# Experiment NO.3

**Title:** Exploring and Managing Raster Data: Adding Raster layers, Raster styling and Analysis , Raster mosaicking and clipping

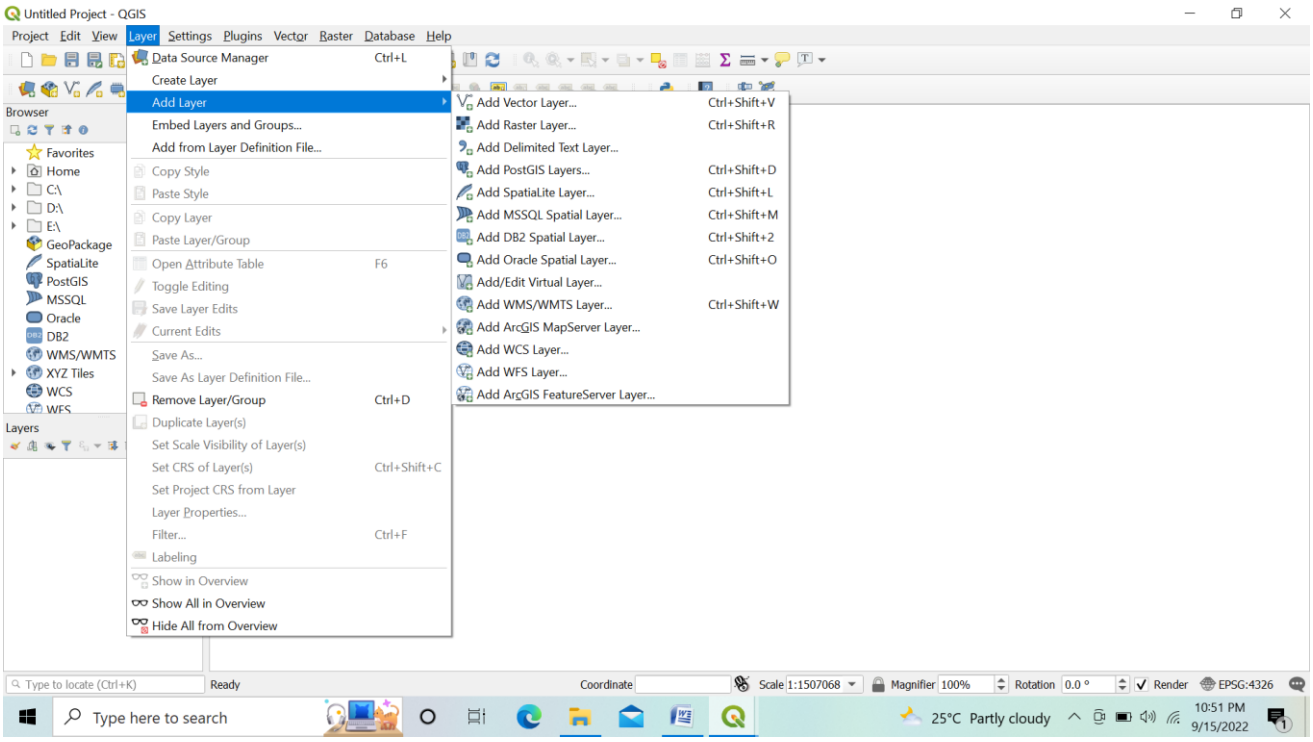
## a). Adding Raster Layer

**Step 1:**

Go to layer→ Add Layer → Add Raster Layer

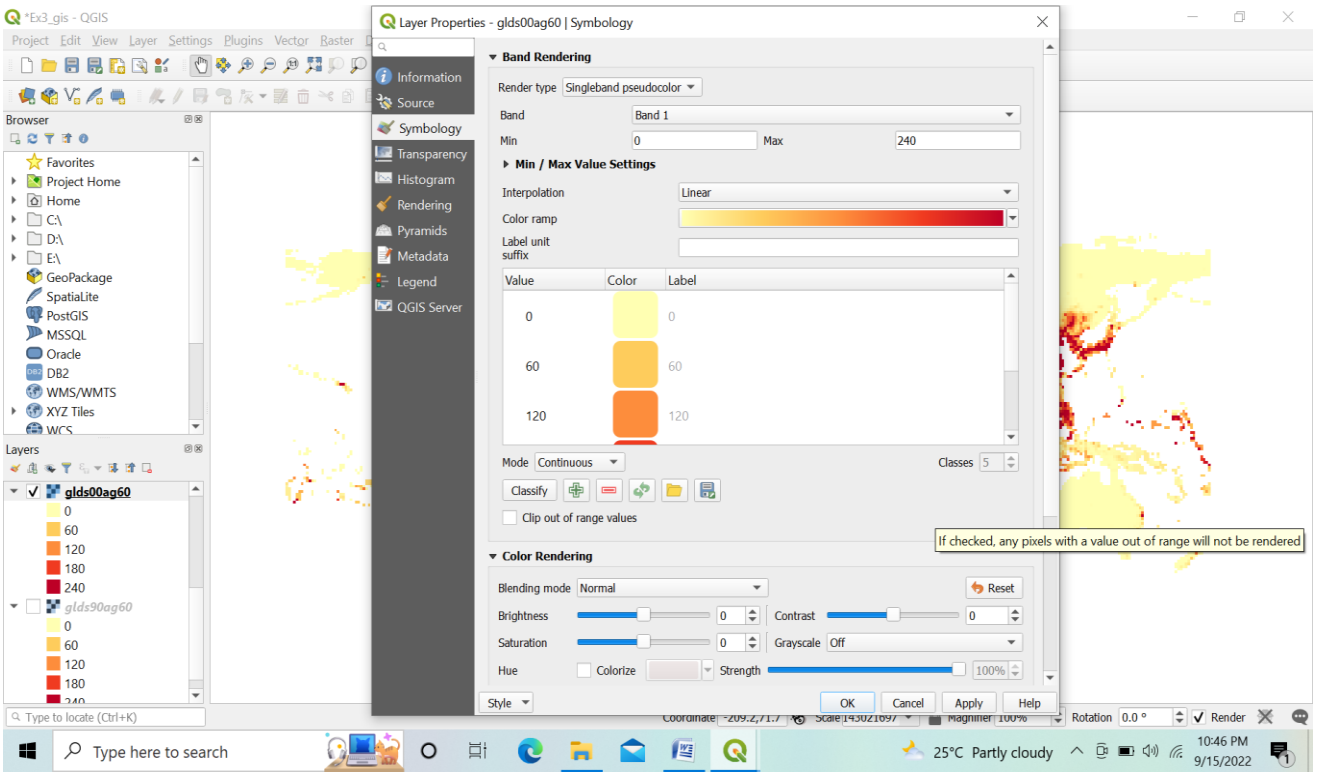
To start with analysis of population data,convert the pixel from gray scale to color.

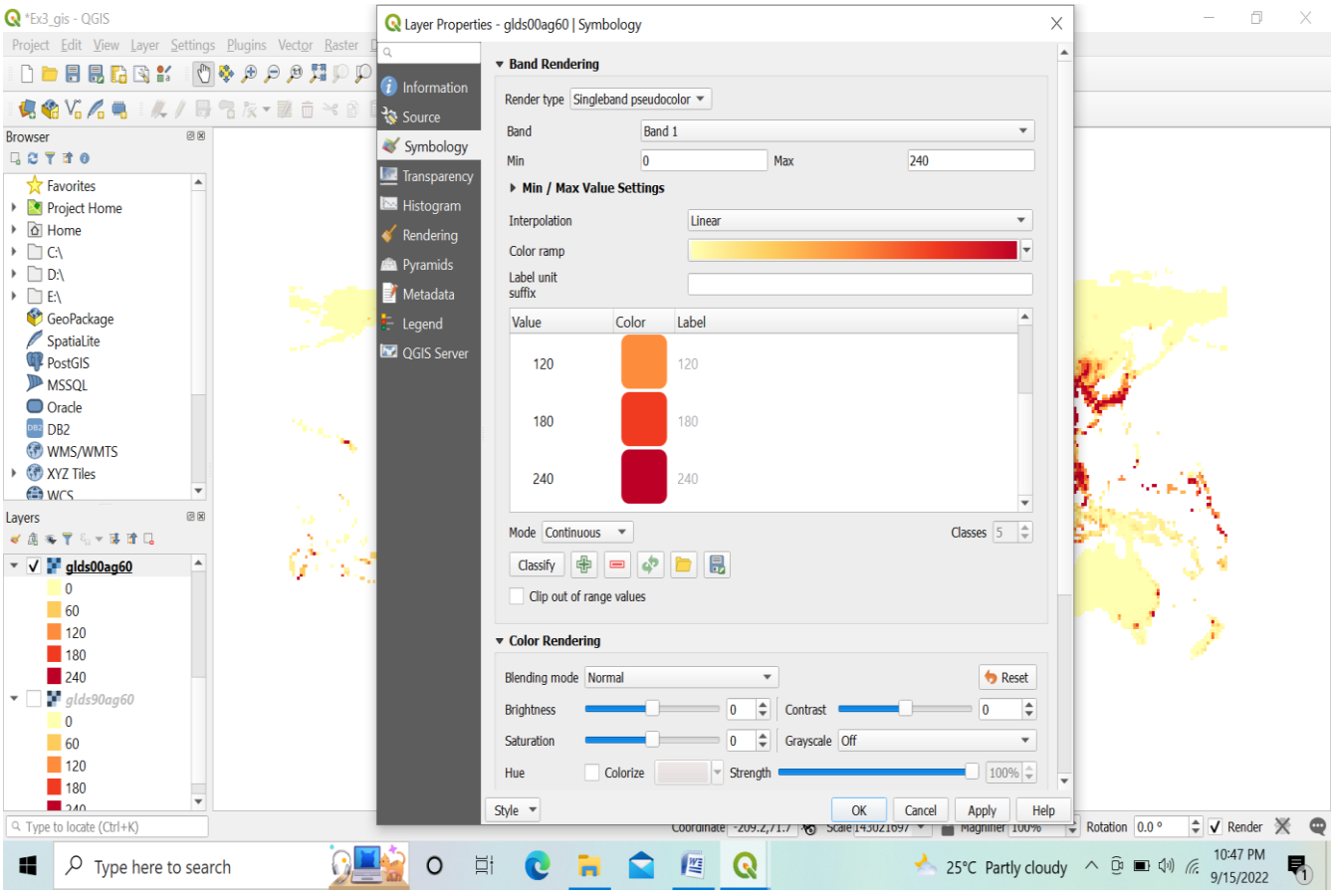
Select “glds90ag60.asc” layer from layer pane select property OR double click on it.




**Step 2:**

- Add Symbology to both data in between rang 0 to 240


*Ex3_gis - QGIS
Layer Properties - glds00ag60 | Symbology
Information
Source
Symbology
Transparency
Histogram
Rendering
Pyramids
Metadata
Legend
QGIS Server
Band Rendering
Render type
Singleband pseudocolor
Band
Band 1
Min
0
Max
240
Min / Max Value Settings
Interpolation
Linear
Color ramp
Label unit suffix
Value
Color
Label
0
60
120
Mode
Continuous
Classes
Classify
Clip out of range values
If checked, any pixels with a value out of range will not be rendered
Color Rendering
Blending mode
Normal
Reset
Brightness
Contrast
Saturation
Grayscale
Off
Hue
Colorize
Strength
100%
Style
OK
Cancel
Apply
Help
Browser
Favorites
Project Home
Home
C:\
D:\
E:\
GeoPackage
SpatiaLite
PostGIS
MSSQL
Oracle
DB2
WMS/WMTS
XYZ Tiles
WCS
Layers
glds00ag60
glds90ag60
Type to locate (Ctrl+K)
Rotation
Render
Type here to search
25°C Partly cloudy
10:46 PM
9/15/2022


*Ex3_gis - QGIS
Layer Properties - glds00ag60 | Symbology
Information
Source
Symbology
Transparency
Histogram
Rendering
Pyramids
Metadata
Legend
QGIS Server
Band Rendering
Render type
Singleband pseudocolor
Band
Band 1
Min
0
Max
240
Min / Max Value Settings
Interpolation
Linear
Color ramp
Label unit suffix
Value
Color
Label
120
180
240
Mode
Continuous
Classes
Classify
Clip out of range values
Color Rendering
Blending mode
Normal
Reset
Brightness
Contrast
Saturation
Grayscale
Off
Hue
Colorize
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100%
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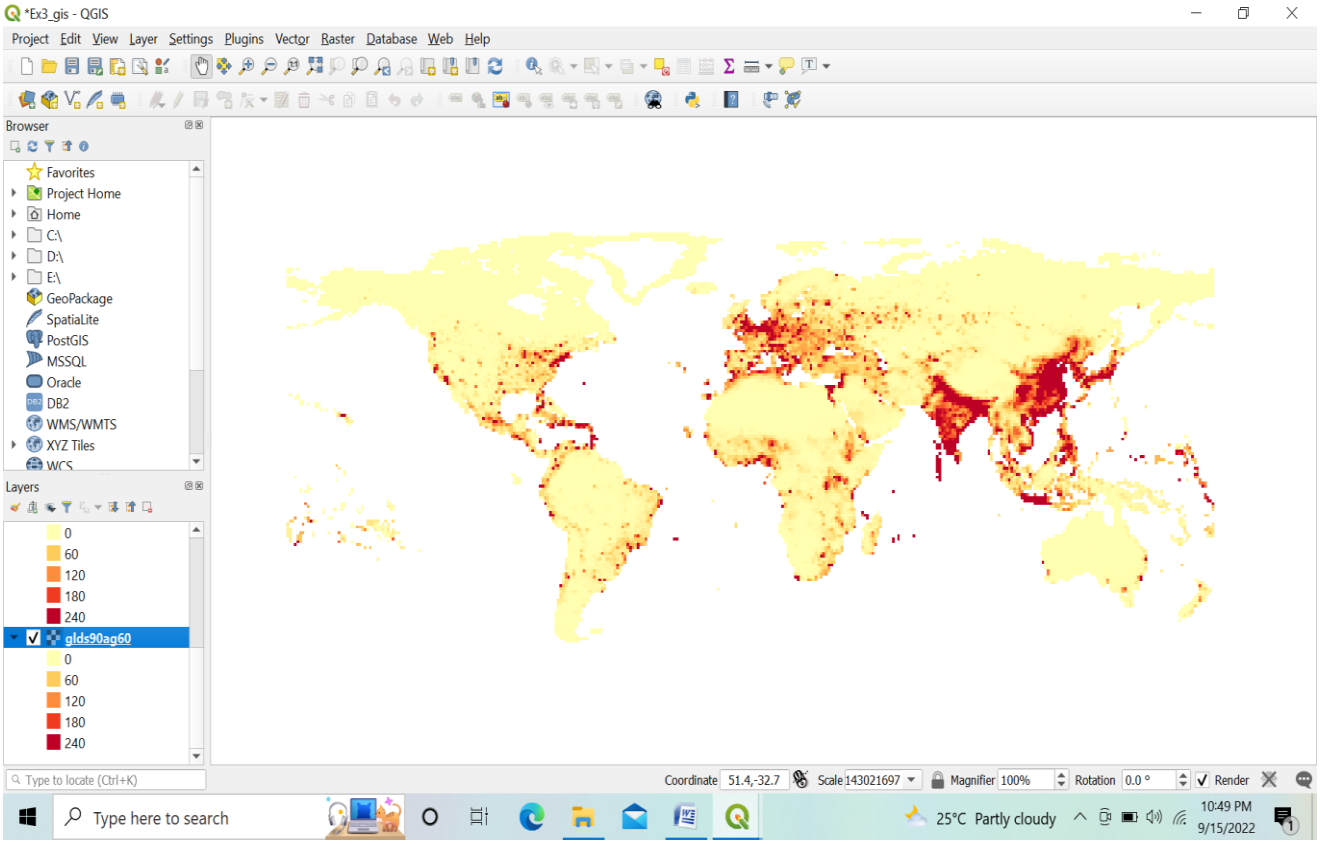
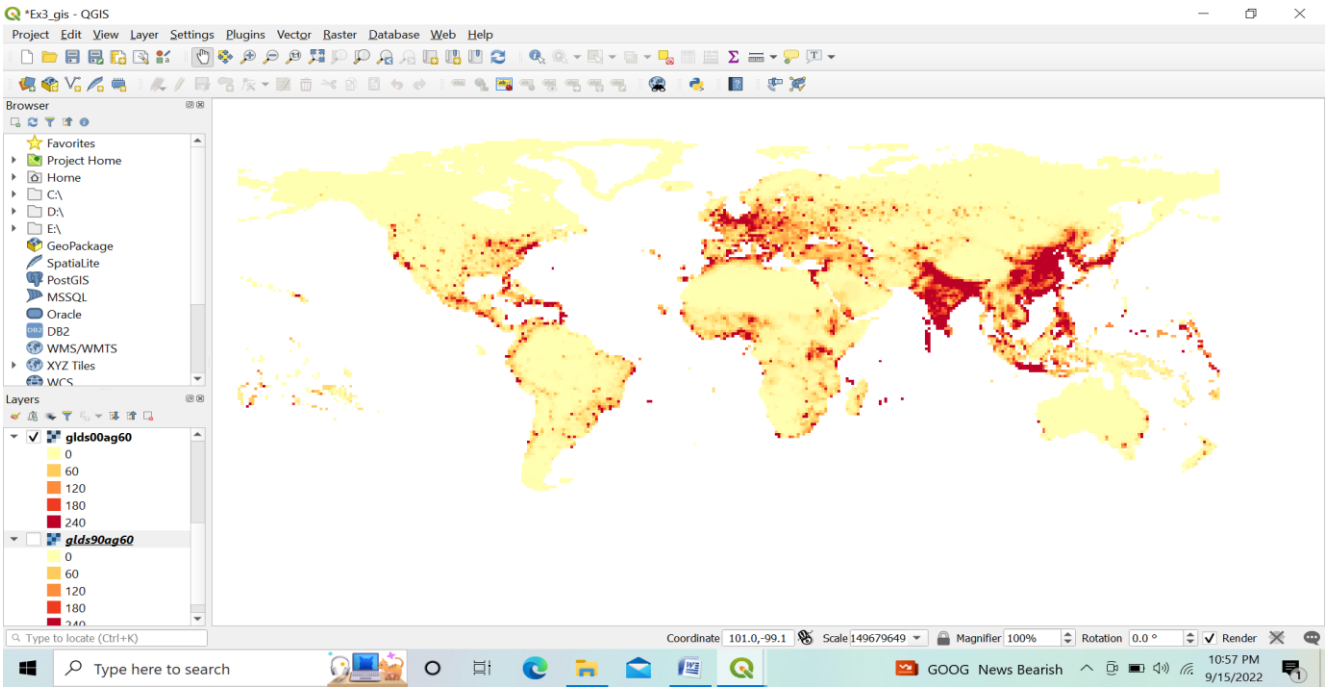
E:\
GeoPackage
SpatiaLite
PostGIS
MSSQL
Oracle
DB2
WMS/WMTS
XYZ Tiles
WCS
Layers
glds00ag60
glds90ag60
Type to locate (Ctrl+K)
Rotation
Render
Type here to search
25°C Partly cloudy
10:47 PM
9/15/2022

Press “Apply” Repeat the same for “glds00ag60.asc” layer After applying style:




We have to analyze raster data, as an example we will find areas with largest population change between

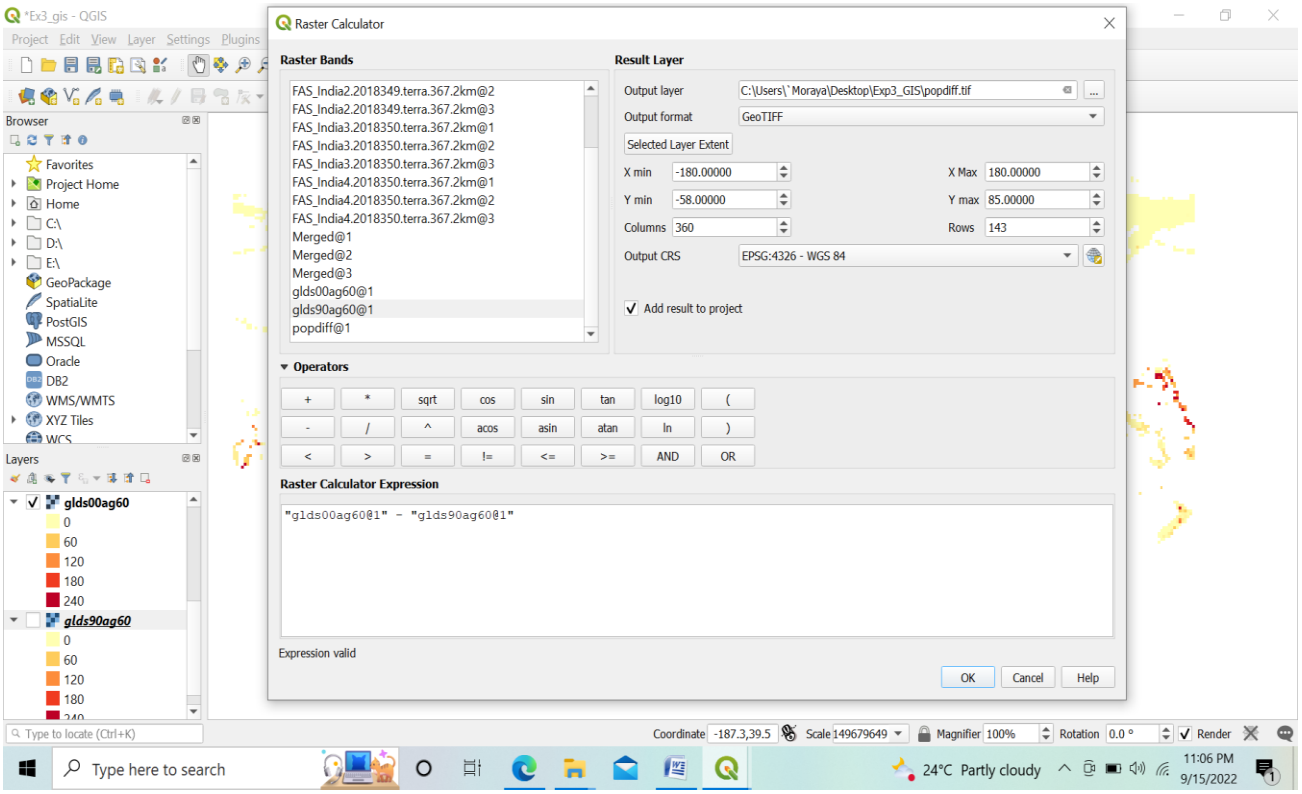
1990 And 2000, by calculating the difference between each pixel values.

**Raster calculation:**

Go to Raster → Raster Calculator

Put the expression "glds00ag60@1" - "glds90ag60@1"

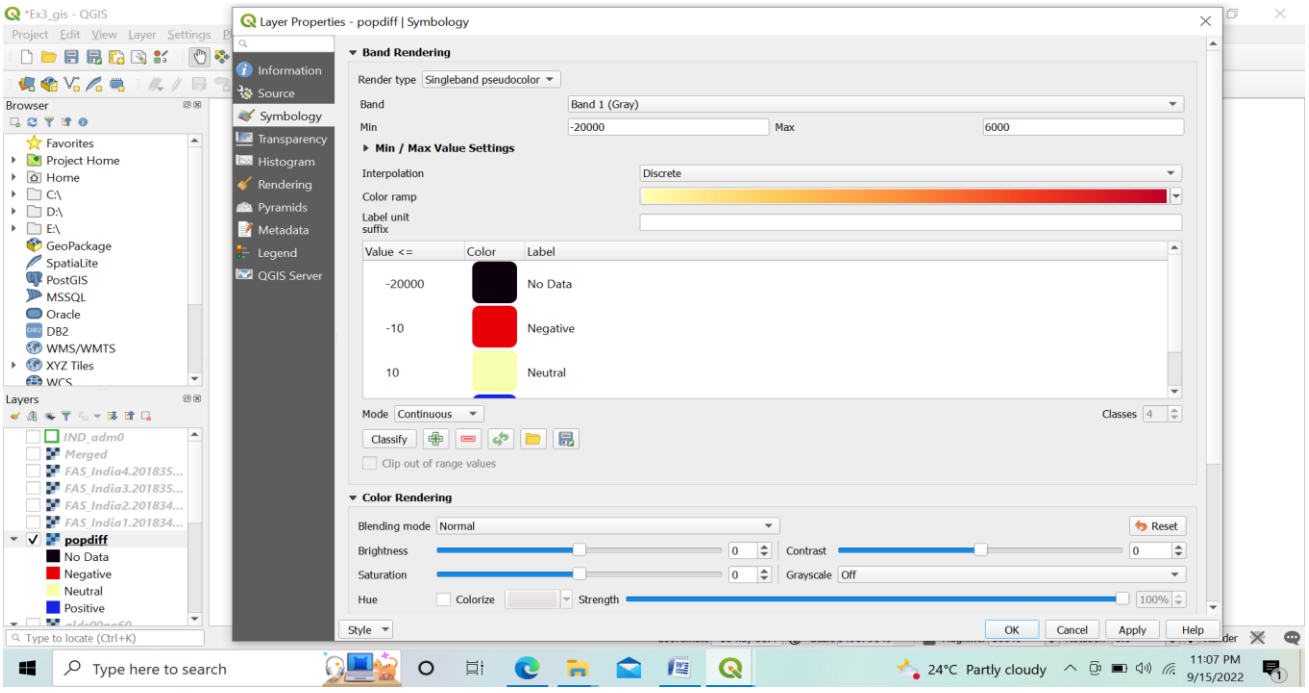
Select the output file location & name and Press OK




➢ Remove the other two layers i.e. glds00ag60.asc and glds90ag60.asc

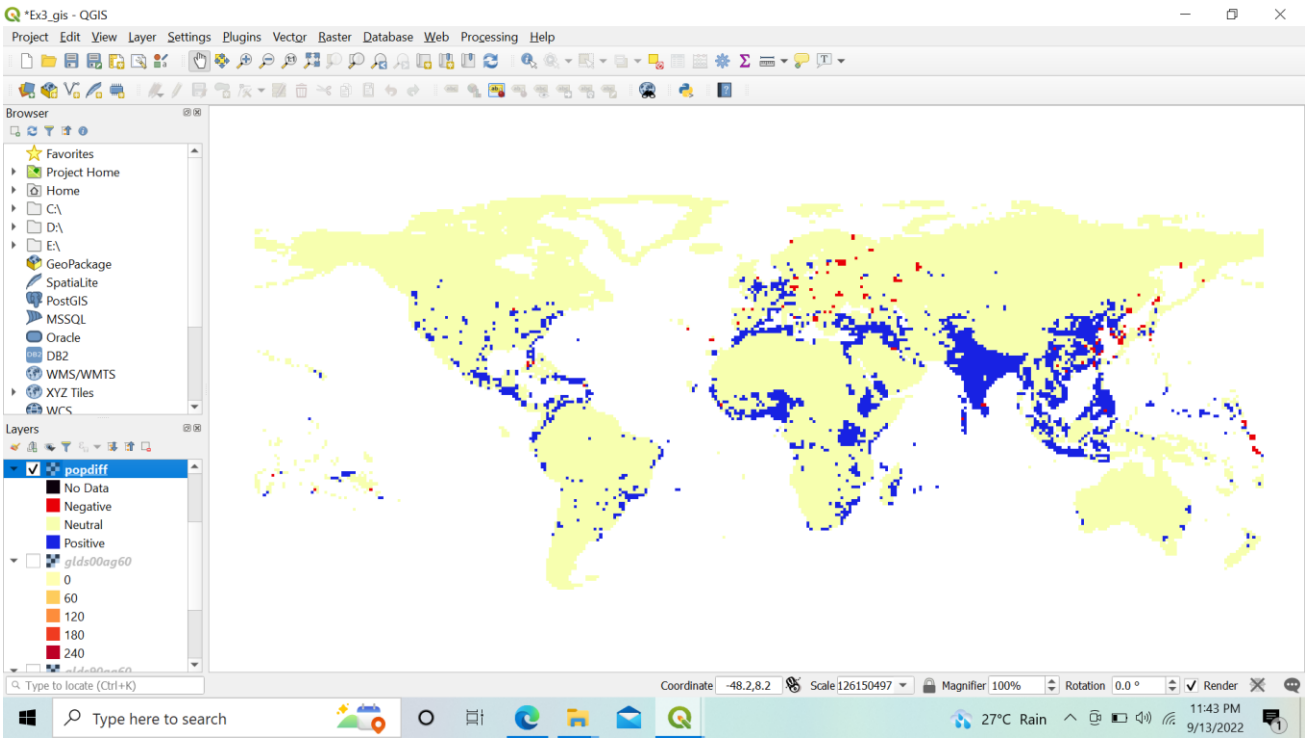
➢ Double click on pop_diff layer.

➢ Select symbology



Set Render Type to “Single band Pseudo color”, Interpolation as Discrete, and remove all classification and add as shown in figure above using button. After all settings press “OK”.

➢ Layer will appear like given below.




Explore an area of your choice and check the raster band value to verify the classification rule.

➢ The red pixel shows negative changes and blue shows positive changes.

## c) Raster Mosaicking and Clipping

➢ Go to Layer → Add Layer → Add Raster Layer

➢ Select the following “.tif” raster images for India from data folder.
FAS_India1.2018349.terra.367.2km.tif

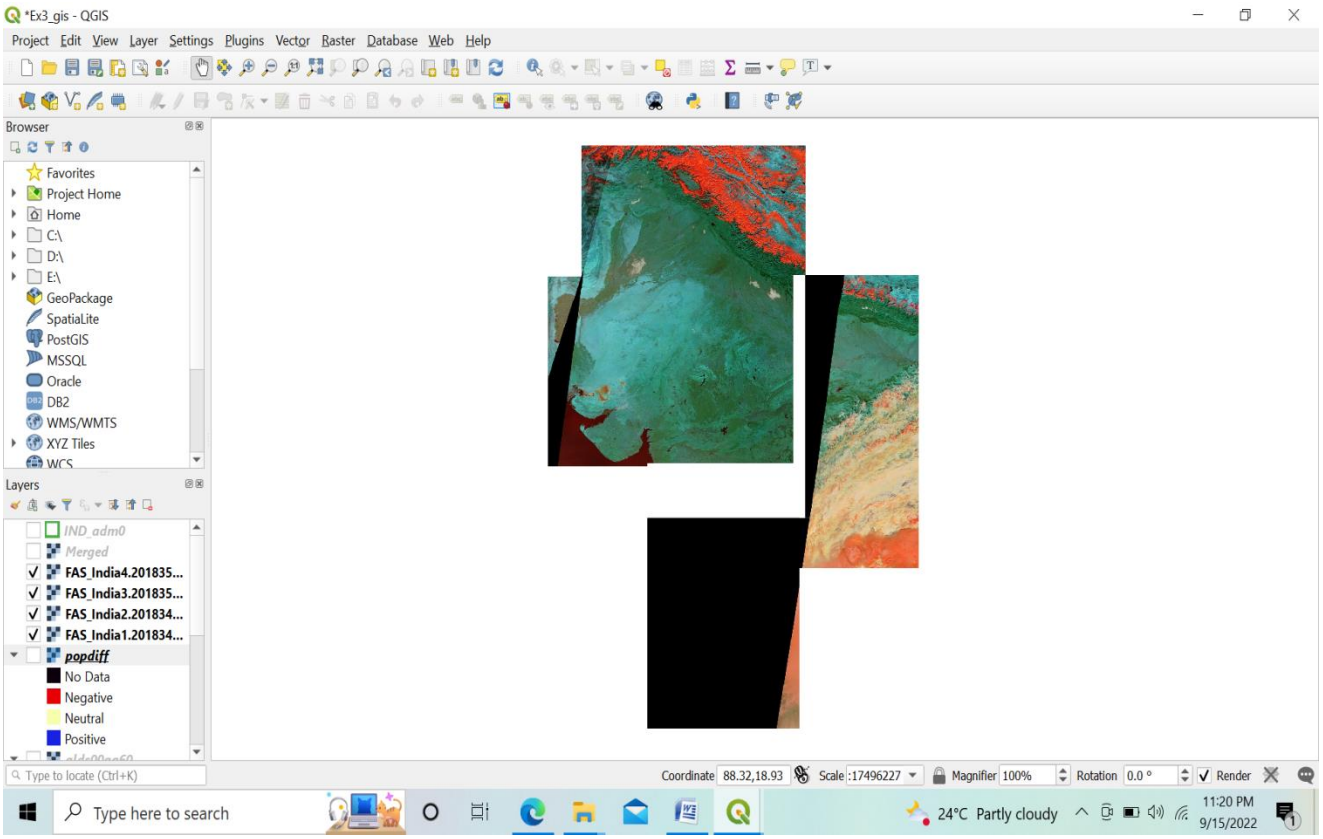
FAS_India2.2018349.terra.367.2km.tif

FAS_India3.2018349.terra.367.2km.tif

FAS_India4.2018349.terra.367.2km.tif

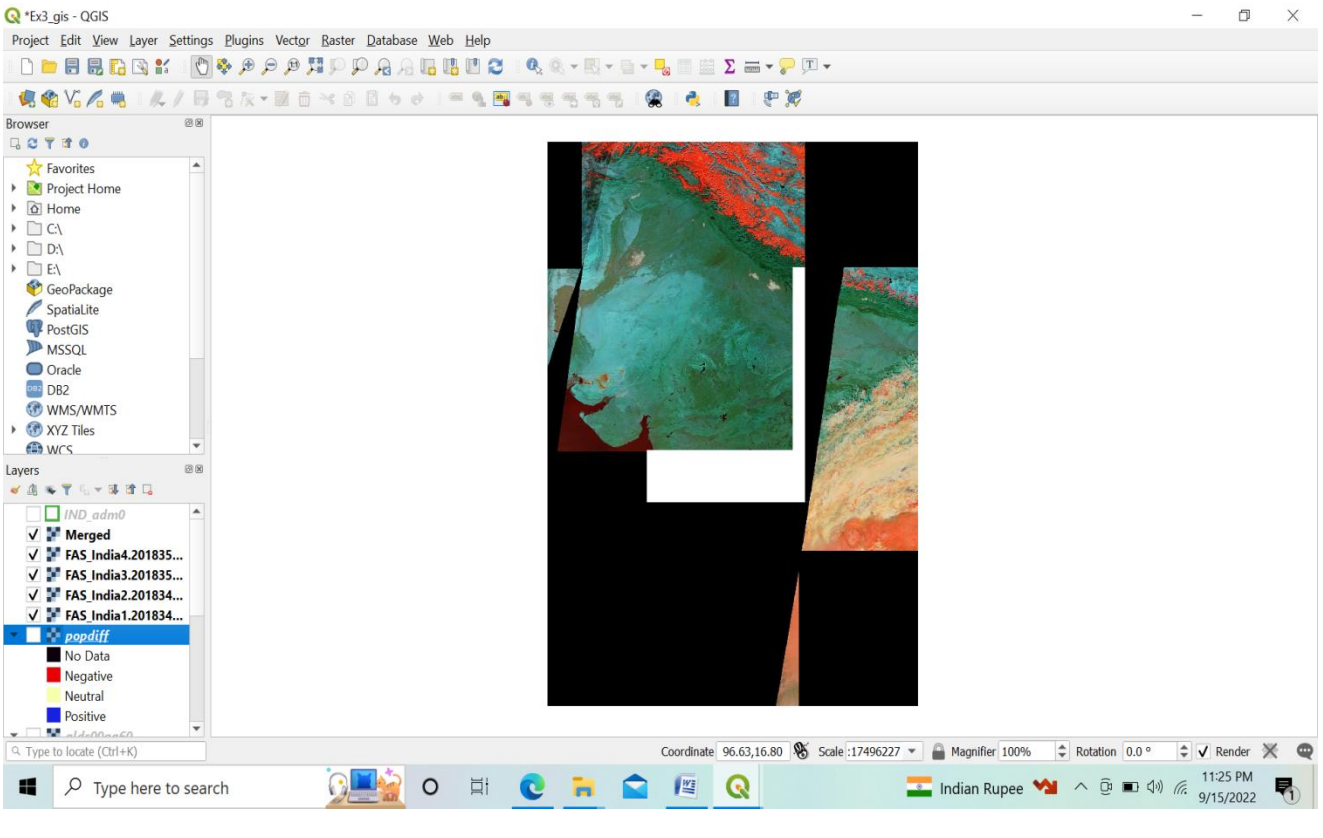
➢ Press open

➢ In data source manager | Raster window click Add.

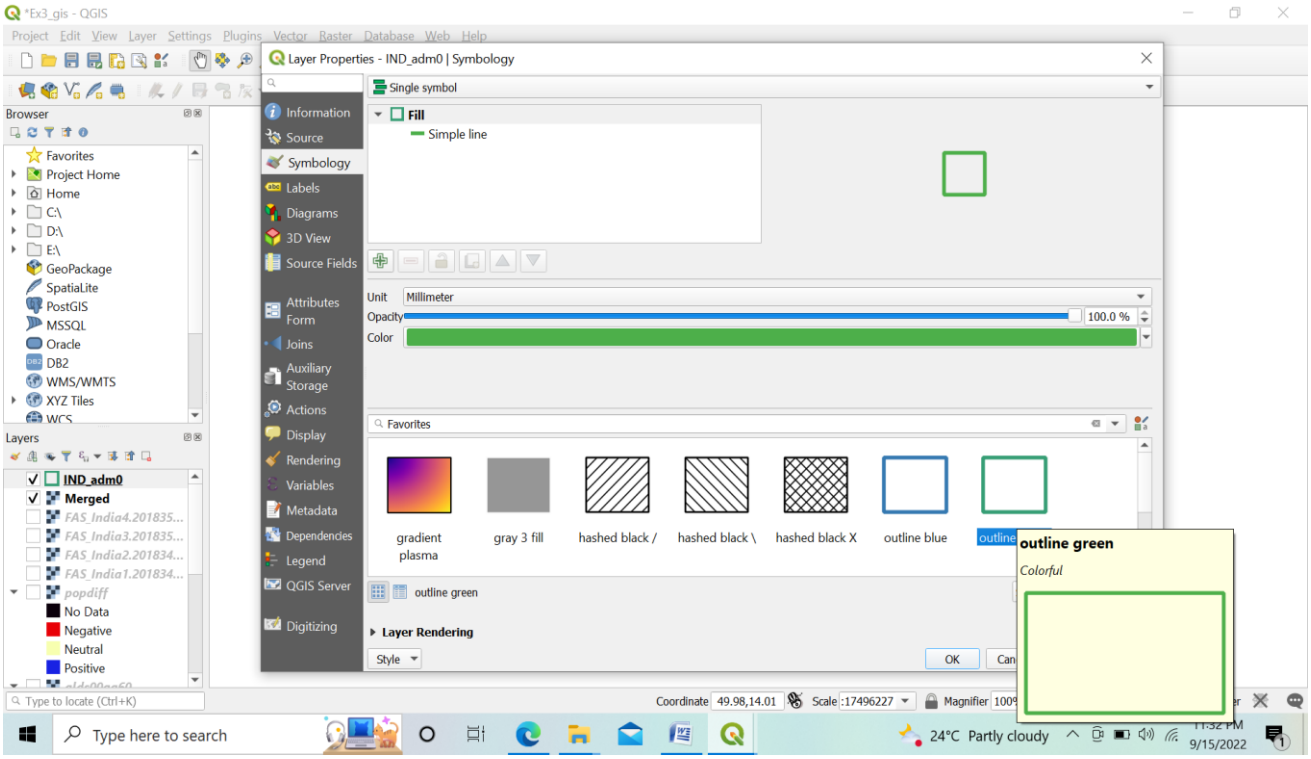


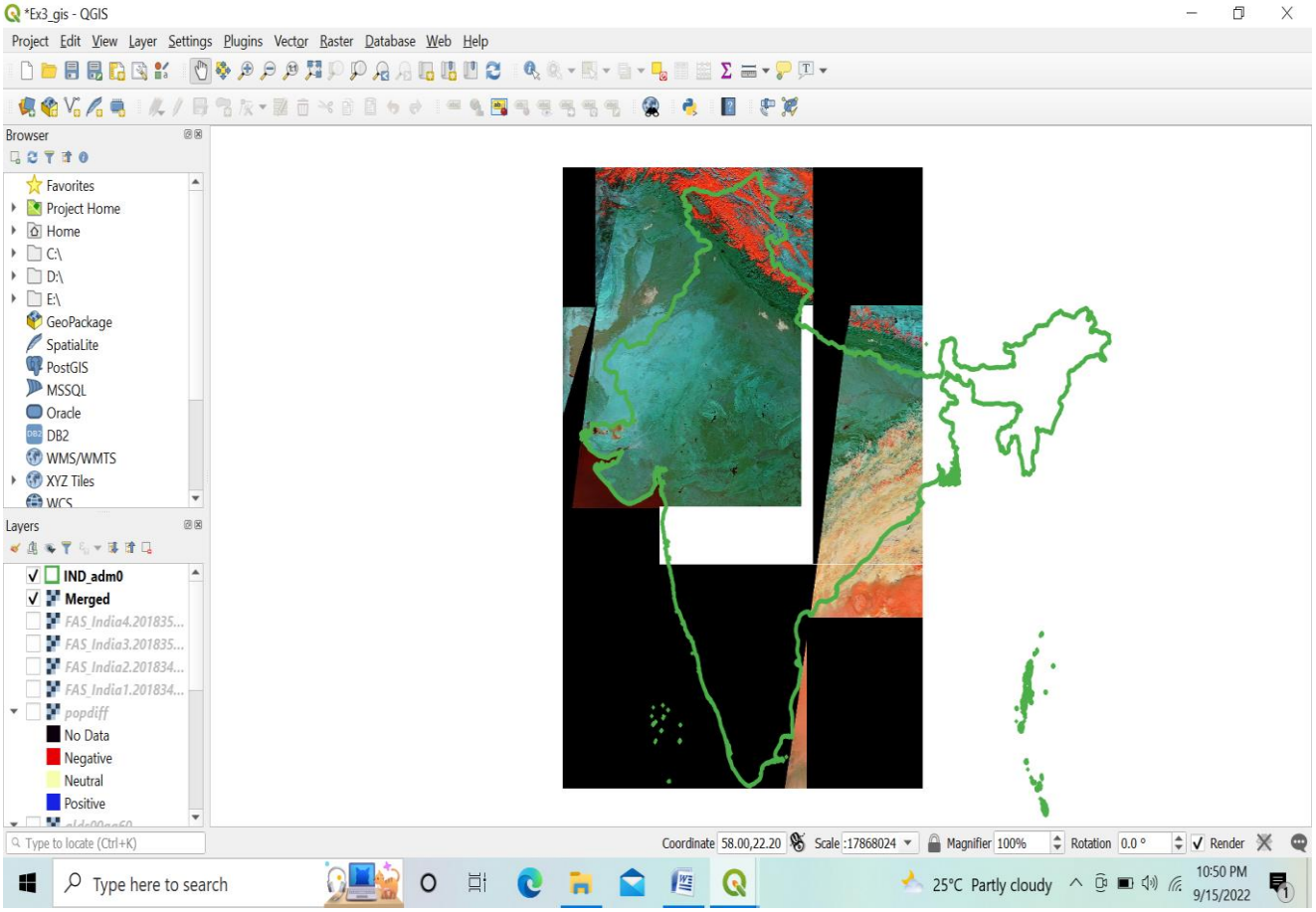

➢ Go to Raster → Miscellaneous → Merge. In merge dialog window select above 4 layers & press ok.Save the file with name Merge_file.tif

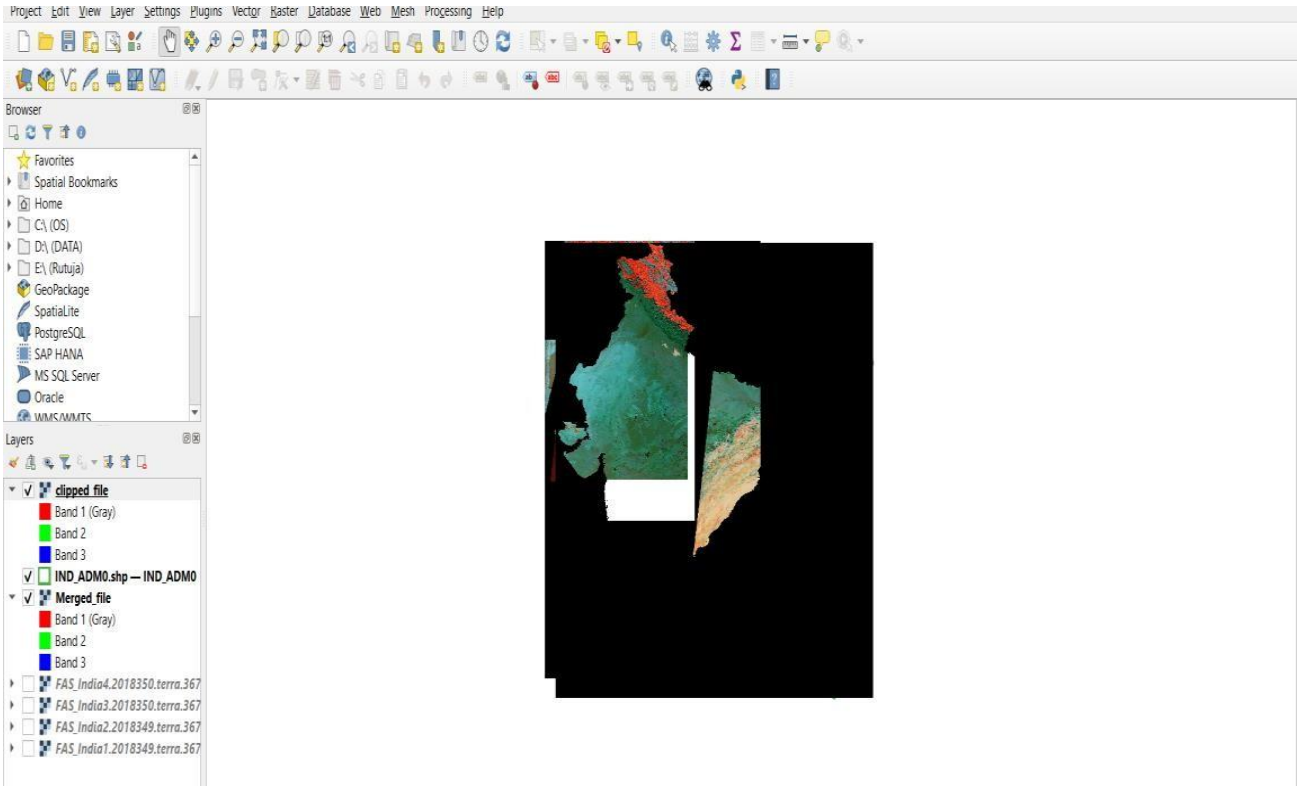
Press run close the Merge window dialog box.



You can now deselect other layers and only keep the merged raster file.
Go to Layer→ Add Vector Layer → Select
Add IND_adm0.shp file.



Go to Raster → Extraction → Clip Raster by Mask Layer
Select the merge raster image as input and Ind_adm0 as mask layer.
Select a file name and location for clipped raster as Clipped_File.tif
Press RUN

After Clipping :