W04-1: Create training sites

Ground truth data (training sites) are needed to classify the satellite images according to land cover type specific spectral properties. In this worksheet, we will create ground raining sites to prepare for the land cover classification. Since the field samplings are of small spatial extent (5x5m), we will digitize further sites in order to get a representative set of training data.

In this worksheet we have a rest from R for a while and we will work in QGIS which allows to digitize in a much more comfortable way.

Things you need for this worksheet

- R — the interpreter can be installed on any operation system. For Linux, you should use the r-cran packages supplied for your Linux distribution. If you use Ubuntu, this is one of many starting points. If you use Windows, you could install R from the official CRAN web page.
- R Studio — we recommend to use R Studio for (interactive) programming with R. You can download R Studio from the official web page.
- W03-1: Read remote sensing data

Learning log assignments

In this worksheet, we will create training sites to prepare for the land cover classification.

 Load the field survey data into QGIS

 Add a high resolution basemap in QGIS (either the Quickbird image or e.g. google satellite images) which allows to identify land cover types.

If you are using QGIS 3 you have to connect google satellite images as an xyz tiles browser. Copy and paste this link in the URL field in the Connections Windows:

http://mt0.google.com/vt/lyrs=y&hl=en&x={x}&y={y}&z={z}&s=Ga

 Create a new polygon shapefile and digitize land cover types, in consideration of the classes that were digitized during the field survey. Your training sites could for example include the following classes: water, settlement, forest, lava, sparely vegetated, dense vegetation

Tip: Keep in mind that the resolution of the landsat images is much coarser (28m). Each of your polygons should cover at least a few landsat pixels. It might be helpful to load the Landsat data into QGIS to get an idea which training sites might be useful.