

The following questions are designed to help you get used to the QGIS interface and analysis tools. Remember that there are often multiple ways and multiple tools that can be used to undertake the same task.

When carrying out the questions please make a screen grab (press Alt P and then and paste into a power point or word document). This will be your record of how you completed the task which you can refer back to. It will also be used by your pairs/groups to present back to the whole group on how you answered the questions.

1. Vector Questions:

1.1 Join two datasets by a common field

[E.g. crop yield statistics to commune shapefile]

Steps:

- Add the communes vector layer to QGIS
- Add the table containing a to QGIS (the dataset must contain a field that matches the communes field in the vector dataset and a field containing crop yields)
- Add the join to the communes shapefiles
- Save the dataset as a new file (this will make the join permanent in the new dataset)

Output: Symbolise the new vector dataset in QGIS and shade based on the added crop yield field using graduated colours. Think about what the class breaks should be and tell us why you have chosen those class breaks.

1.2 Buffer

Steps:

- Create a 2km buffer around Roads

Output: Symbolise the buffered dataset with a solid shade and an outline in a chosen colour and apply a 50% transparency. Display this over a forest cover change dataset. Display the roads dataset with a thin line of size 0.05.

1.3 Multi-distance Buffer

Steps:

- Install the 3rd party plugin
- Create a 2, 5 and 10km buffer around roads

Output: Symbolise the 3 buffers in the buffered dataset with a different colour for each distance. Use a solid shade and an outline in a chosen colour and apply a 50% transparency. Display this over a forest cover change dataset.

1.4 Select single province and use it to clip another vector layer to the provincial boundary

E.g. Select clip roads layer to a single province: use either Koh Kong or Monduliri.

Tip: Make sure both layers are in the same projection

Steps:

- Add roads layer to QGIS
- Add provincial boundaries to QGIS
- Put a Query on the provincial boundaries layer so that it filters out just one province
- Clip the roads with the provincial boundaries (that has the filter on it)

Output: Symbolise all the provincial boundaries other than the clipped province with a solid fill and a pecked outline with a 0.5 thickness for the whole of Cambodia. For the clipped province shade this in a darker colour and with the same pecked outline. Display the roads for just the clipped province. Label the provinces with province name.

2. Raster Questions:

2.1 Convert a vector to raster

Convert a landcover vector to raster

Output: Symbolise the Raster layer by landcover type with the landcover type named (i.e. not just a number) in legend in the table of contents.

2.2 Reclassify a raster layer

E.g. reclassify the raster landcover dataset into a new dataset containing just natural forest as a single class (1) and reclassifying everything else to 0.

Tip: you will need the output from 2.1

Steps:

- Which values in the Raster layer refer to Natural forest?
- Reclassify the landcover layer to a forest non-forest layer

Output: Symbolise the reclassified map so that forest and non-forest are displayed in the legend (i.e. not just a number) in legend in the table of contents.

2.3 Merge two raster layers

Steps:

- Use the Merge option in the Processing toolbox
- Merge two DEM raster tiles

Output: Symbolise the merged raster with class breaks using a coloured ramp based on the elevation.

2.4 Project Merged DEM to UTM projection

Steps:

- Project the merged DEM to UTM projection (EPSG 3148)
- Generate slope and hill shade from the DEM

Tip: you will need the output from 2.1

Output: Symbolise the DEM and the hillshade so that the DEM has a transparency and is displayed over the hillshade.

2.5 Use single province vector as a mask to clip a Raster layer to the provincial boundary

E.g. clip the DEM and Hillshade to provincial boundary e.g. use either Koh Kong or Mondulkiri.

Tip: Make sure both layers are in the same projection. You will also need the output from 2.3.

Steps:

- Add provincial boundaries to QGIS
- Add raster to clip to QGIS
- Put a Query on the provincial boundaries layer so that it filters out just one province
- Clip the DEM and Hillshade rasters to the provincial boundary

Output: Symbolise the DEM and the hillshade for the province so that the DEM has a transparency and is displayed over the hillshade.