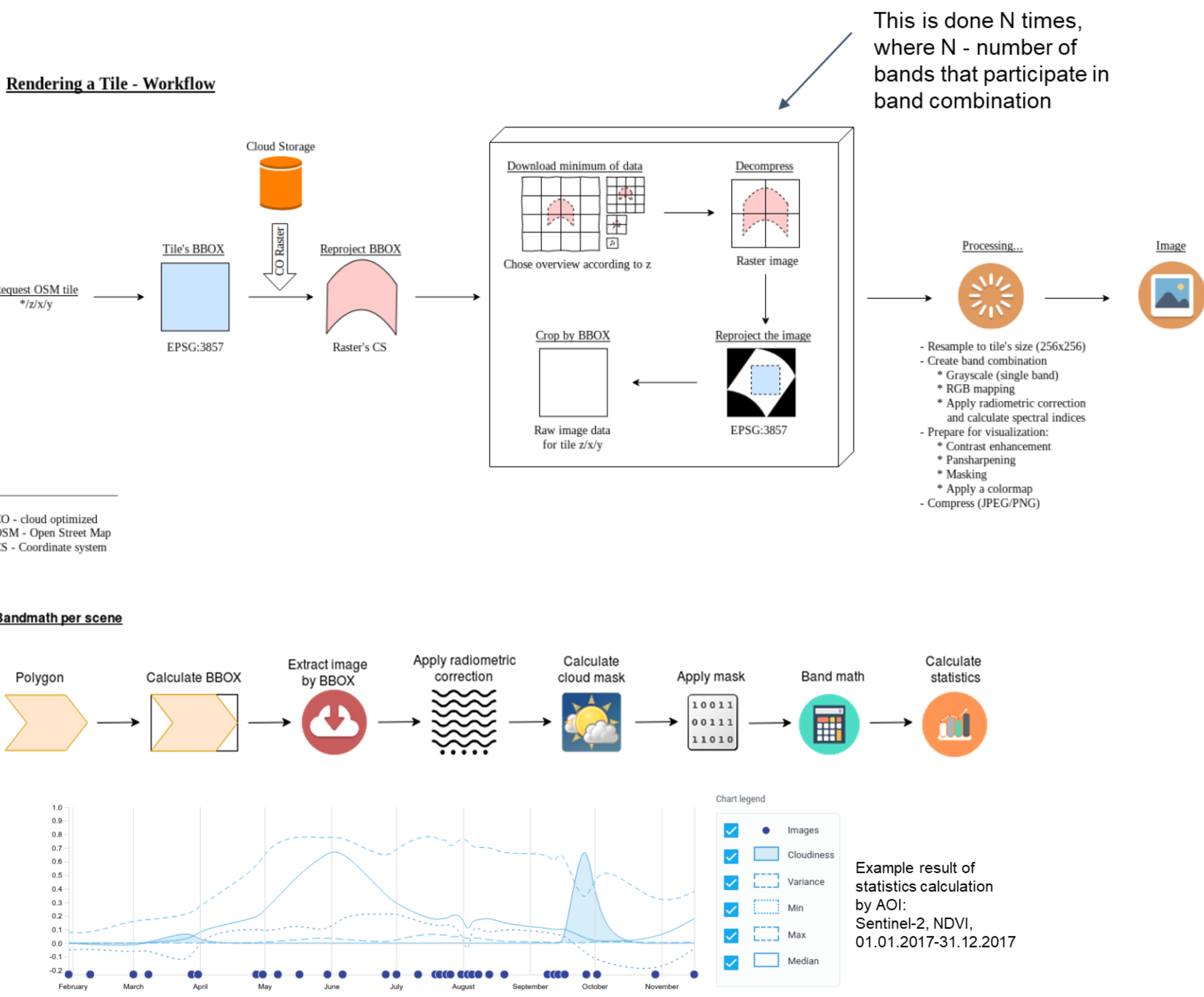
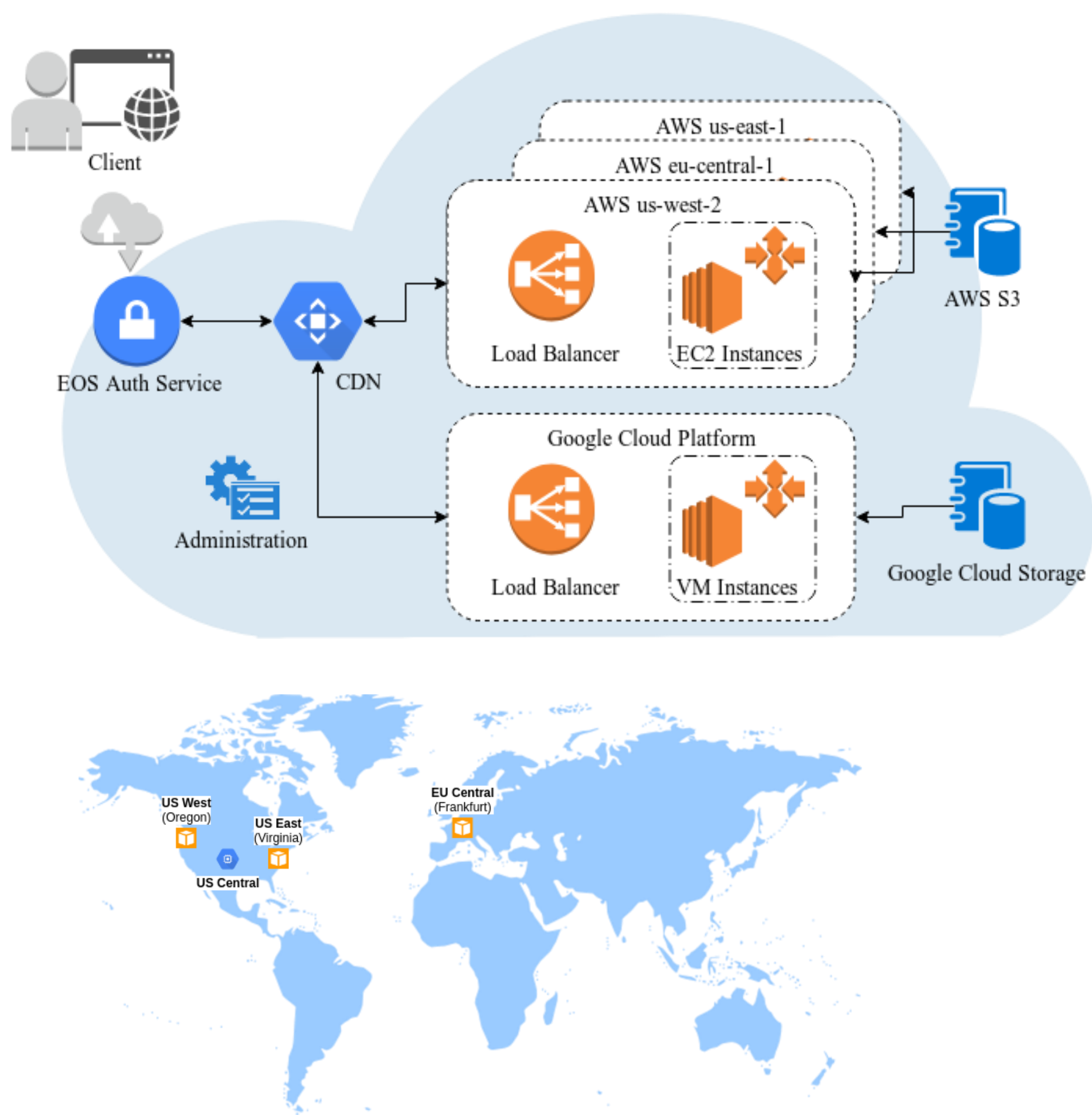
System Architecture

Datasets on AWS

- [Sentinel-2 L1C \(2015 - present\)](#)
- [Sentinel-1 GRD \(2014 - present\)](#)
- [Landsat 8 \(2013 - present\)](#)
- [MODIS MCD43A4 \(2013 - present\)](#)
- [NAIP \(2012 - present\)](#)
- [CBERS-4 MUX \(2014 - present\)](#)
- [Terrain Tiles](#)

Datasets on Google Cloud Storage

- [Landsat 4 \(1982 - 1993\)](#)
- [Landsat 5 \(1984 - 2013\)](#)
- [Landsat 7 \(1999 - present\)](#)



Results

We calculated indicator 15.1.1, 15.3.1 and 2.4.1 for the territory of Ukraine using our methodology and system architecture for SDG's indicators calculation based on high resolution land cover map and high resolution land productivity map.

Proportion of land that is degraded over total land area and Proportion of agricultural area under productive and sustainable agriculture for 2016 and 2017 years

	2016	2017
Indicator 15.3.1	46.19%	48.24%
Indicator 2.4.1	37.6%	42.8%

Forest area as a proportion of total land area by statistics and our classification maps in 2000, 2010 and 2016 years

	2000	2010	2016
Statistics	17.2%	17.2%	17.6%
Classification maps	17.5%	17.8%	22.2%