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# EOCap4Africa

## 8 Raster Processing

### b) Cloud masking and mosaicking in QGIS



# Learning objectives



Learn to use the Semi-Automatic Classification Plugin in QGIS

Practice how to apply a cloud mask on Sentinel-2 imagery

Understand the mosaicking of two satellite images

Practice preprocessing satellite imagery in QGIS



# Semi-Automatic Classification plugin

## What is it?

- A QGIS plugin for supervised classification of remote sensing imagery
- Facilitates image preprocessing, classification, and post-processing

## Key features

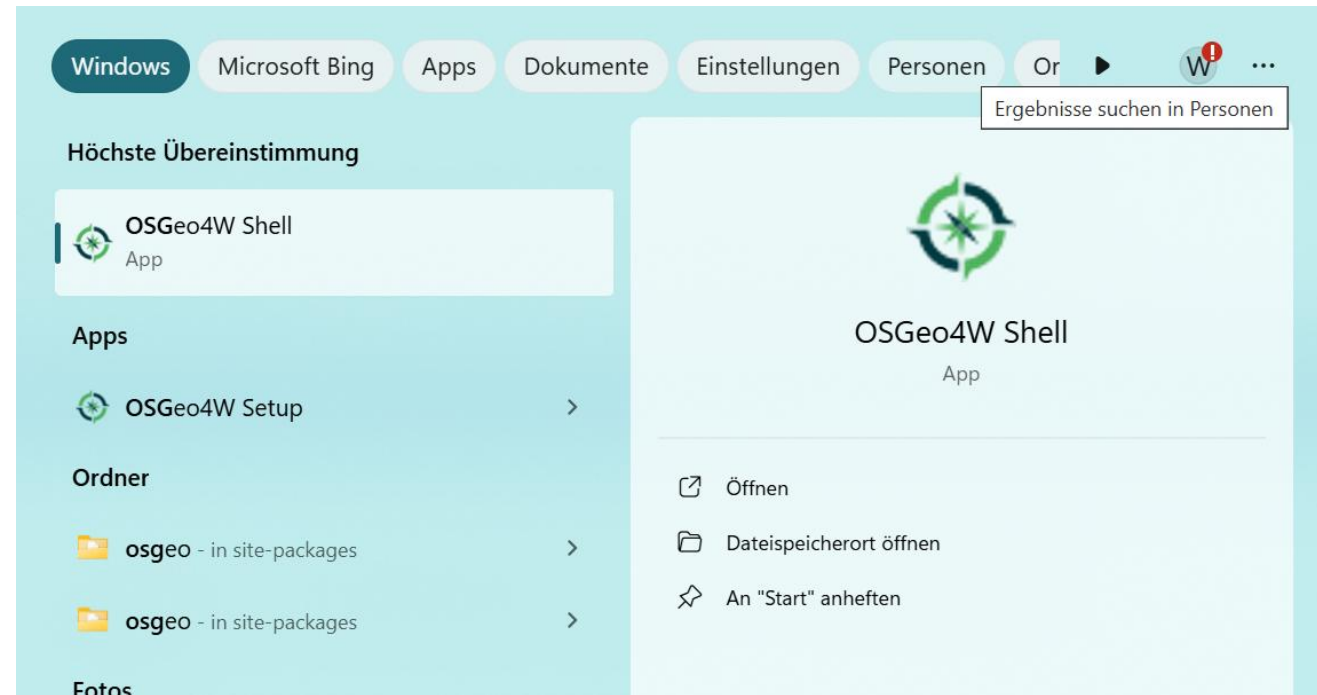
- Preprocessing – Convert digital numbers (DN) to reflectance, atmospheric correction
- Training Samples – Define land cover classes based on known pixels
- Classification – Supervised classification using machine learning algorithms
- Post-Processing – Refine classification results with filtering and accuracy assessment



# Installing Semi-Automatic Classification plugin

In comparison to other plugins, SCP has some co-dependencies we need to fulfill first

1. Close your QGIS application and search for the OSGeo4W Shell
2. Start it



# Installing Semi-Automatic Classification plugin



3. Enter the following command in the shell: `pip3 install --upgrade remotior-sensus`

```
OSGeo4W Shell
run o-help for a list of available commands
C:\Program Files\QGIS 3.34.13>pip3 install --upgrade remotior-sensus
```



# Installing Semi-Automatic Classification plugin

4. Start QGIS and create a new project
5. Install the SCP plugin via the plugin manager

## Semi-Automatic Classification Plugin

**The Semi-Automatic Classification Plugin (SCP) allows for the supervised classification of remote sensing images, providing tools for the download, the preprocessing and postprocessing of images.**

Developed by Luca Congedo, the Semi-Automatic Classification Plugin (SCP) allows for the supervised classification of remote sensing images, providing tools for the download, the preprocessing and postprocessing of images. Search and download is available for Landsat, Sentinel-2 images. Several algorithms are available for the land cover classification. This plugin requires the installation of Remotior Sensus, GDAL, OGR, Numpy, SciPy, and Matplotlib. For more information please visit <https://fromgistors.blogspot.com>.

★★★★★ 752 rating vote(s), 2162078 downloads

**Category** Raster

**Tags** [raster](#), [classification](#), [land cover](#), [remote sensing](#), [analysis](#), [landsat](#), [sentinel](#), [supervised classification](#), [spectral signature](#), [mask](#), [clip](#), [accuracy](#), [landscape](#), [copernicus](#), [random forest](#), [processing](#), [remotior sensus](#)

**More info** [homepage](#) [bug tracker](#) [code repository](#)

**Author** [Luca Congedo](#)

**Installed version** 8.5.0

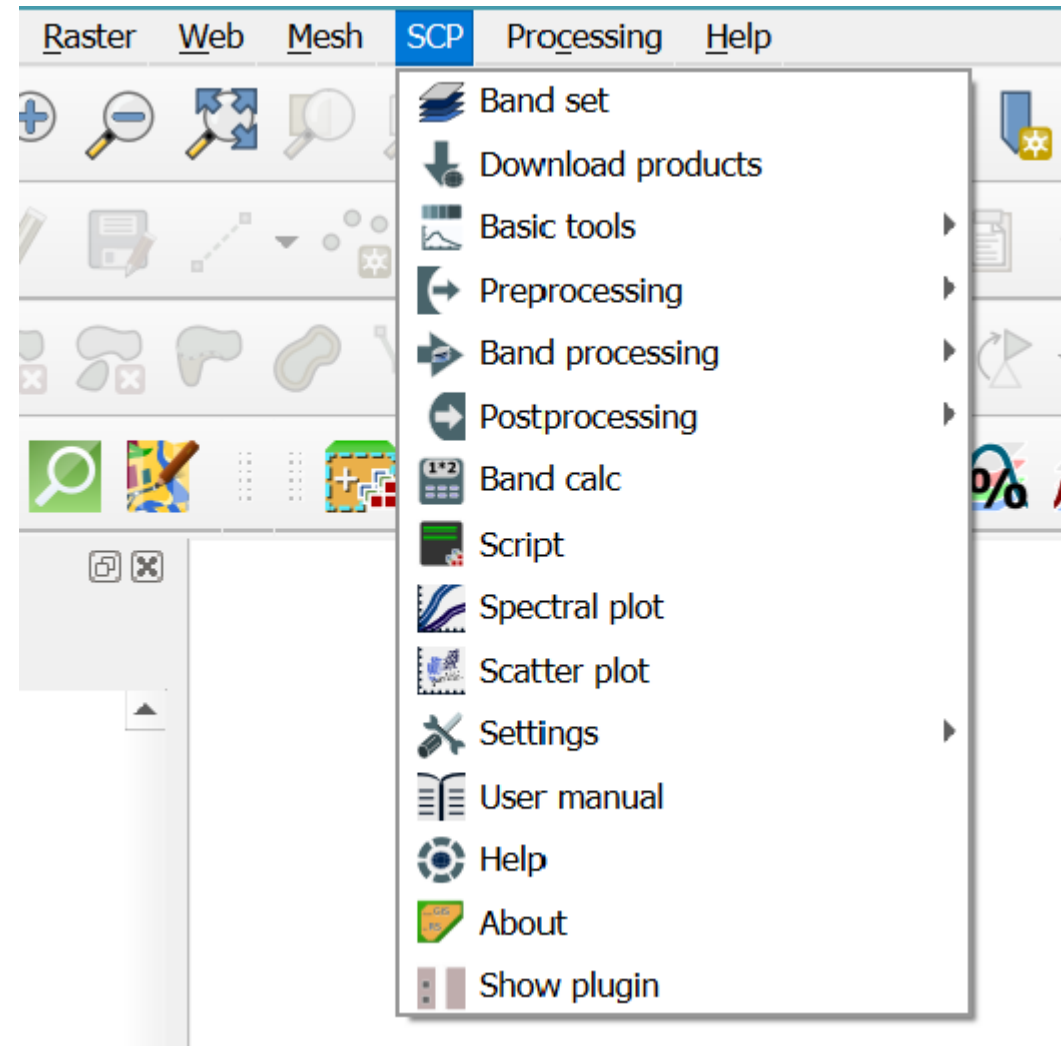
**Available version (stable)** 8.5.0 updated at 16.11.2024 12:13

**Changelog** 8.5.0  
 -added raster input to the tool raster zonal stats and update the Processing  
 -this version requires Remotior Sensus >=

# Installing Semi-Automatic Classification plugin



6. SCP is successfully installed and will show up at the top



# Task: Cloud masking



Using the provided Sentinel-2 scene, create a cloud mask to remove the cloud cover of the satellite image

# Task: Mosaicking



Using the provided raster files to create a mosaic raster image and clip it to the AOI

# Summary & key takeaways



**Mosaicking** is a simple process that merges two or more rasters with one another

**Cloud masks can be applied using the SCP plugin**

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# Thank you for your attention!

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