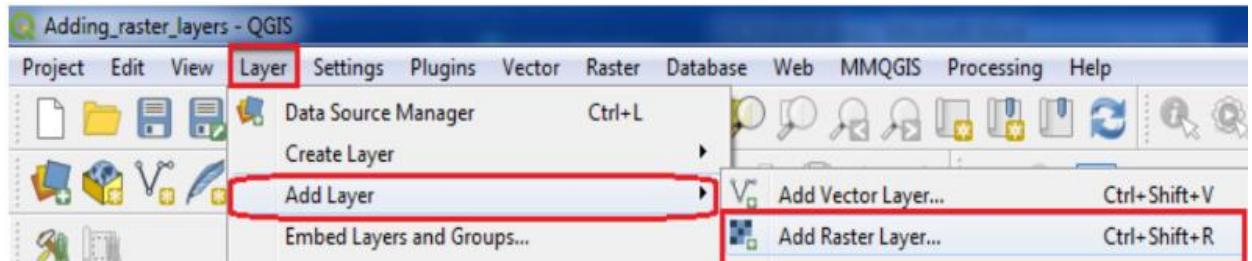


a) Adding raster layers

➤ 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”

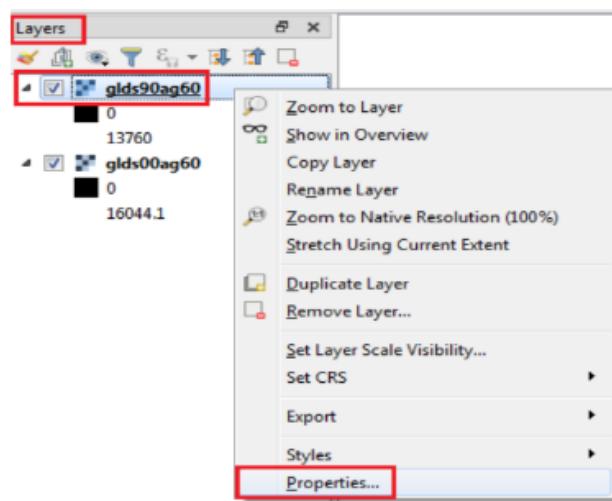
➤ Go to Project → Properties OR Press the Set CRS option on bottom right corner.

Select WGS 84 EPSG: 4326 and Press OK

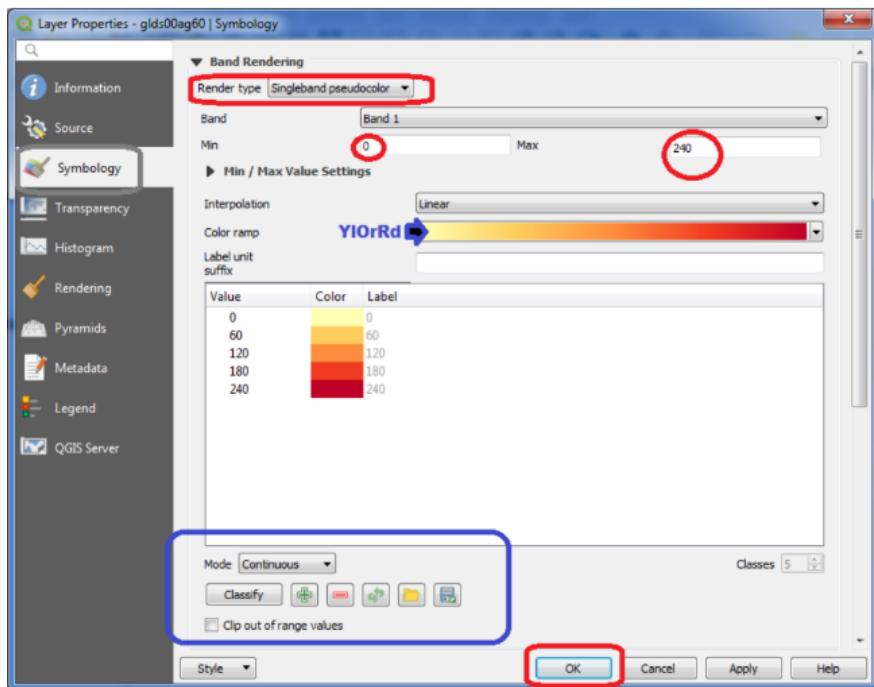


b) Raster Styling and Analysis

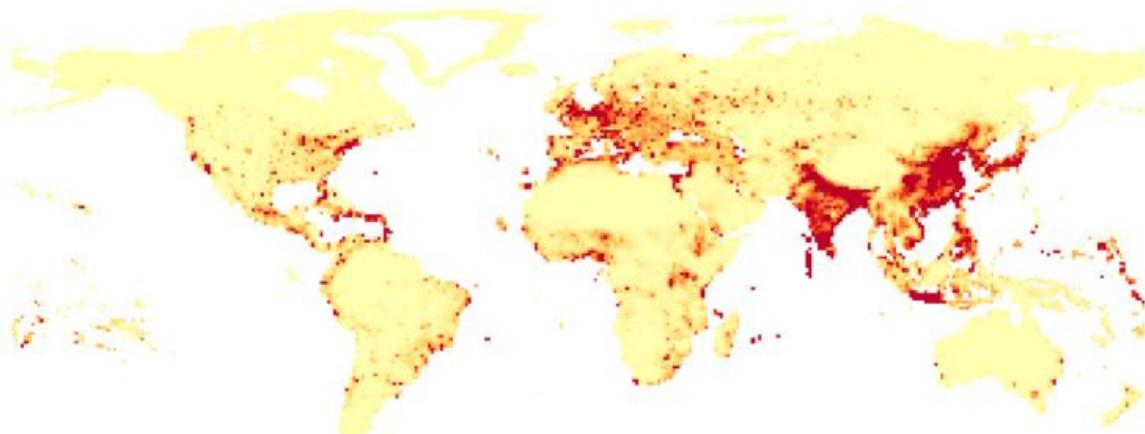
➤ To start with analysis of population data, convert the pixel from grayscale to Color.
➤ Select “glds90ag60.asc” Layer form layer Pane → select property OR double click on it.



➤ symbology

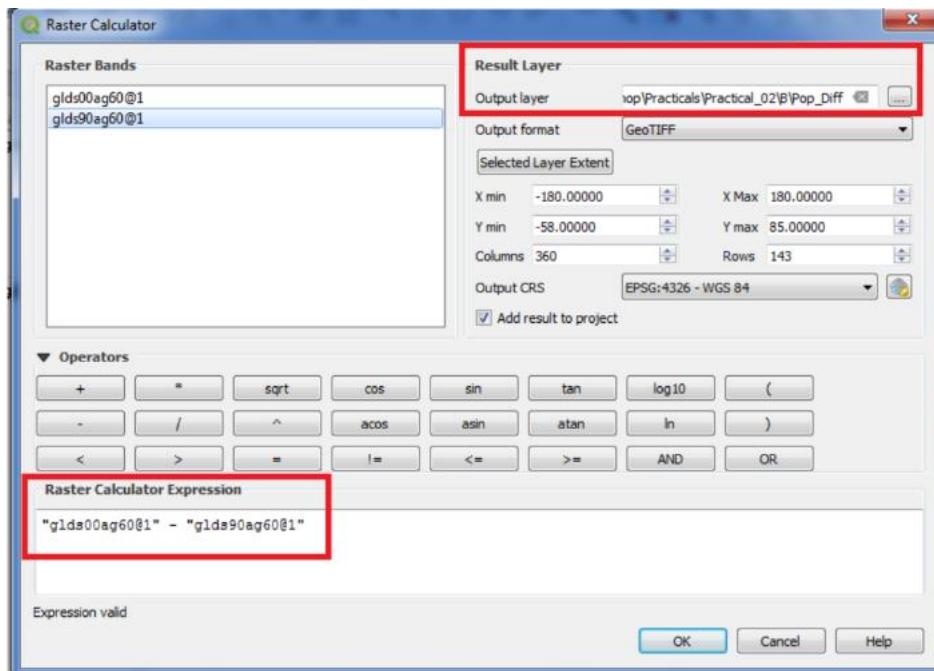


- Press “APPLY”
- Repeat the same for “glds00ag60.asc” Layer

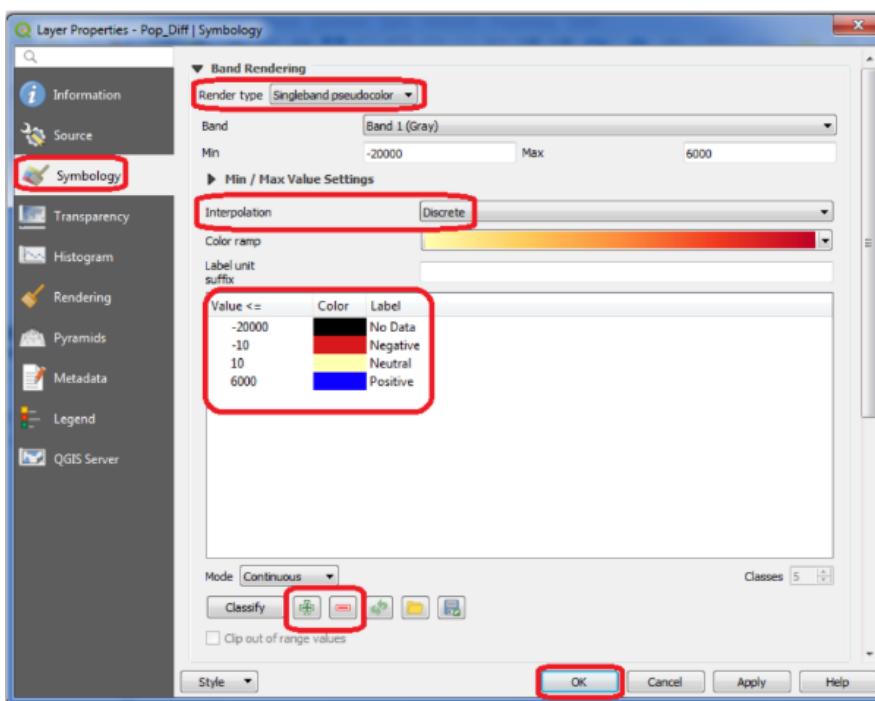


Layer output after applying style.

- The objective this experiment is 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.
- Go to Raster → Raster Calculator



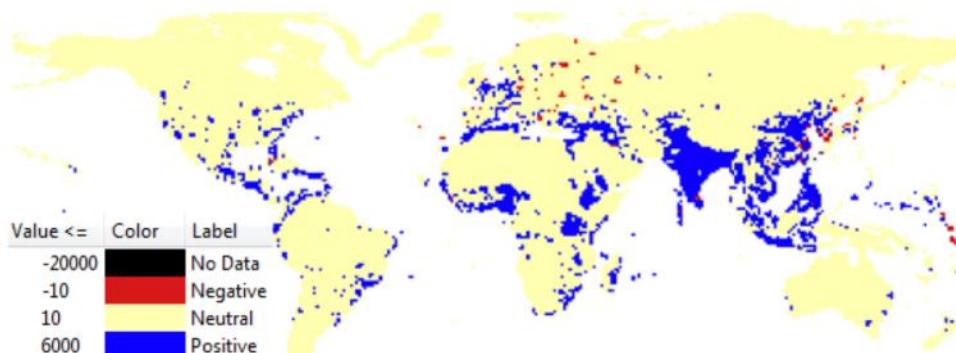
- Put the expression "glds00ag60@1" - "glds90ag60@1"
- Select the output file location & name and Press OK.
- Remove the other two layers i.e. glds00ag60.asc and glds90ag60.asc
- Double click on pop_diff layer.
- Select symbology



- 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



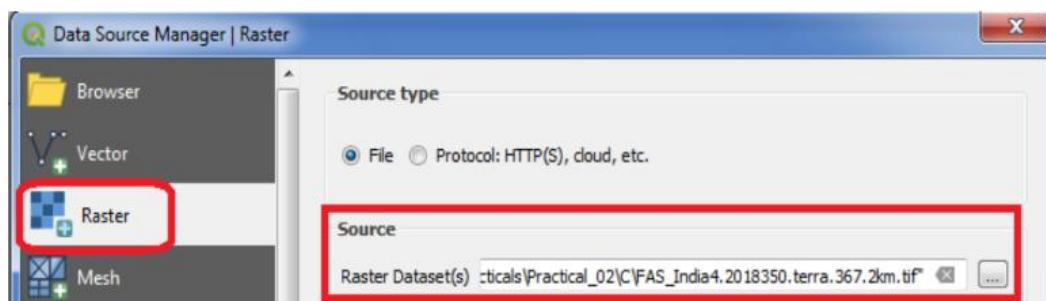
➤ Explore an area of your choice and check the raster band value using the

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.



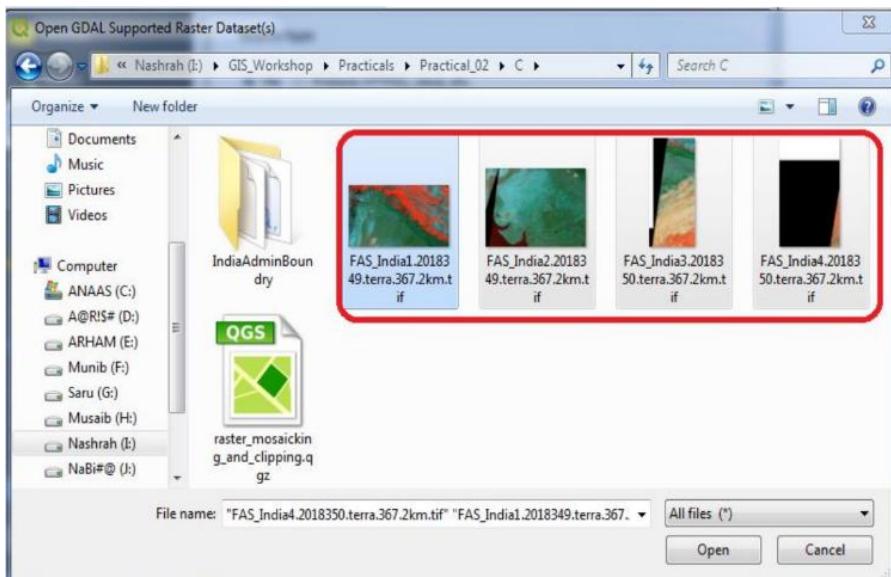
➤ Select the following “.tif” raster images for India from data folder.

FAS_India1.2018349.terra.367.2km.tif

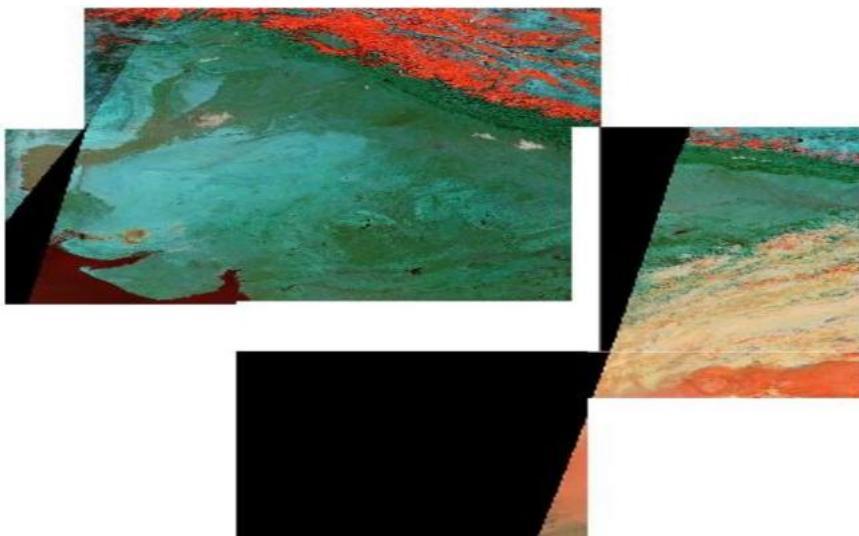
FAS_India2.2018349.terra.367.2km.tif

FAS_India3.2018349.terra.367.2km.tif

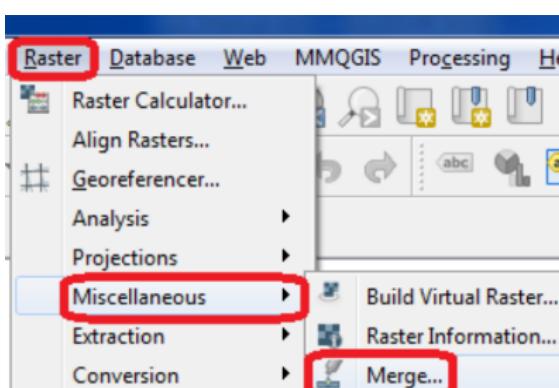
FAS_India4.2018349.terra.367.2km.tif



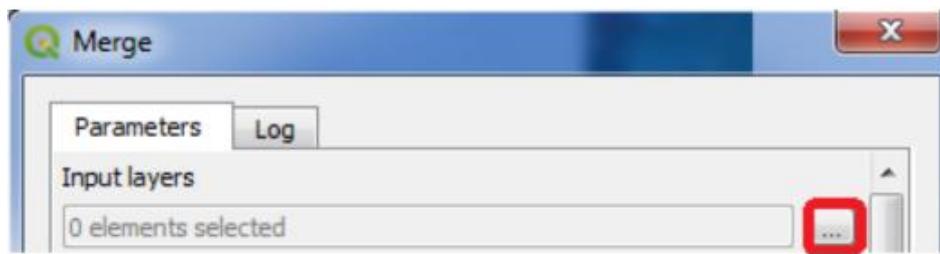
- Press open
- In data source manager | Raster window click Add.



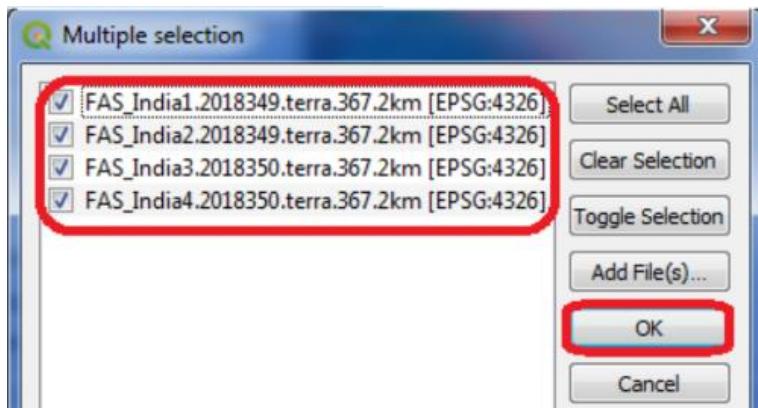
- Go to Raster → Miscellaneous → Merge



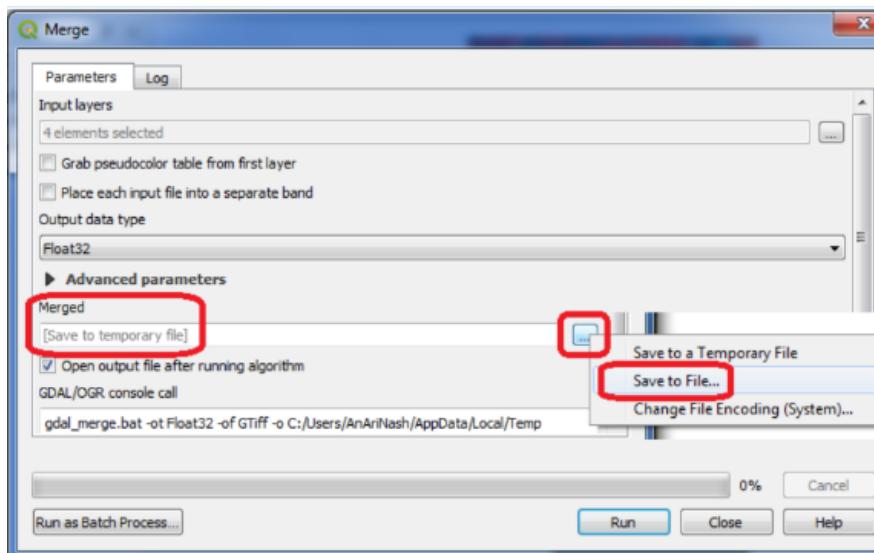
- In the Merge dialog window



➤ Select all layers and Press OK.

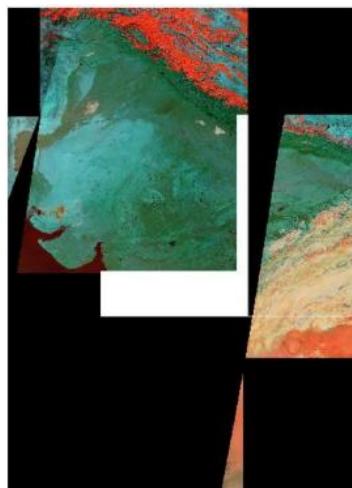


➤ In Merge dialog window select a file name and location to save merged images.

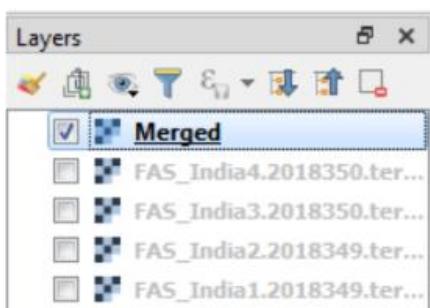


➤ Save the file to “GIS_Workshop/Practicals/Practical_02/C/” location with the name as Merge_Files.tif

➤ Press Run and after completion of operation close the Merge window dialog box.



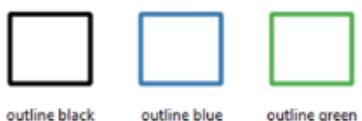
➤ You can now deselect individual layers from layer pane and only keep the merged raster file.



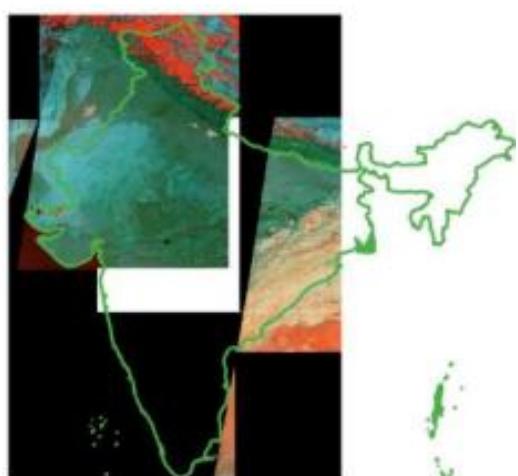
➤ Go to Layer → Add Vector Layer → Select

\GIS_Workshop\Practicals\Practical_02\C\IndiaAdminBoundary\IND_adm0.shp file.

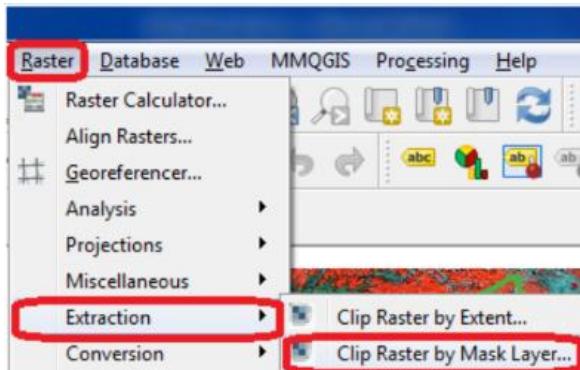
➤ From layer properties → select symbology → select any one of the following



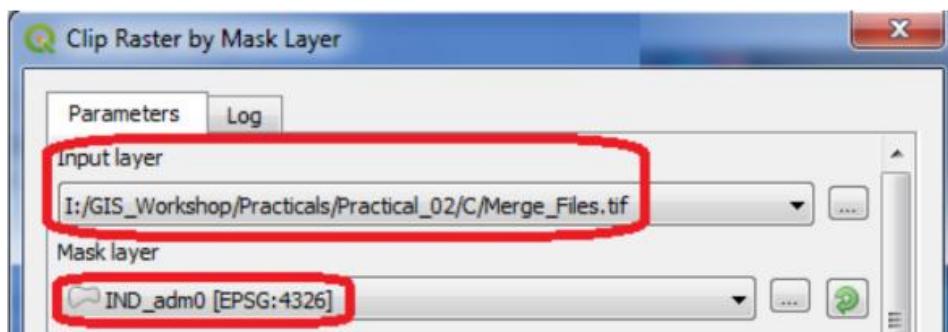
➤ The result will be



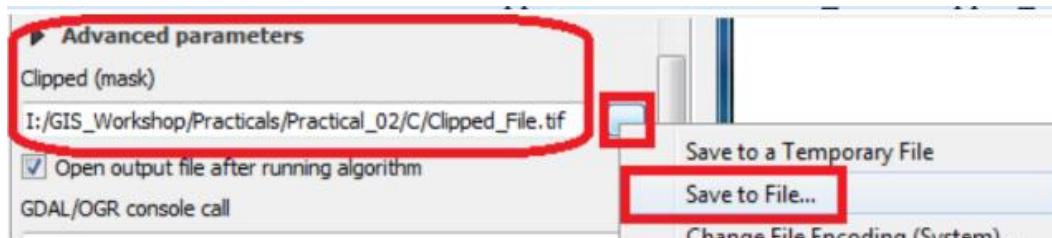
➤ Go to Raster → Extraction → Clip Raster by Mask Layer



➤ 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.

