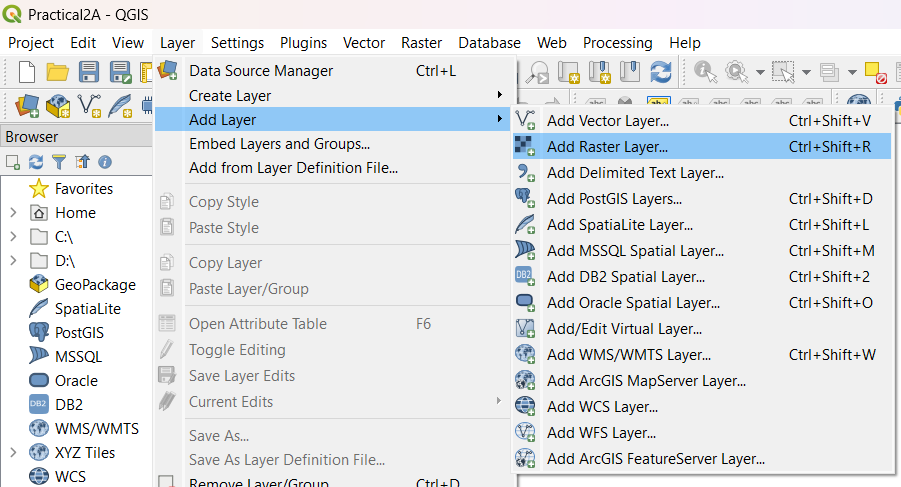
**PRACTICAL 2**

Aim: To Explore and Manage Raster data

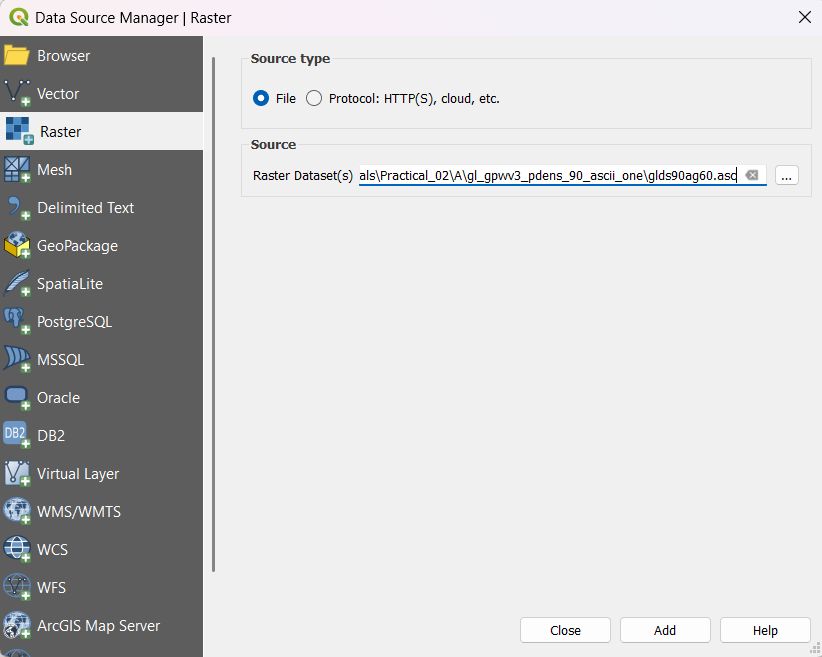
1. **Adding Raster Layer**

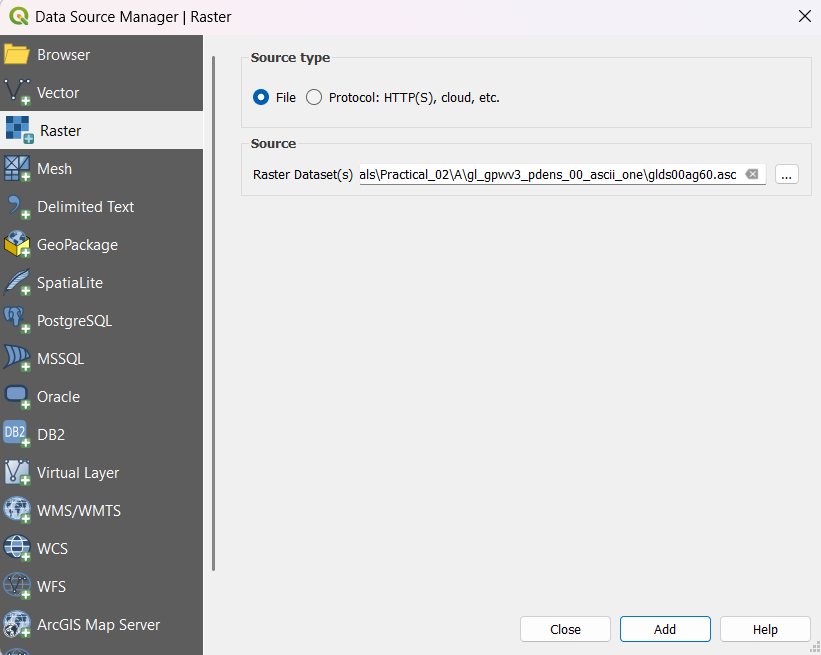
Procedure:

* From menu bar select Layer → Add Layer → Add Raster Layer

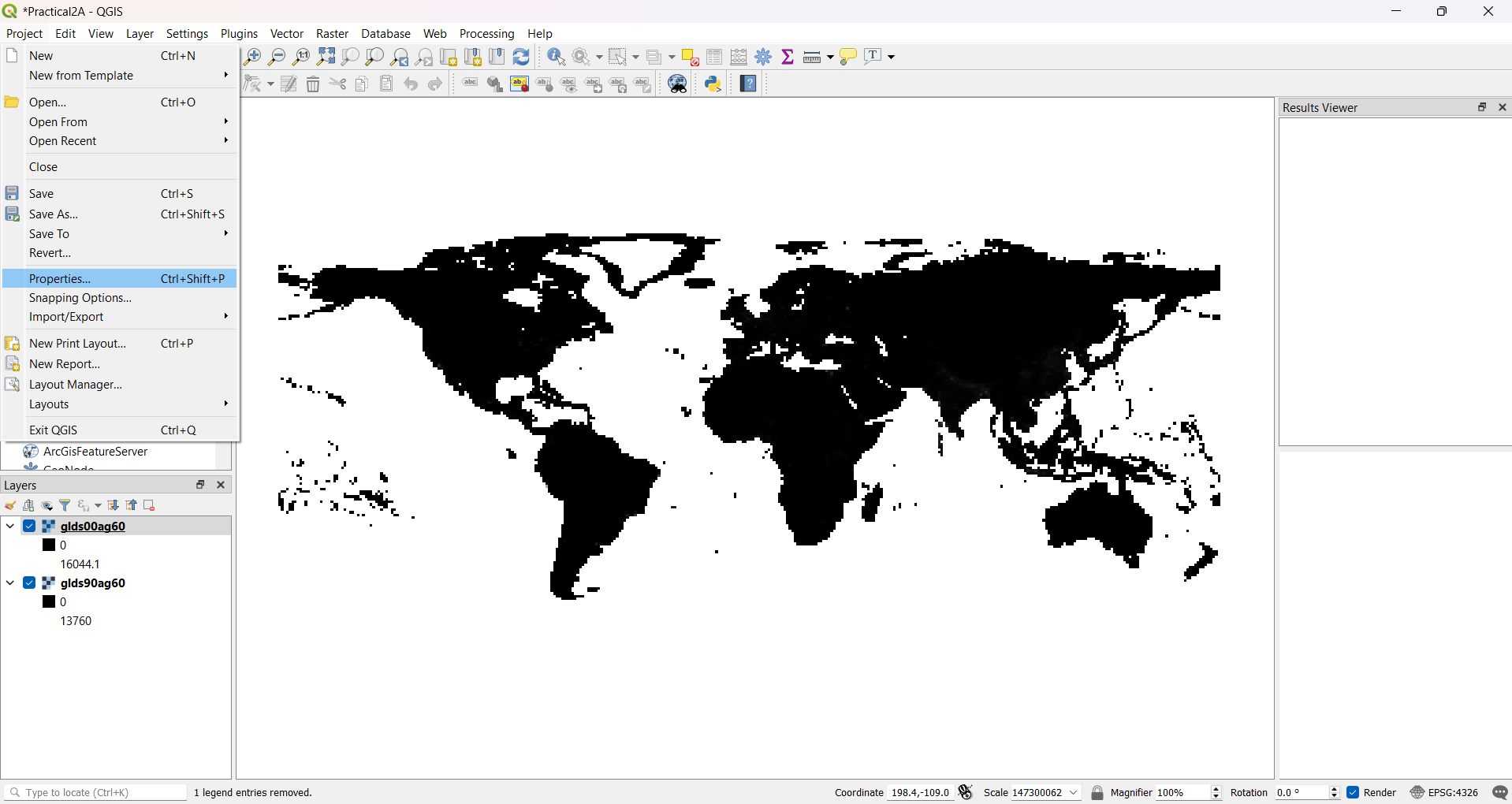


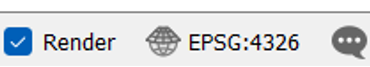
* Select Gridded Population of the World (GPW) v3 dataset from Columbia University, Population Density Grid for the entire globe in ASCII format and for the year 1990 and 2000. “\GIS\_Workshop\Practicals\Practical\_02\A\Data\gl\_gpwv3\_pdens\_90\_ascii\_one\glds90ag60.asc” “\GIS\_Workshop\Practicals\Practical\_02\A\Data\gl\_gpwv3\_pdens\_90\_ascii\_one\glds00ag60.asc”



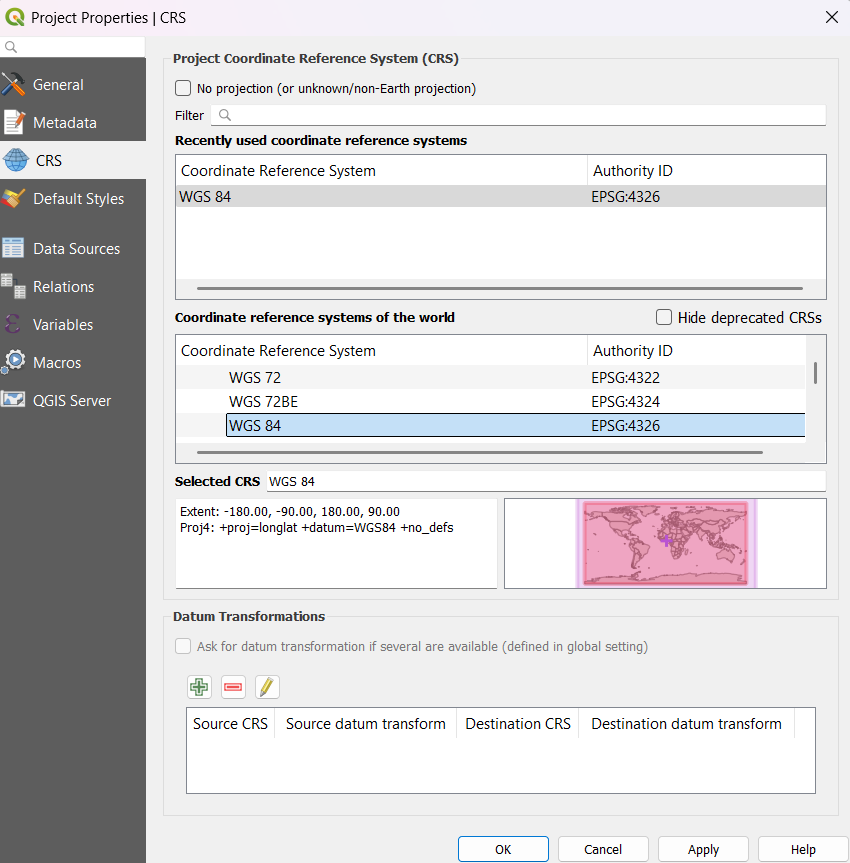


* Go to Project → Properties OR Press the Set CRS option on bottom right corner.





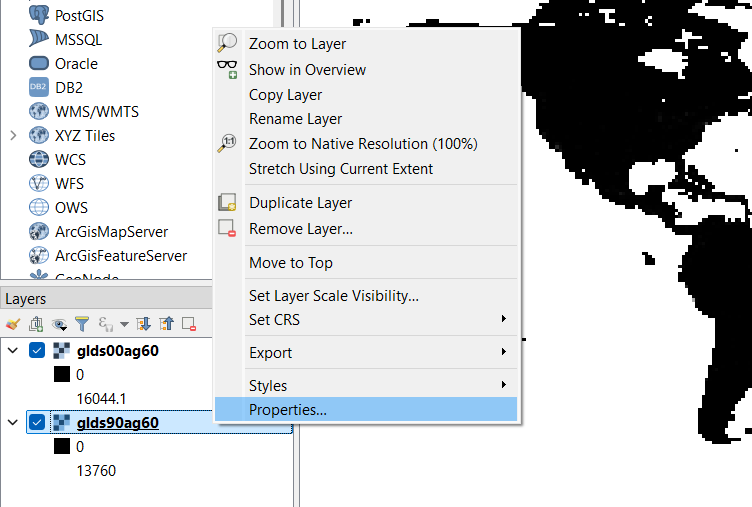
* Select WGS 84 EPSG: 4326 and Press OK



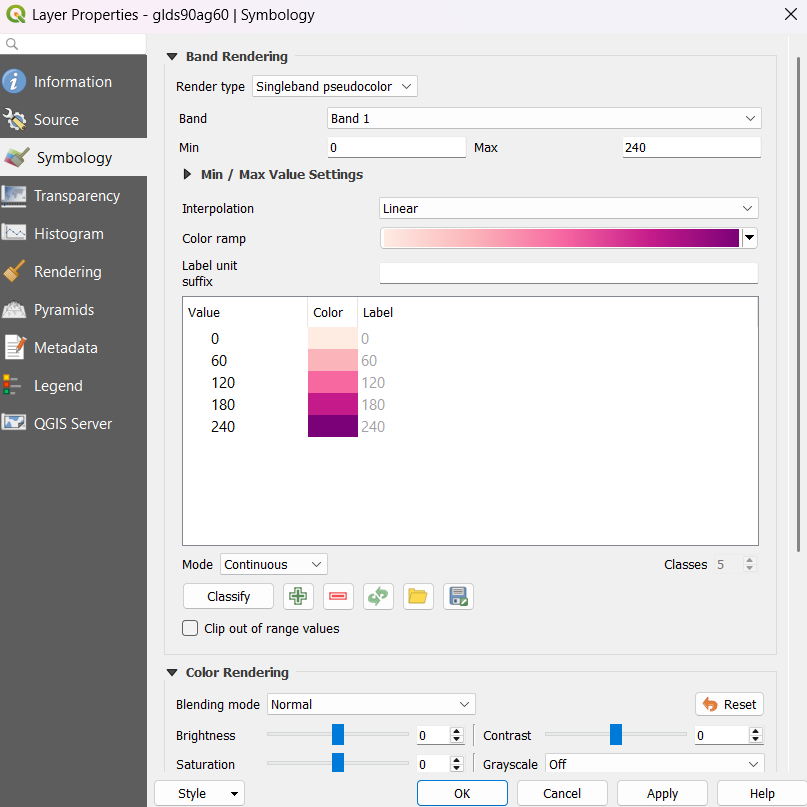
1. **Raster Styling and Analysis**

Procedure:

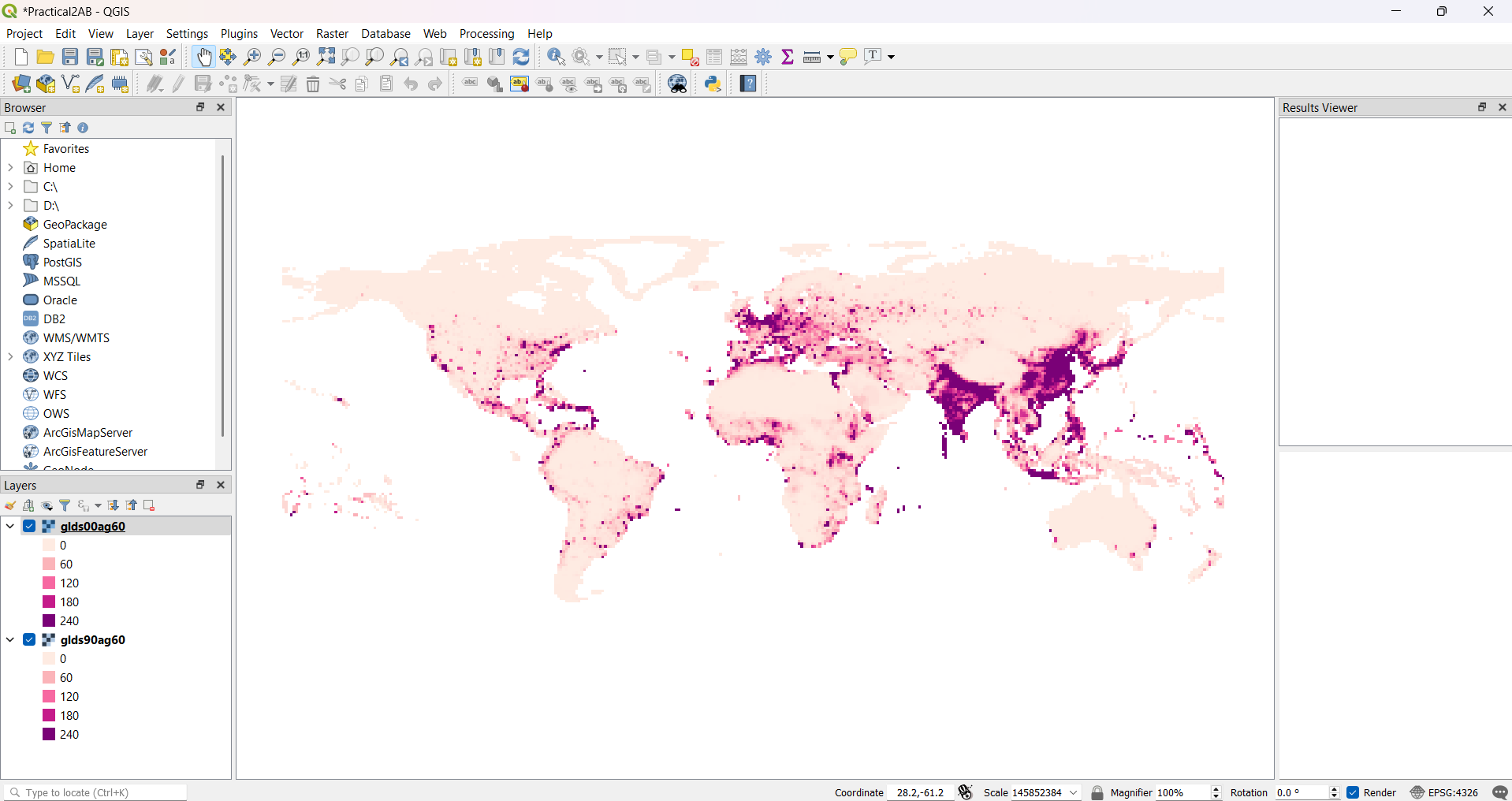
* To start with analysis of population data, convert the pixel from grayscale to Color. Select “glds90ag60.asc” Layer form layer Pane → select property OR double click on it. Select Symbology



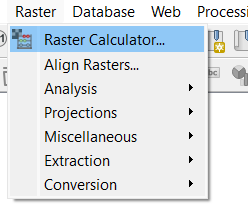
* Select Render Type as “Singleband pseudocolor”. Min=0 and Max=240. Select the Color Ramp. Press “APPLY” .



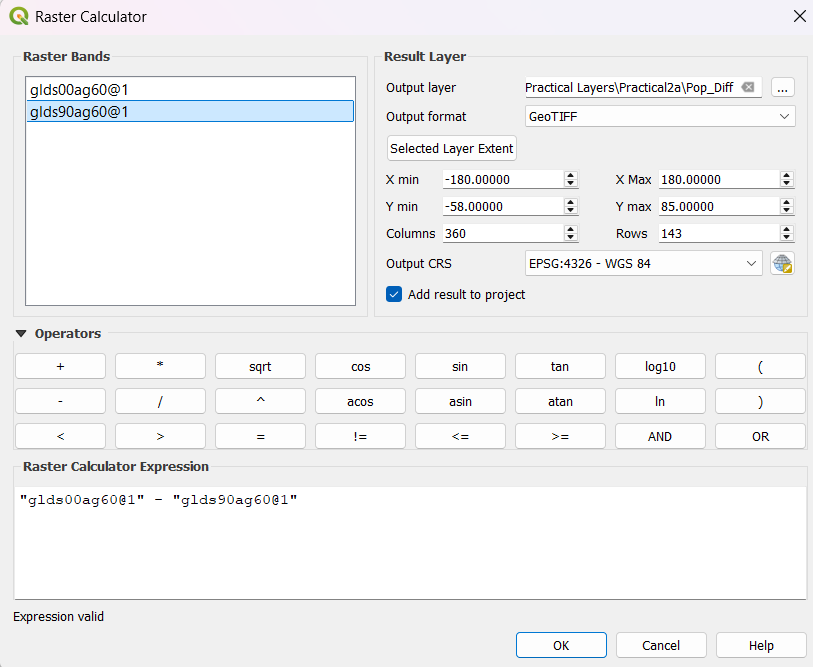
* Repeat the same for “glds00ag60.asc” Layer
* Layer output after applying style.



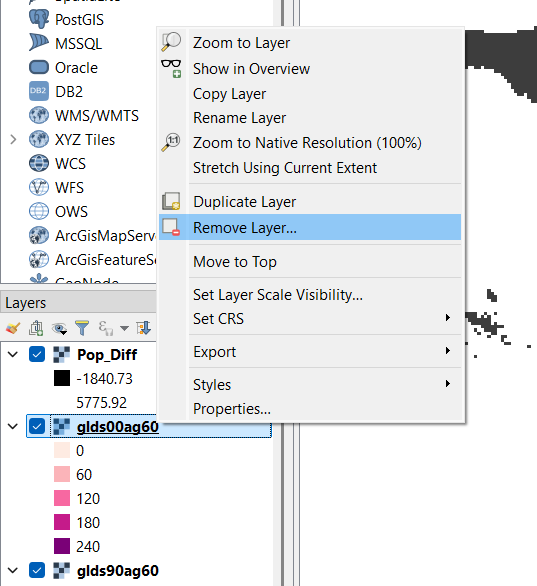
* Go to Raster → Raster Calculator



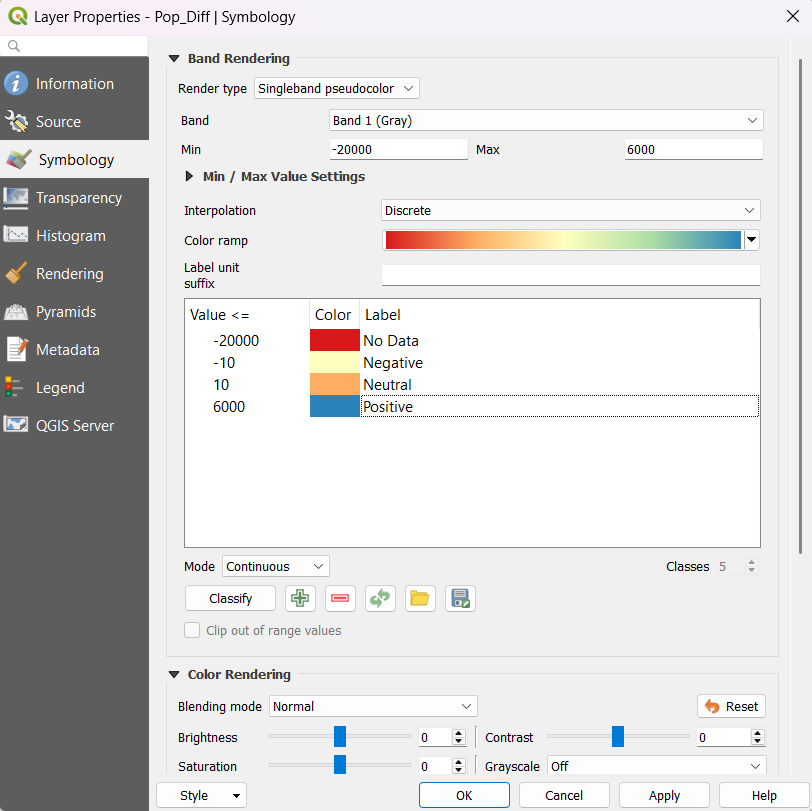
* Put the expression "glds00ag60@1" - "glds90ag60@1"
* Select the output file location & name as Pop\_Diff and Press OK.



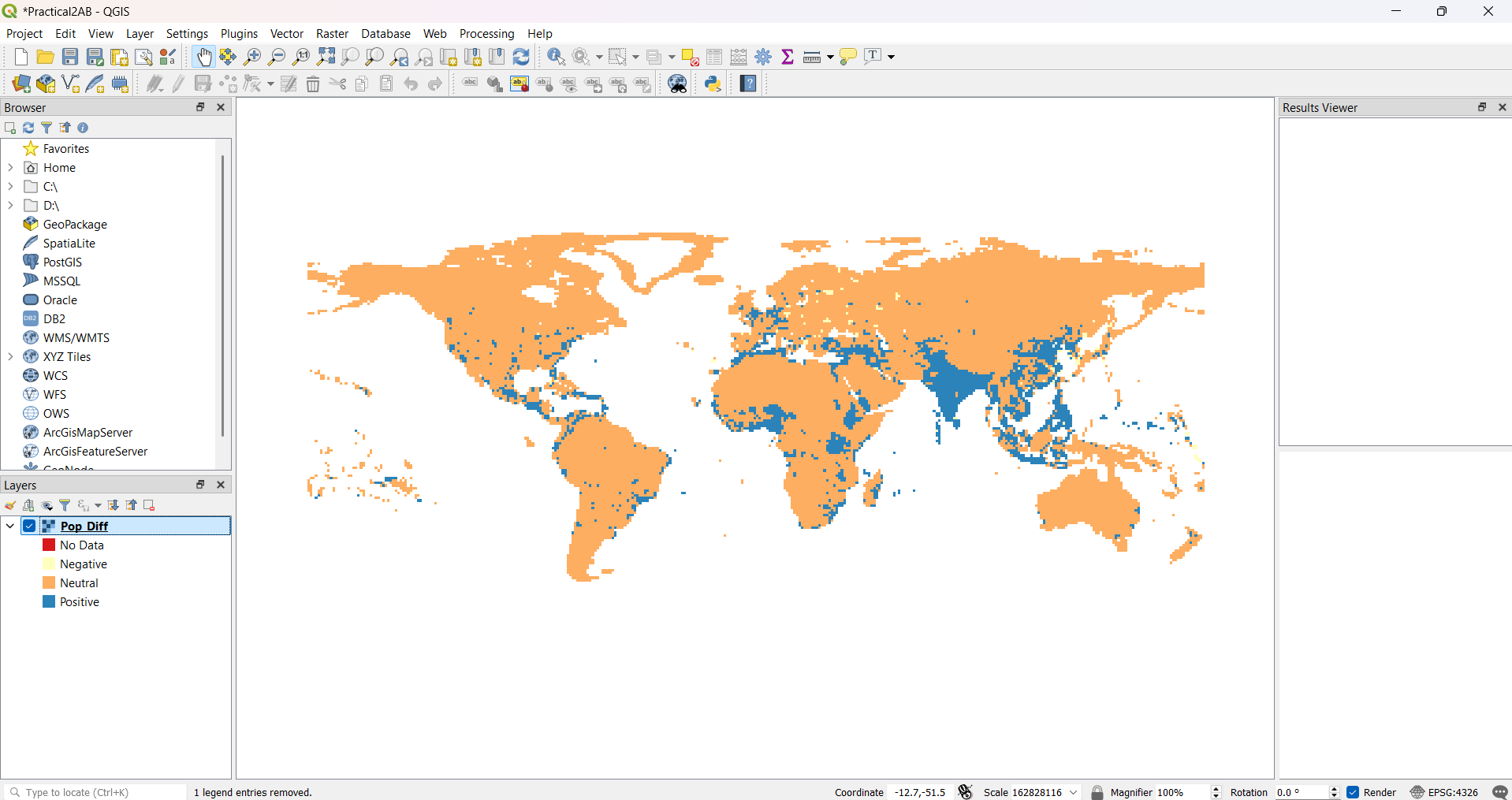
* Remove the other two layers i.e. glds00ag60.asc and glds90ag60.asc

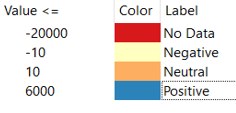


* Double click on pop\_diff layer. Select Symbology
* Set Render Type to “Single band Pseudo color”, Interpolation as Discrete, and remove all classification and add as shown in figure above using button. After all settings press “OK”.



* Layer will appear like:

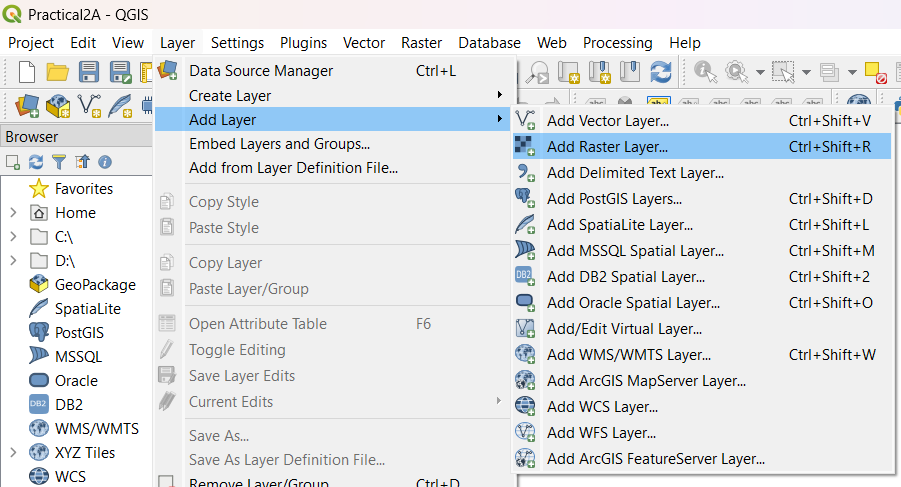




1. **Raster mosaicking and clipping**

Procedure:

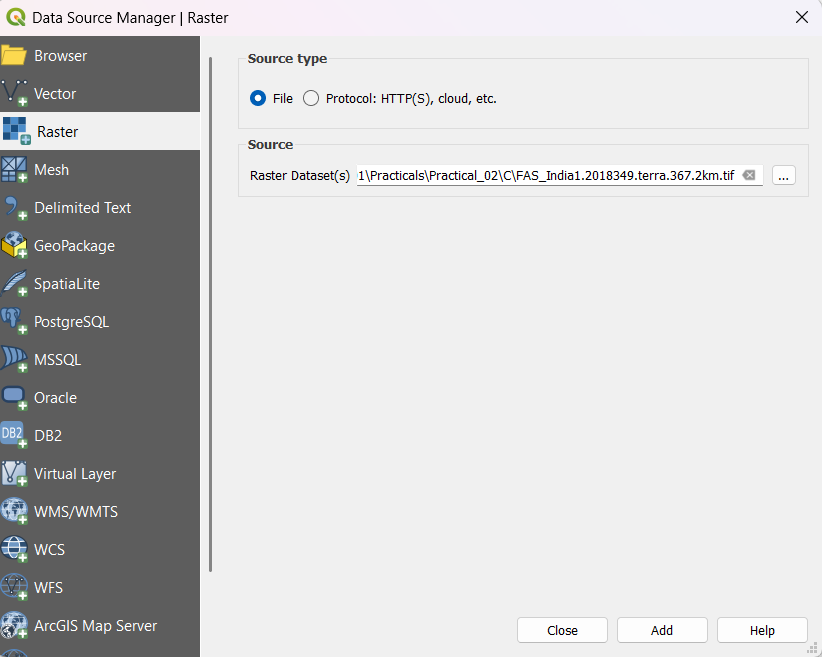
* Go to Layer → Add Layer → Add Raster Layer.



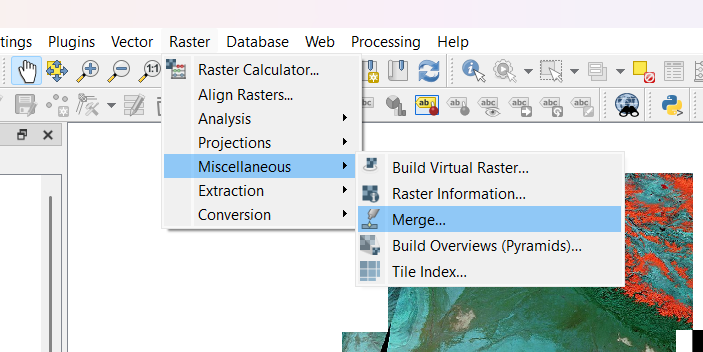
* Select the following “.tif” raster images

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

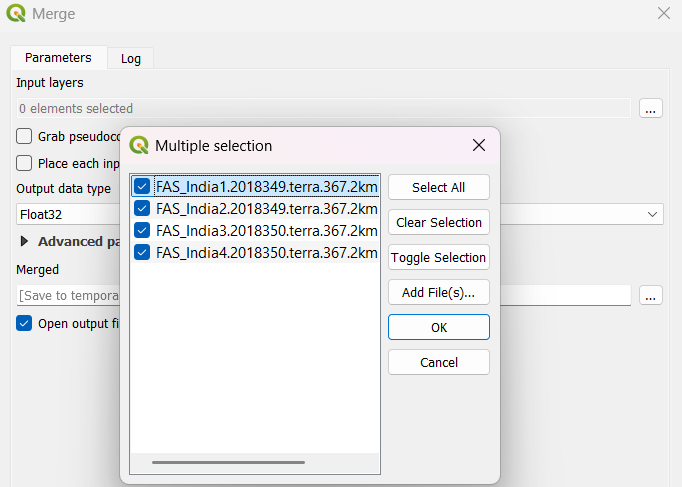
* Raster window click Add.



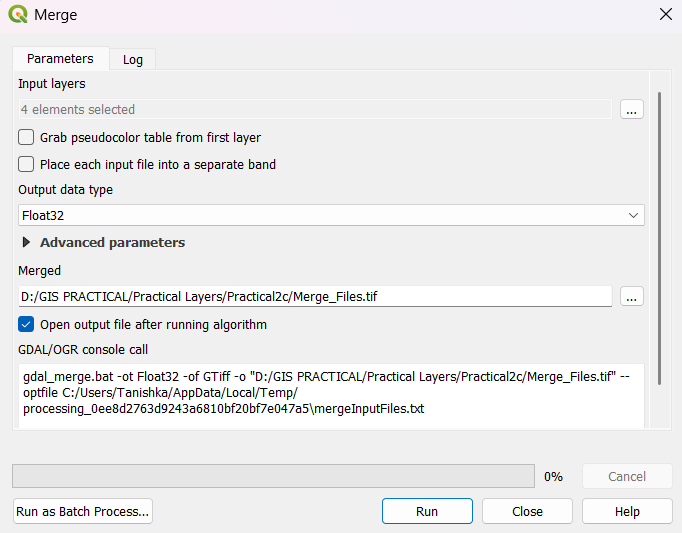
* Go to Raster → Miscellaneous → Merge



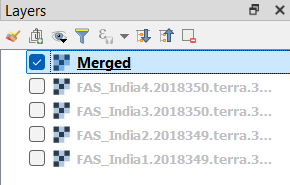
* In the Merge dialog window. Select three dots Input Layers. Select all layers and Press OK. In Merge dialog window select a file name and location to save merged images.



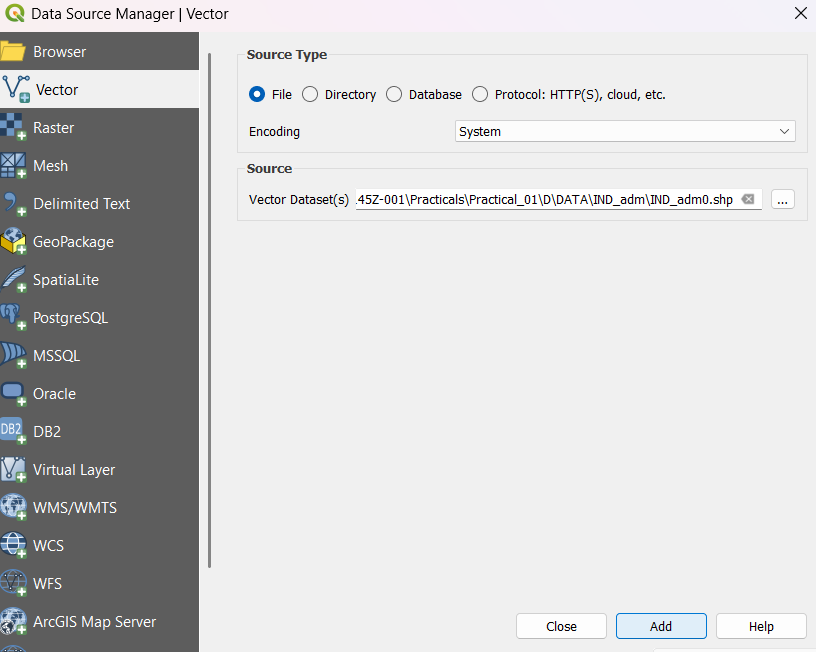
* Save the file to a location with the name as Merge\_Files.tif ➢ Press Run and after completion of operation close the Merge window dialog box.

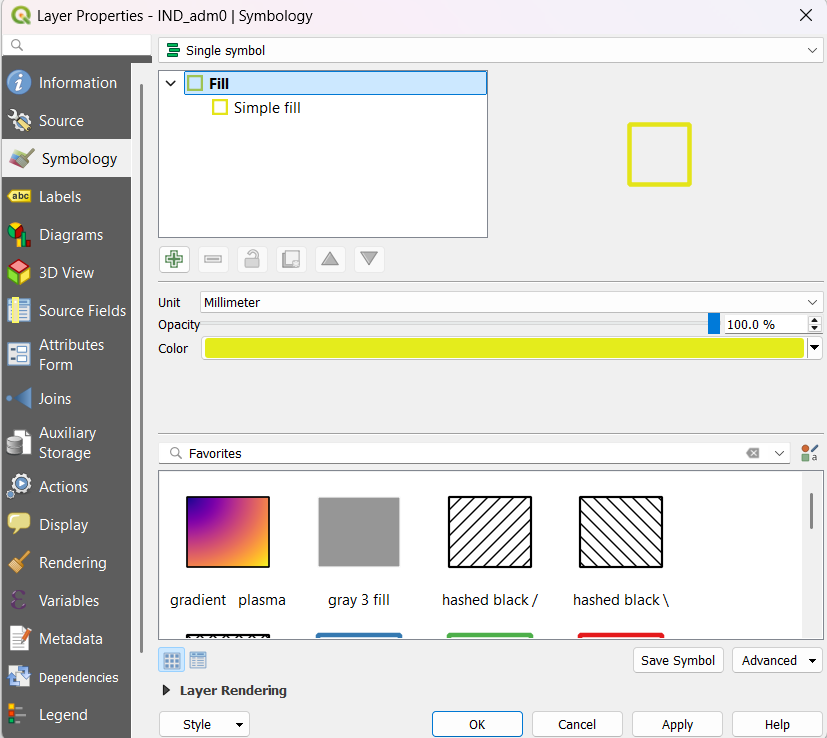


* You can now deselect individual layers from layer pane and only keep the merged raster file.

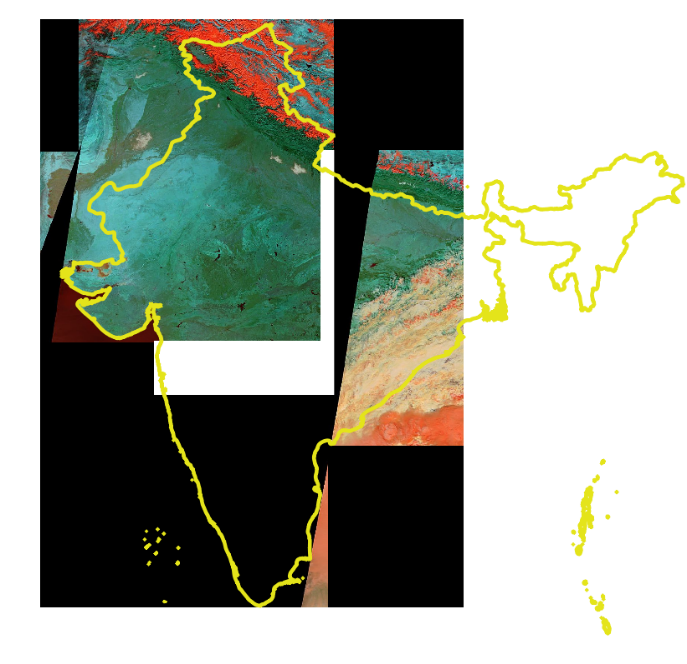


* Go to Layer→ Add Vector Layer → Select \GIS\_Workshop\Practicals\Practical\_02\C\IndiaAdminBoundry\IND\_adm0.shp file. From layer properties → select → select any one of the following

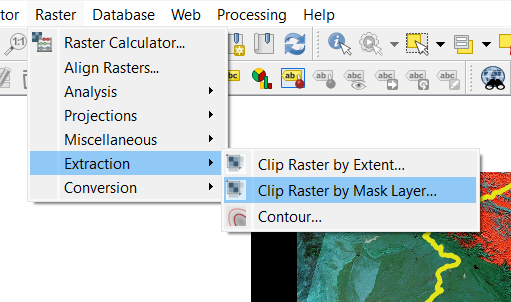




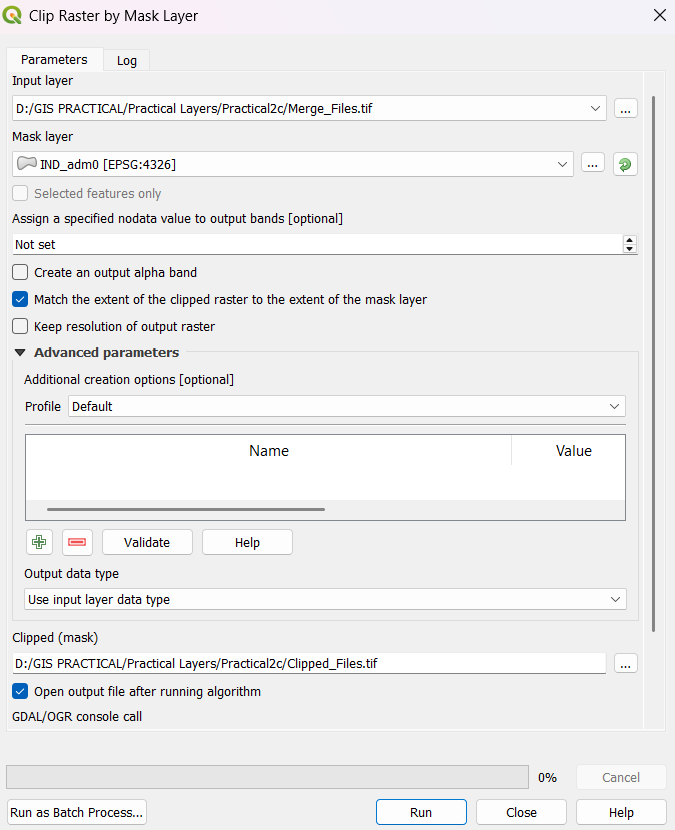
* The result will be



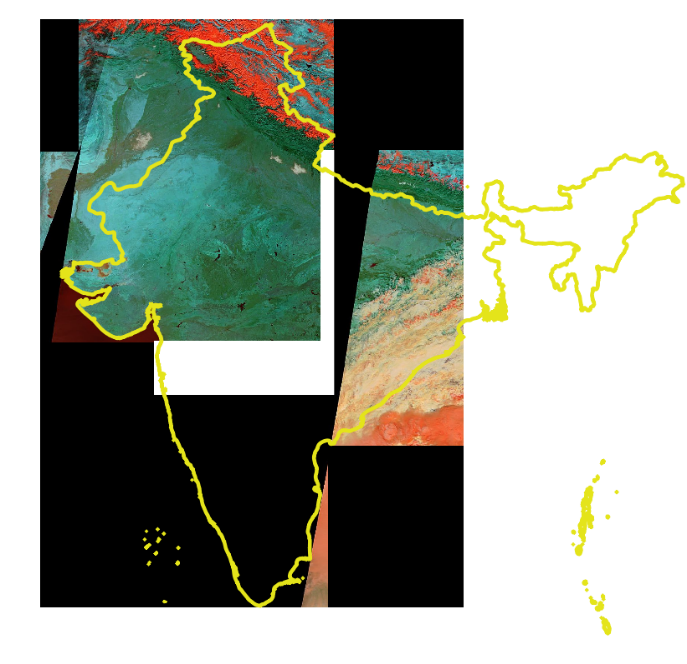
* Go to Raster → Extraction → Clip Raster by Mask Layer



* Select the merge raster image as input and Ind\_adm0 as mask layer. Select a file name and location for clipped raster as /Practical\_02/C/Clipped\_File.tif.



* Press RUN



After Clipping



Output: Raster data has been explored and managed successfully.