

ICIMOD



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March 2022

# DAY 3

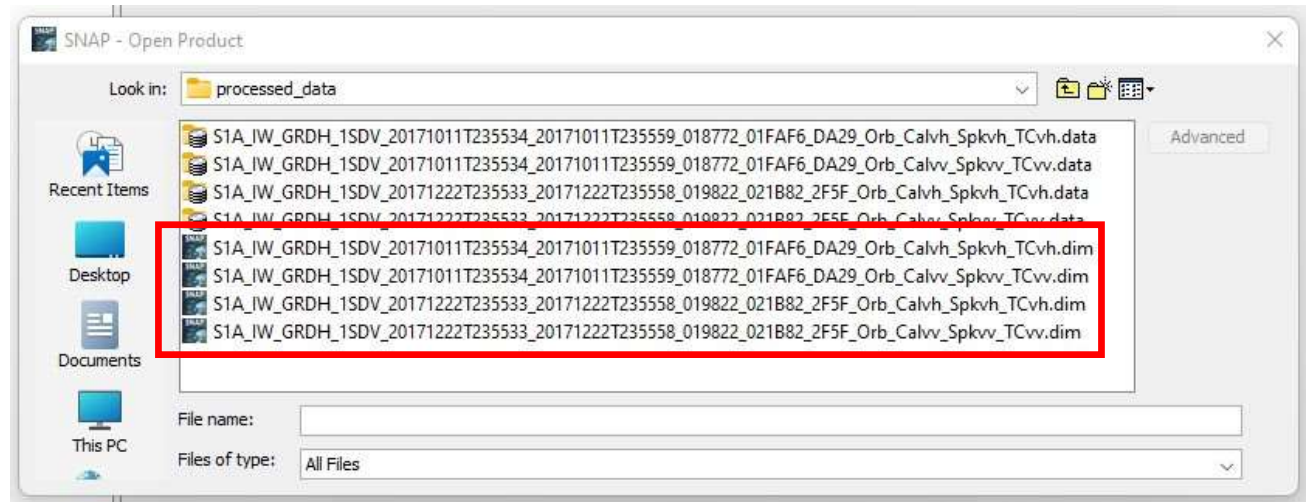
## Exercise 3

# Image Stacking and Visualization

# Image Stacking and Visualization in SNAP

## Stacking Image in SNAP

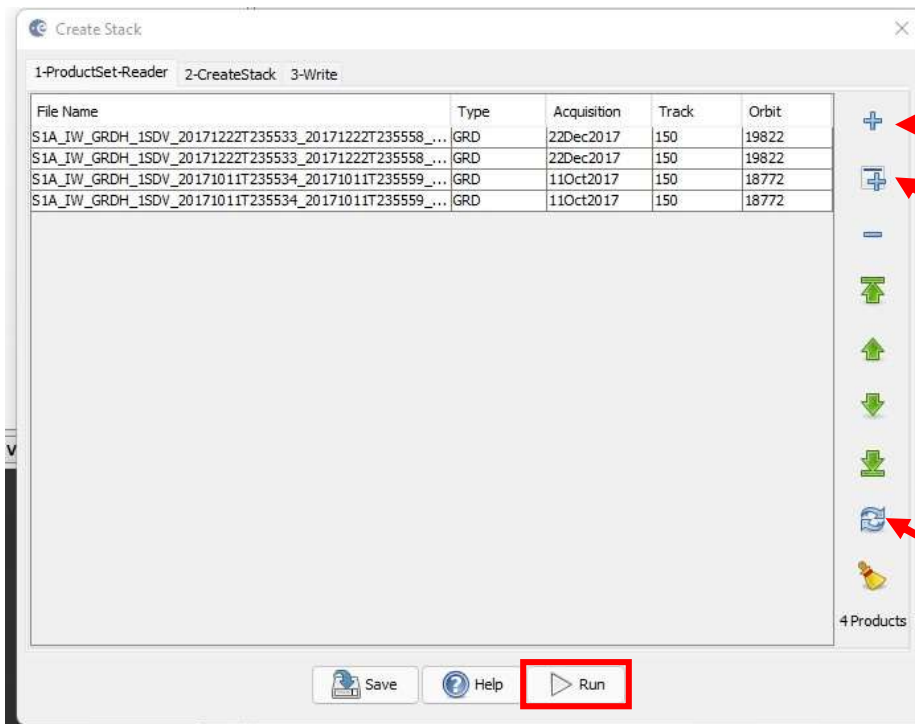
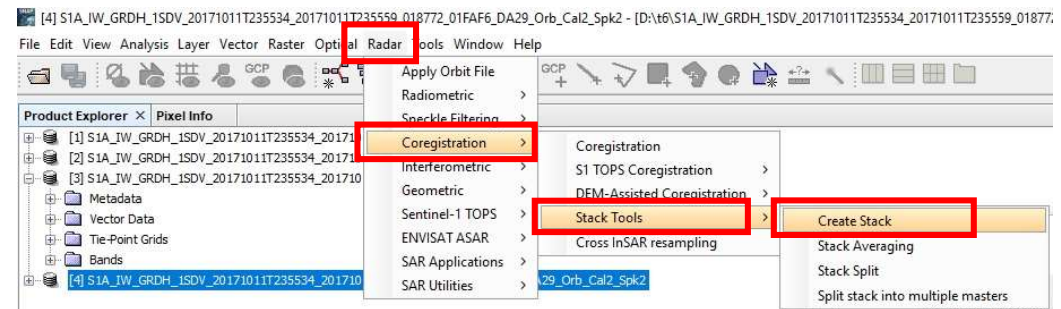
- Load the processed SAR images in SNAP
- For this , go to the folder where you have saved the file in day 2 pre-processing or go to **day3/processed\_data**
- Add the **.dim** file



# Image Stacking and Visualization in SNAP

## Stacking Image in SNAP

- Click on the Radar Tab> Coregistration>Stack Tools>Create Stack



Adds data from Directory

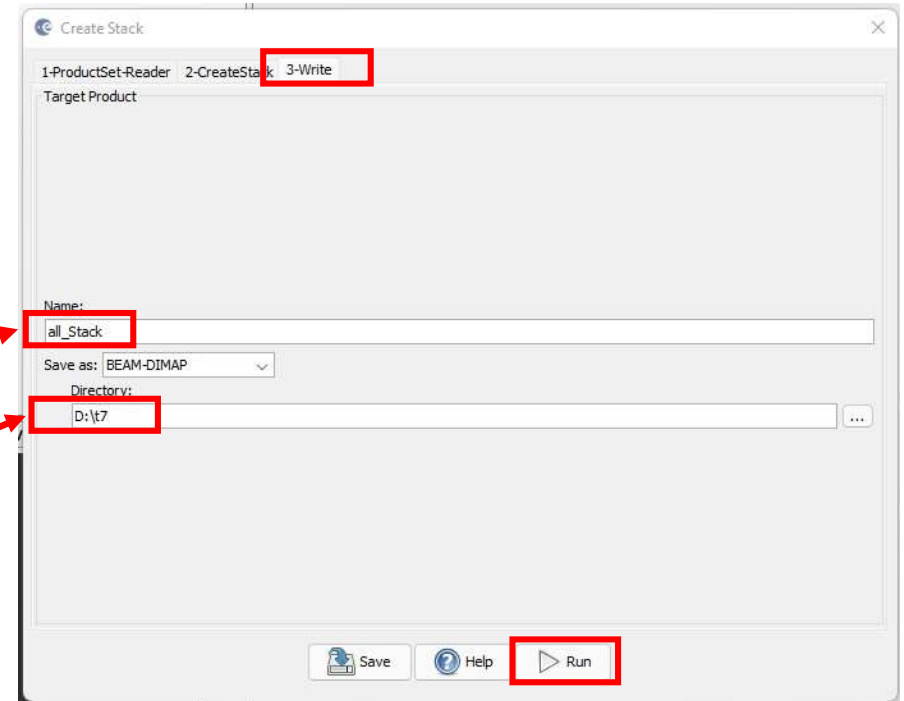
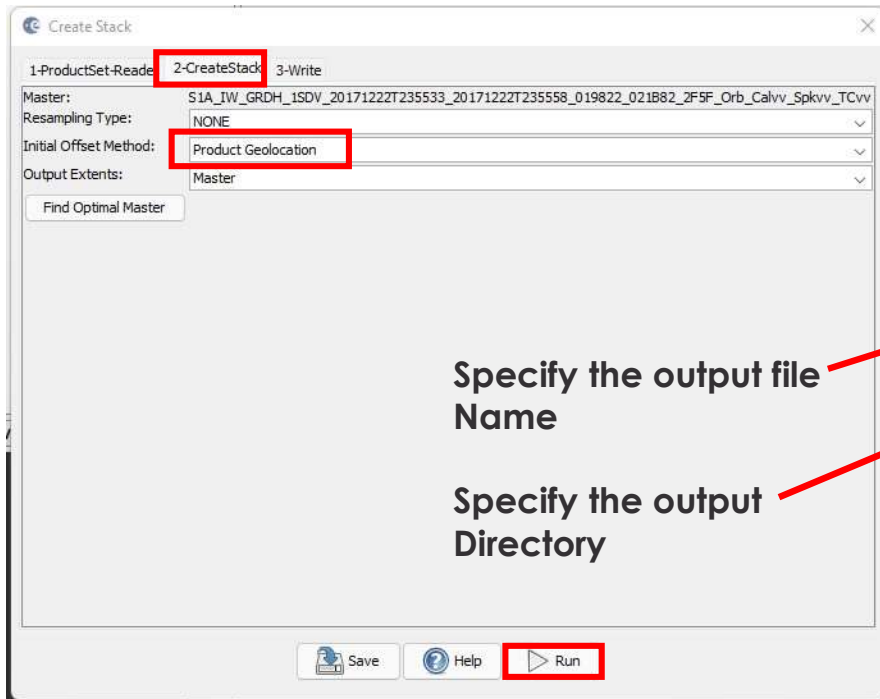
Adds data from the SNAP display

Press refresh to load file information

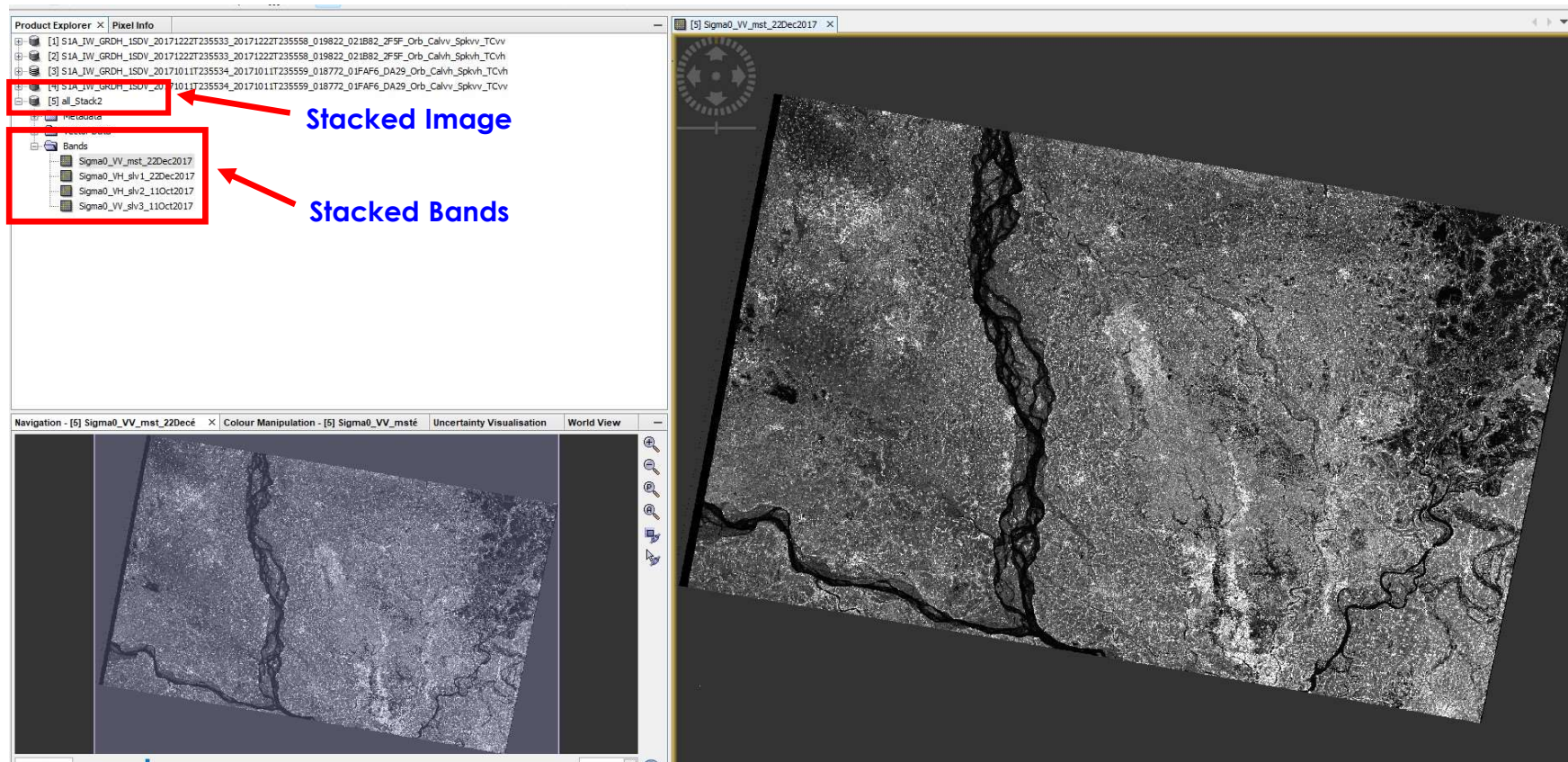


# Image Stacking and Visualization in SNAP

## Stacking Image in SNAP

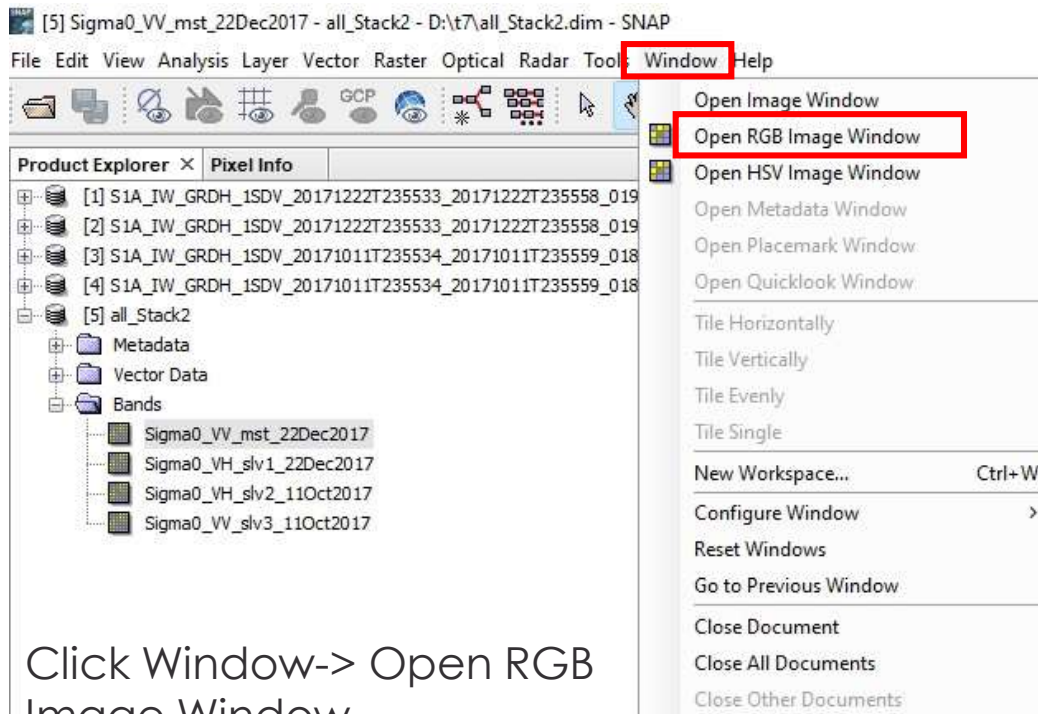


# Image Stacking and Visualization in SNAP

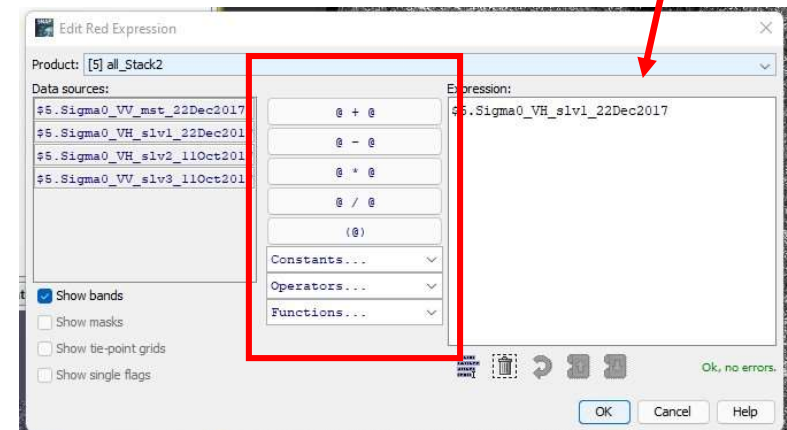
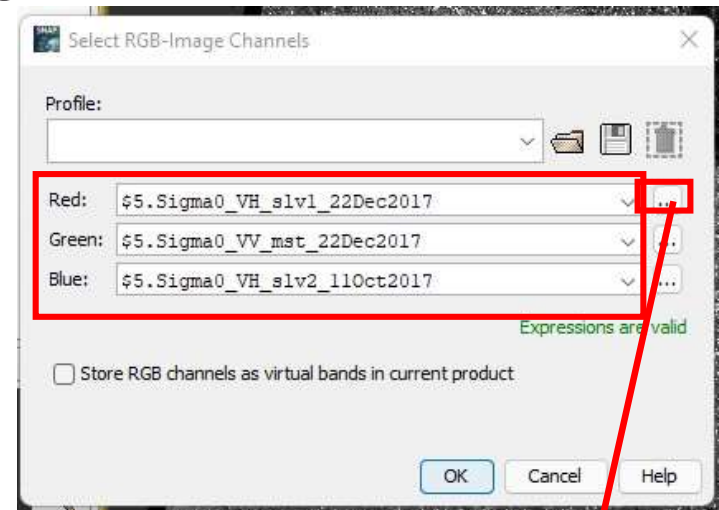


# Image Stacking and Visualization in SNAP

## RGB Combinations from Stacked Image

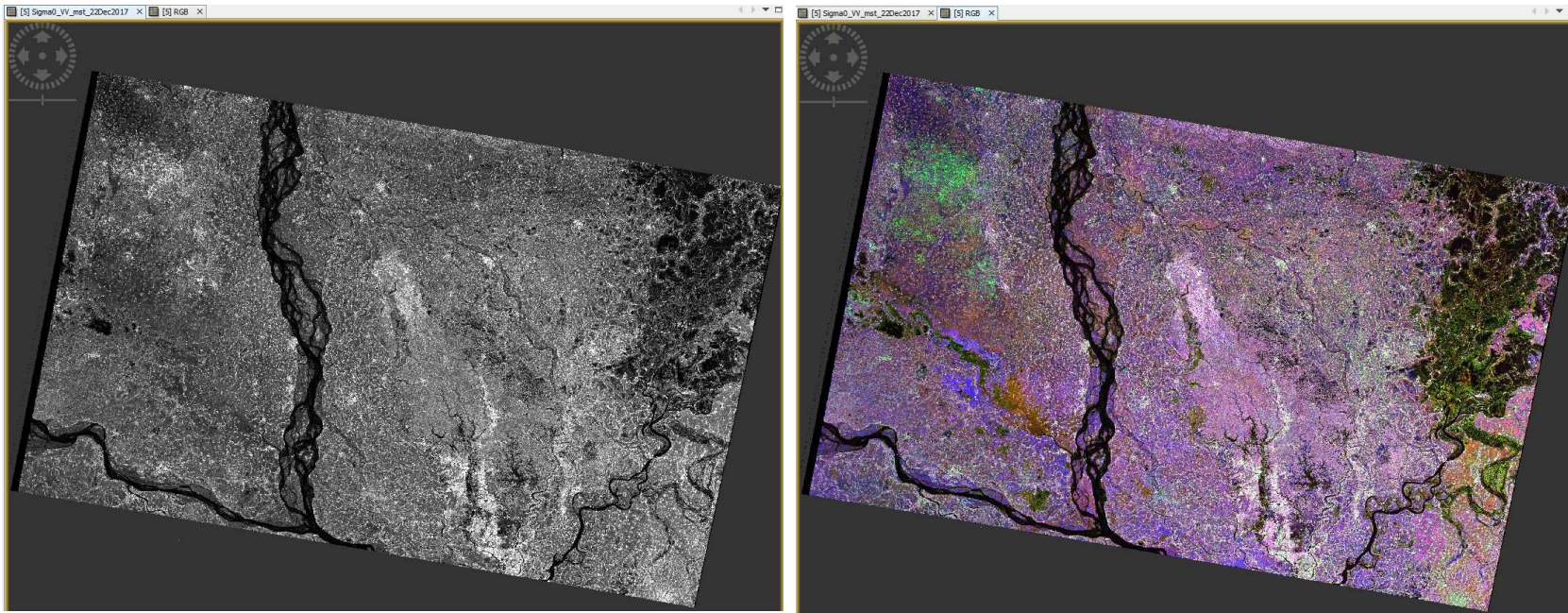


Click Window-> Open RGB Image Window



# Image Stacking and Visualization in SNAP

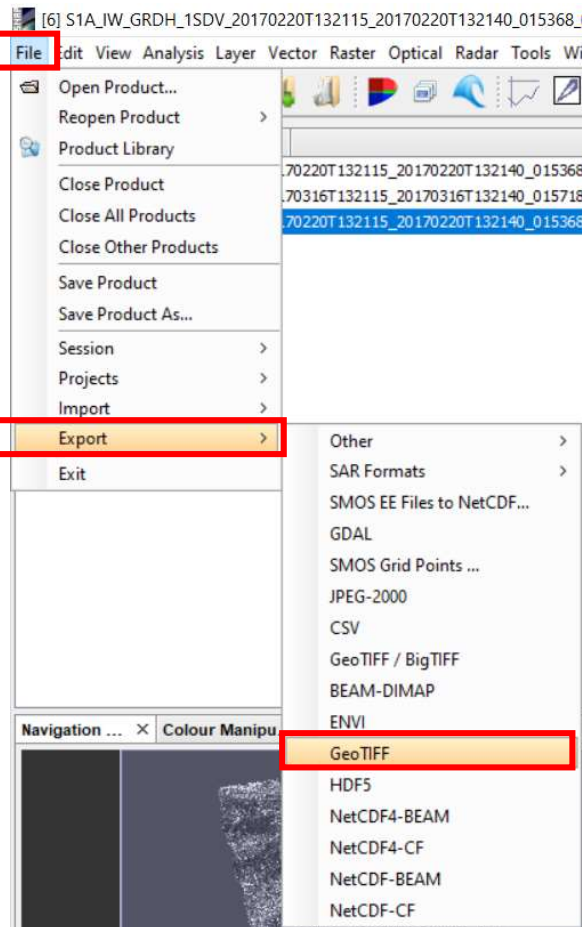
## RGB Combinations from Stacked Image



# Image Stacking and Visualization in SNAP

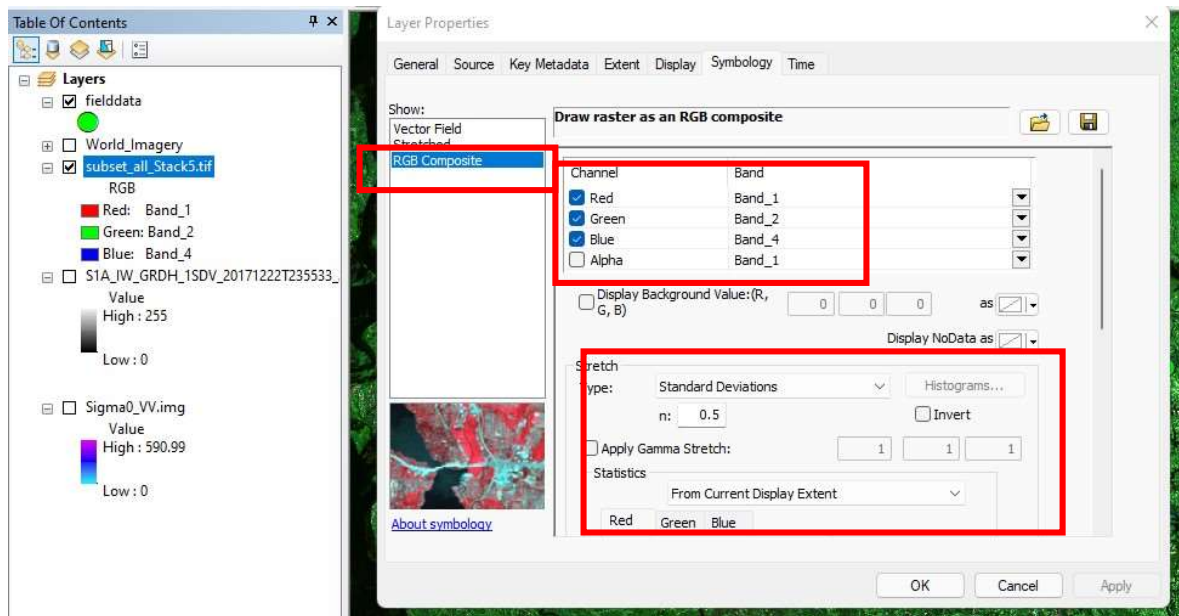
## Exporting Snap image to another format

- Select the Image
- Click on File > Export > Geotiff (User's choice)



# Image Stacking and Visualization in SNAP

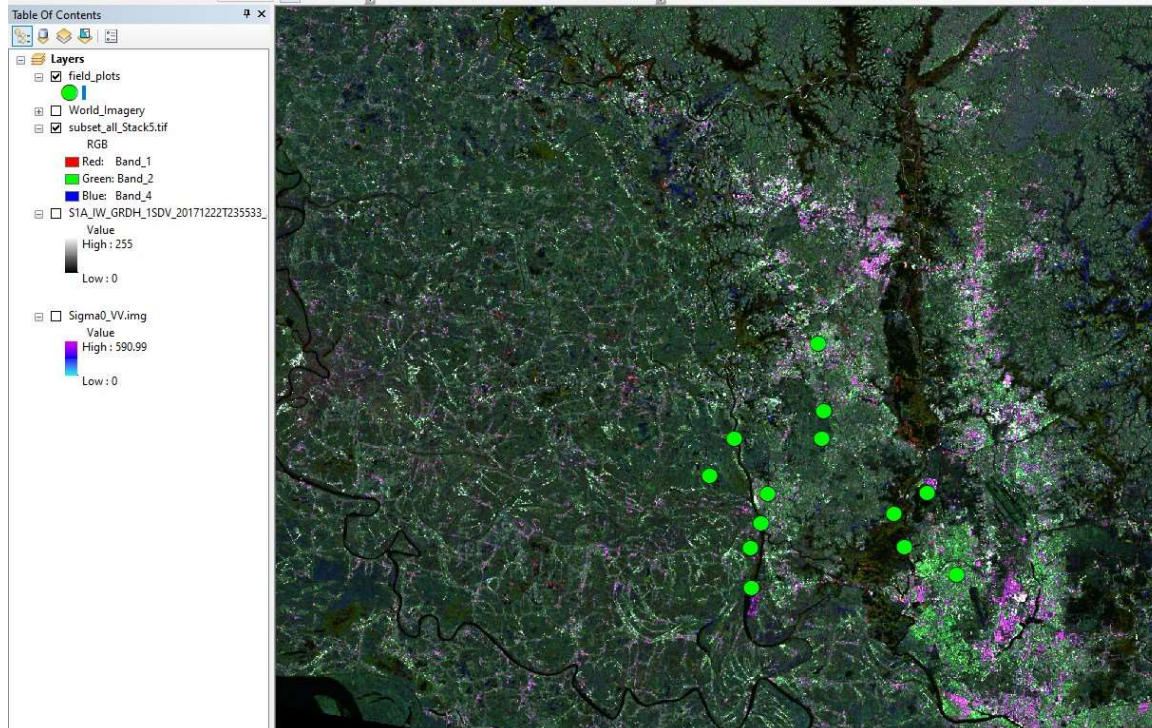
## Color interpretation with field data



- Open the exported stacked image (tif) in ArcGIS
- Right click on Stack image name > Properties > Symbology-> change the bands to see the color
- Change the stretch type

# Image Stacking and Visualization in SNAP

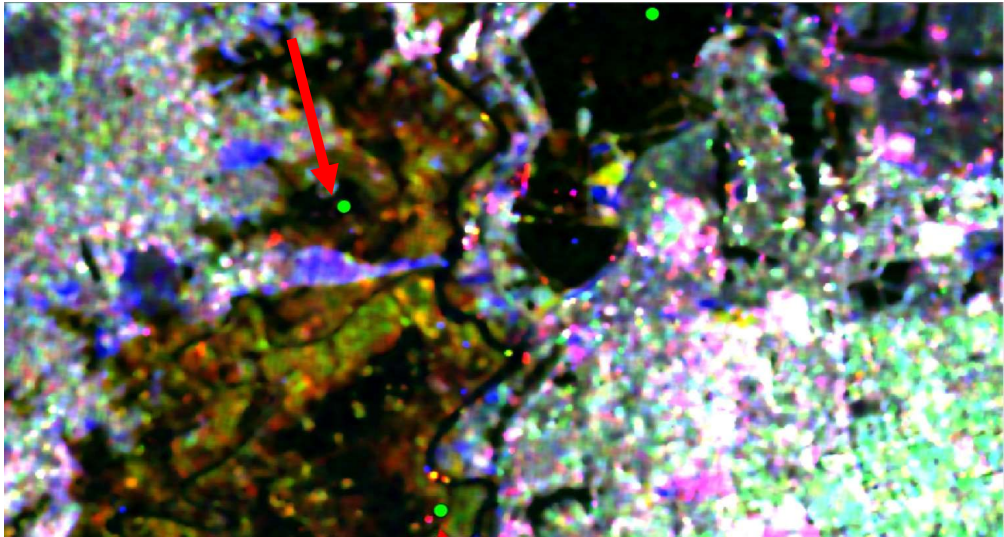
## Color interpretation with field data



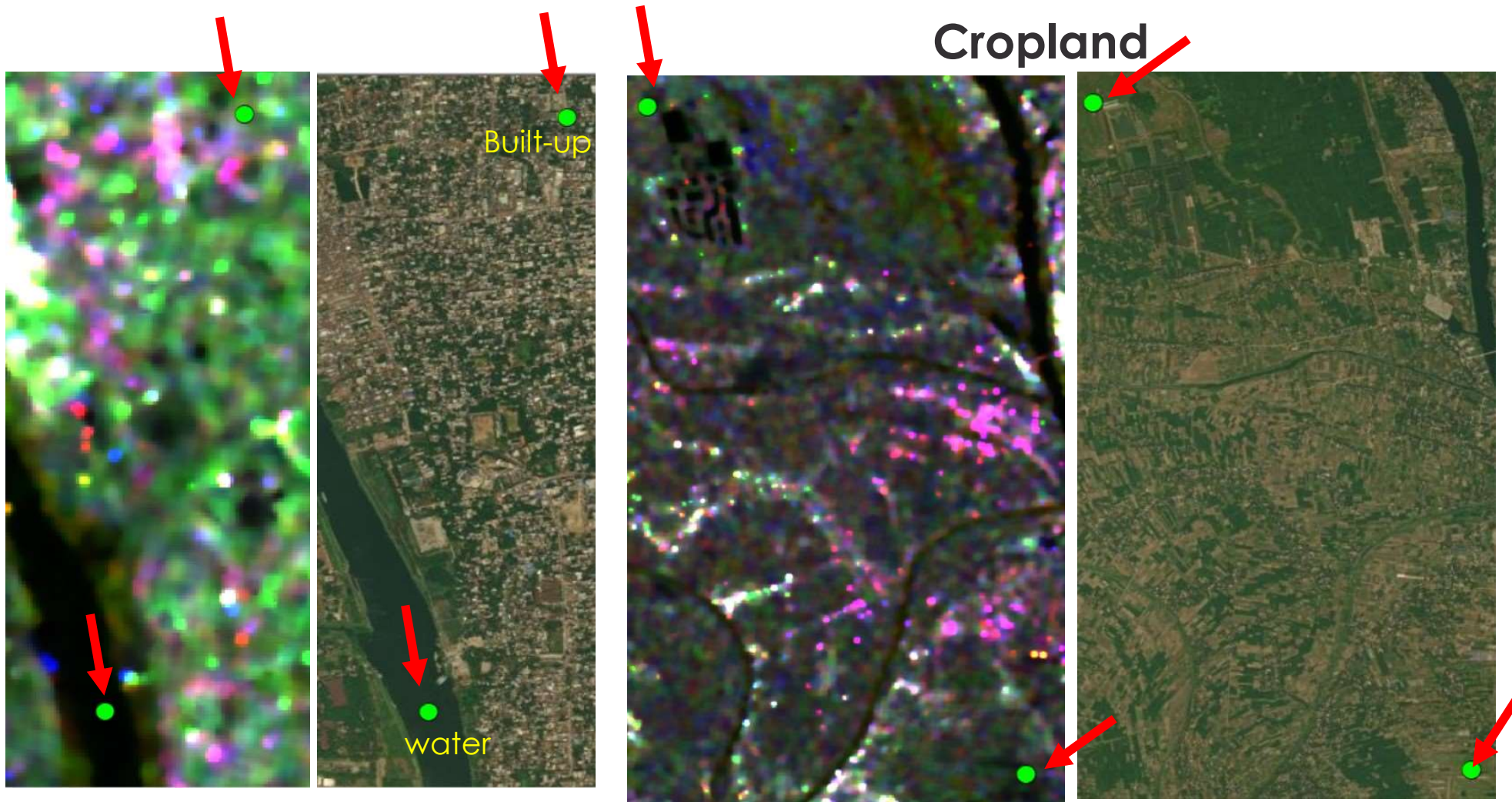
- Overlay point shapefile on the image from **day3/data**

# Image Stacking and Visualization in SNAP

## Color interpretation with field data

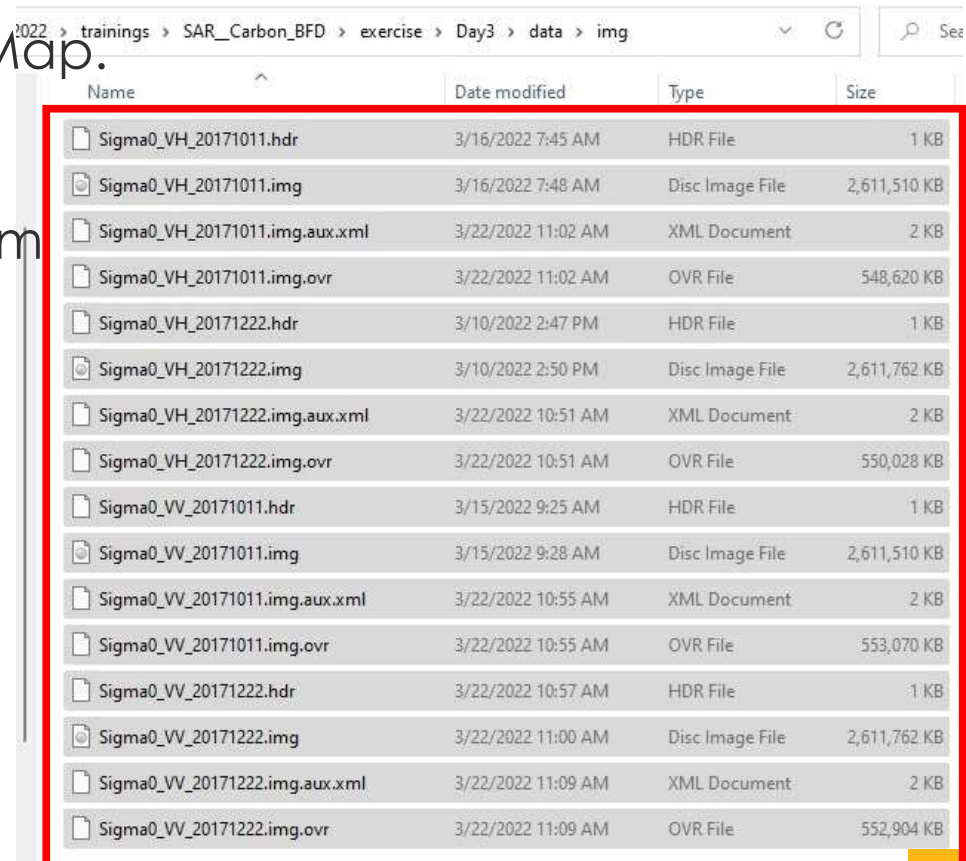


# Color interpretation with field data



## Information Extraction, Interpretation and Analysis

- Add all .img files from **data/img** in ArcMap.
- Overlay point shapefile (field\_plots\_gcs2.shp) on the image from day3/data

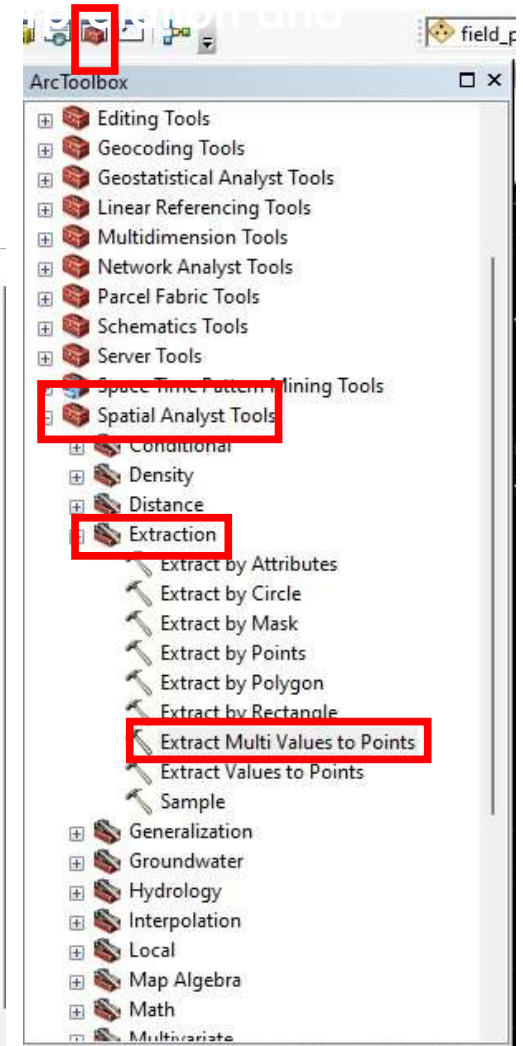
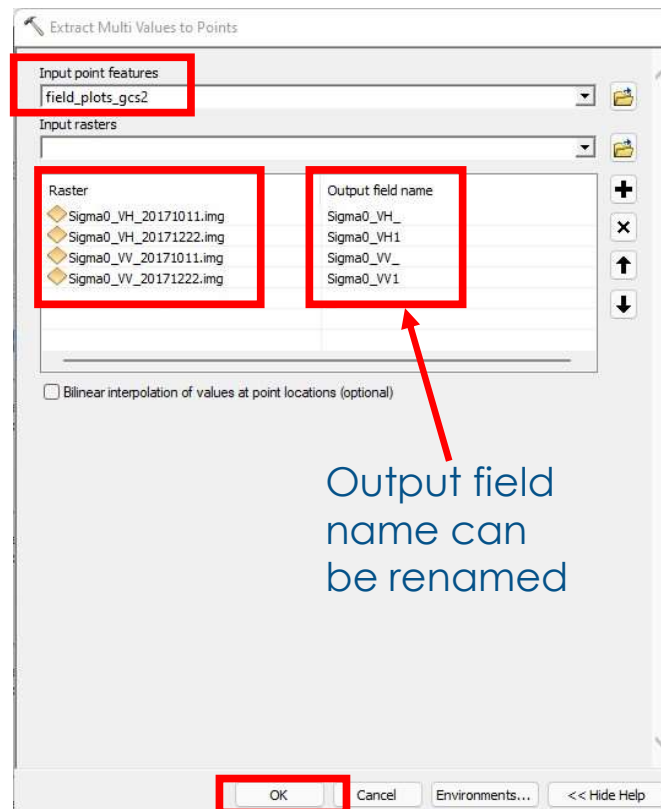


2022 > trainings > SAR\_Carbon\_BFD > exercise > Day3 > data > img

Name	Date modified	Type	Size
Sigma0_VH_20171011.hdr	3/16/2022 7:45 AM	HDR File	1 KB
Sigma0_VH_20171011.img	3/16/2022 7:48 AM	Disc Image File	2,611,510 KB
Sigma0_VH_20171011.img.aux.xml	3/22/2022 11:02 AM	XML Document	2 KB
Sigma0_VH_20171011.img.ovr	3/22/2022 11:02 AM	OVR File	548,620 KB
Sigma0_VH_20171222.hdr	3/10/2022 2:47 PM	HDR File	1 KB
Sigma0_VH_20171222.img	3/10/2022 2:50 PM	Disc Image File	2,611,762 KB
Sigma0_VH_20171222.img.aux.xml	3/22/2022 10:51 AM	XML Document	2 KB
Sigma0_VH_20171222.img.ovr	3/22/2022 10:51 AM	OVR File	550,028 KB
Sigma0_VV_20171011.hdr	3/15/2022 9:25 AM	HDR File	1 KB
Sigma0_VV_20171011.img	3/15/2022 9:28 AM	Disc Image File	2,611,510 KB
Sigma0_VV_20171011.img.aux.xml	3/22/2022 10:55 AM	XML Document	2 KB
Sigma0_VV_20171011.img.ovr	3/22/2022 10:55 AM	OVR File	553,070 KB
Sigma0_VV_20171222.hdr	3/22/2022 10:57 AM	HDR File	1 KB
Sigma0_VV_20171222.img	3/22/2022 11:00 AM	Disc Image File	2,611,762 KB
Sigma0_VV_20171222.img.aux.xml	3/22/2022 11:09 AM	XML Document	2 KB
Sigma0_VV_20171222.img.ovr	3/22/2022 11:09 AM	OVR File	552,904 KB

# Information Extraction, Interpretation and Analysis

- Go to Arc Toolbox > Spatial Analyst tools > Extraction > Extract Multi Values to Points



# Information Extraction, Interpretation and Analysis

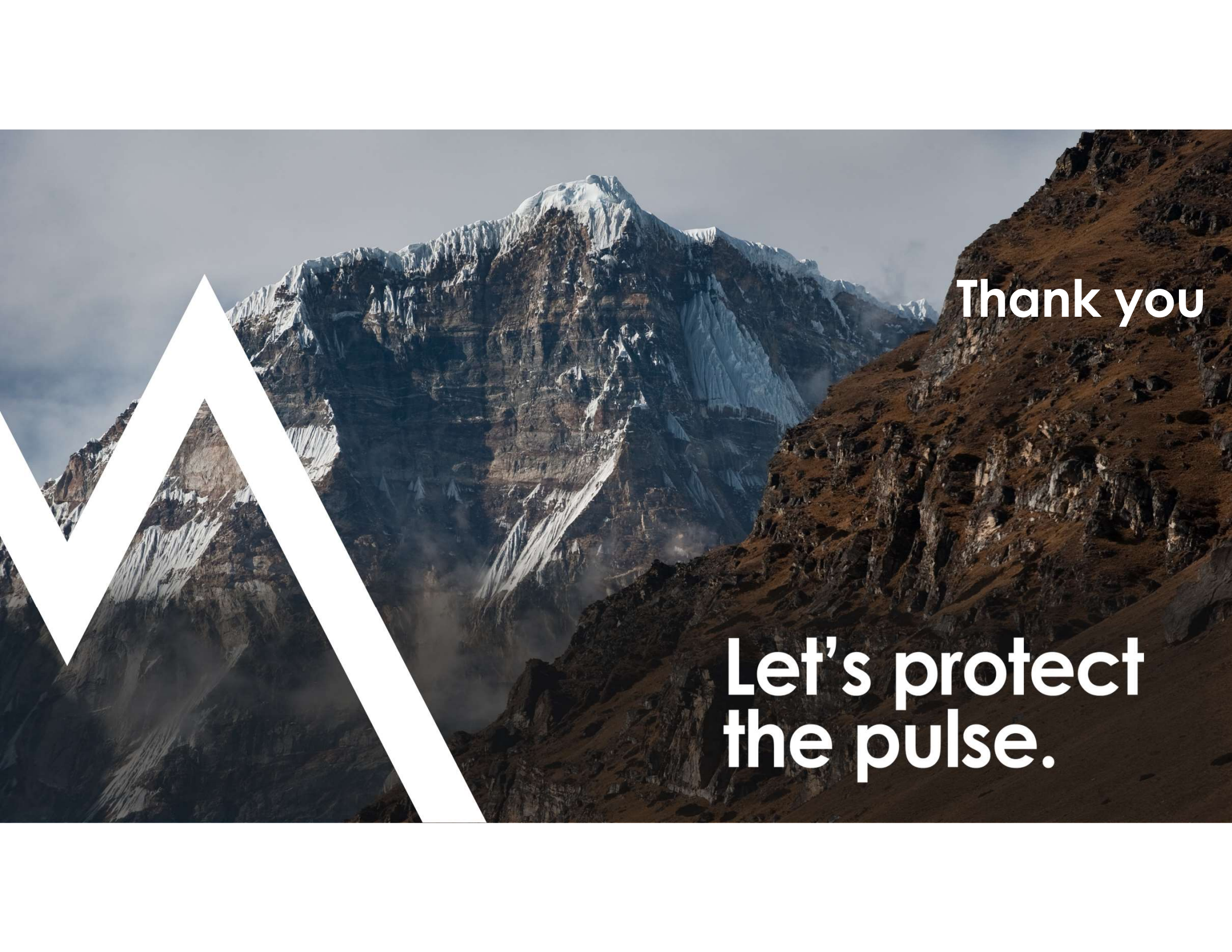
Point Values are added in the table

Analyze the results w.r.t. different Classes

field_plots_gcs2							
FID	Shape	Id	landcover	VH_10	VH_12	VV_10	VV_12
0	Point	1	builtup	0.040509	0.063497	0.155198	0.173947
1	Point	2	builtup	0.027807	0.026738	0.09536	0.083832
2	Point	3	builtup	0.058681	0.068964	0.297854	0.354104
3	Point	4	water	0.007038	0.003845	0.010177	0.008805
4	Point	5	water	0.005513	0.00594	0.017384	0.009976
5	Point	6	water	0.008013	0.005458	0.016098	0.01182
6	Point	7	cropland	0.065482	0.033832	0.230084	0.126687
7	Point	8	cropland	0.042854	0.019495	0.167807	0.127073
8	Point	9	cropland	0.027704	0.022252	0.105431	0.090594
9	Point	10	cropland	0.041994	0.025018	0.135436	0.072094
10	Point	11	others	0.006639	0.005967	0.015346	0.010015
11	Point	12	others	0.006092	0.019208	0.024278	0.079465
12	Point	13	others	0.008697	0.014031	0.033649	0.027304

**Assignment:** Extract values (dB) and analyze!!





**Thank you**

**Let's protect  
the pulse.**