

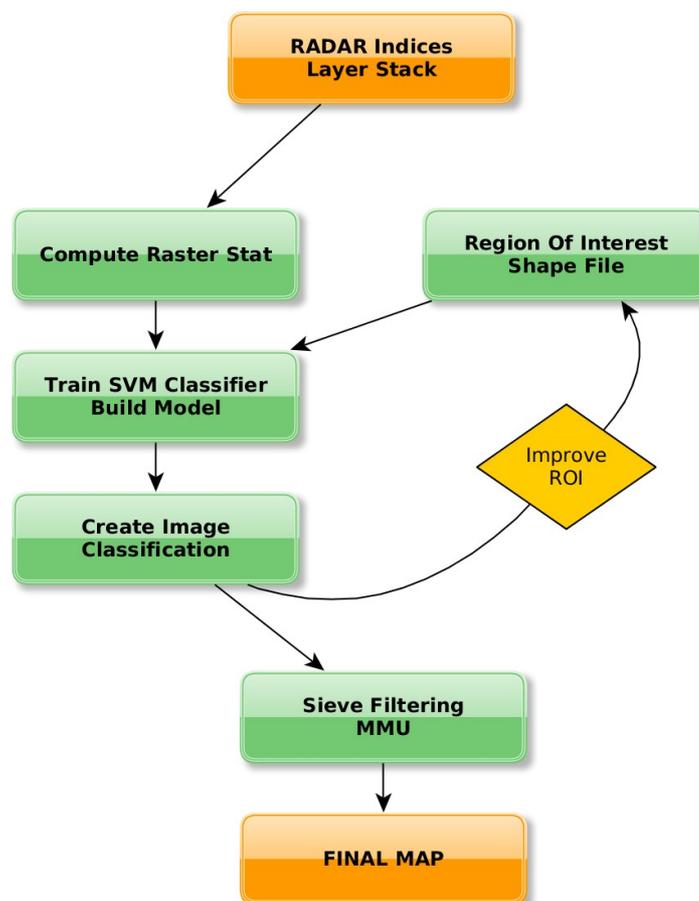
# REDD+ for the Guiana Shield

Technical and Regional Platform for the  
Development of REDD+ in the Guiana Shield

## Classification Process With QGIS

**Objective** : This tutorial is designed to explain how make supervised classification of any Raster. This tutorial is based OTB (Orfeo Tool Box) classification algorithm called in QGIS. To more easily use OTB we adjust Original QGIS OTB interface. So you have to be sure to install this customisation using the video tutorial : [QgisOTBCustomization.mp4](#) or [YouTube](#)

### Main processing step



#### 1) Import the Layer Stacked data

In Qgis, Import the raster using this icon:



#### 2) Create No data mask

This step is important if you have background with different value in the band. The goal is to create a mask in order to erase (in the next step) this background with unique value.

Click here to see the video

[QgisBuildNoDataMask.mp4](#) or [YouTube](#)

### 3) Erase the background value with the No data mask

The goal is to create a mask in order to erase (in the next step) this background with unique value. The goal is to vectorize the mask and use it to clip the original data raster using a new No data value, -999 for example.

Click here to see the video

[QgisMaskRasterWithRasterMask.mp4](#) or [YouTube](#)

### 4) Compute raster statistics

Based on the new clipped data raster, we will use in Qgis the OTB tools that will create a file containing for each band the mean and stdev. To that it's important to give the Background no data value. This step will create an XML file.

Click here to see the video

[QgisClassificationStep1-RasterStat.mp4](#) or [YouTube](#)

### 5) Create ROI (Region Of Interest) shapel file

In order to use Supervised classification tools we need to create a shape file that will contain polygone with one field name (class for example) that will contain the code of the study class. For example it could be:

1 for Forest, 2 for Savannah and 3 for water area.

Click here to see the video

[QgisClassificationStep2-CreateShapeROI.mp4](#) or [YouTube](#)

### 6) Train the SVM classifier

Using the input raster, its statistics file previously created and the shape file containing the ROI, we will train the SVM (Support Vector Machine) classifier which will create what is called a model file. This file contain all the "memory" of the training step.

Click here to see the video

[QgisClassificationStep3-TrainSVMClassifier.mp4](#) or [YouTube](#)

### 7) Create image classification

Using the input raster, its statistics file previously created and the model file previously created, we will create the classification file.

Click here to see the video

[QgisClassificationStep4-CreateClassificationFile.mp4](#) or [YouTube](#)

### 8) Remove small pixel agregate and apply MMU (Minimal Mapping Unit)

In order to remove small pixel aggregate which are not significant and also to apply a specific MMU, it's important to apply a sieve filtering in classification post-processing. Usually and whatever the data we estimate that we need to remoxe pixel aggregate lower than 10 pixels.

Click here to see the video

[QgisClassificationStep5-SieveClassification.mp4](#) or [YouTube](#)