Introduction to SRTM

Objective:

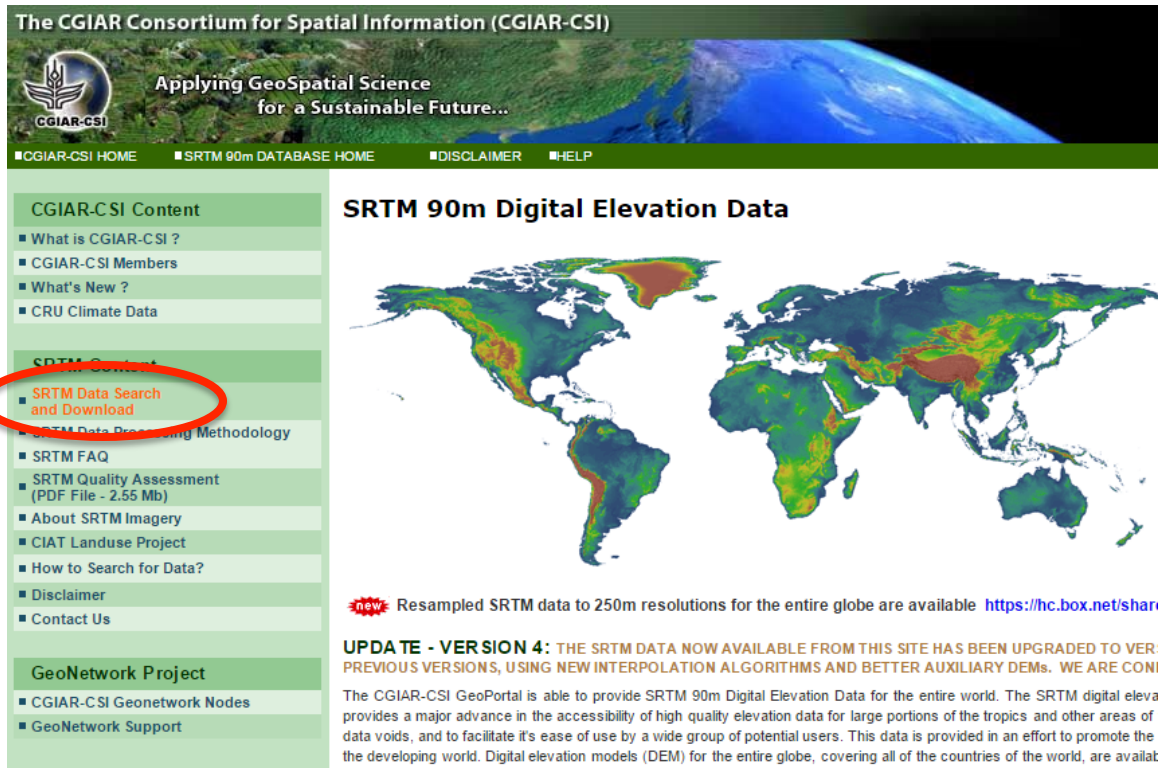
Locate, download, import, and display SRTM elevation data

There are three parts to this exercise:

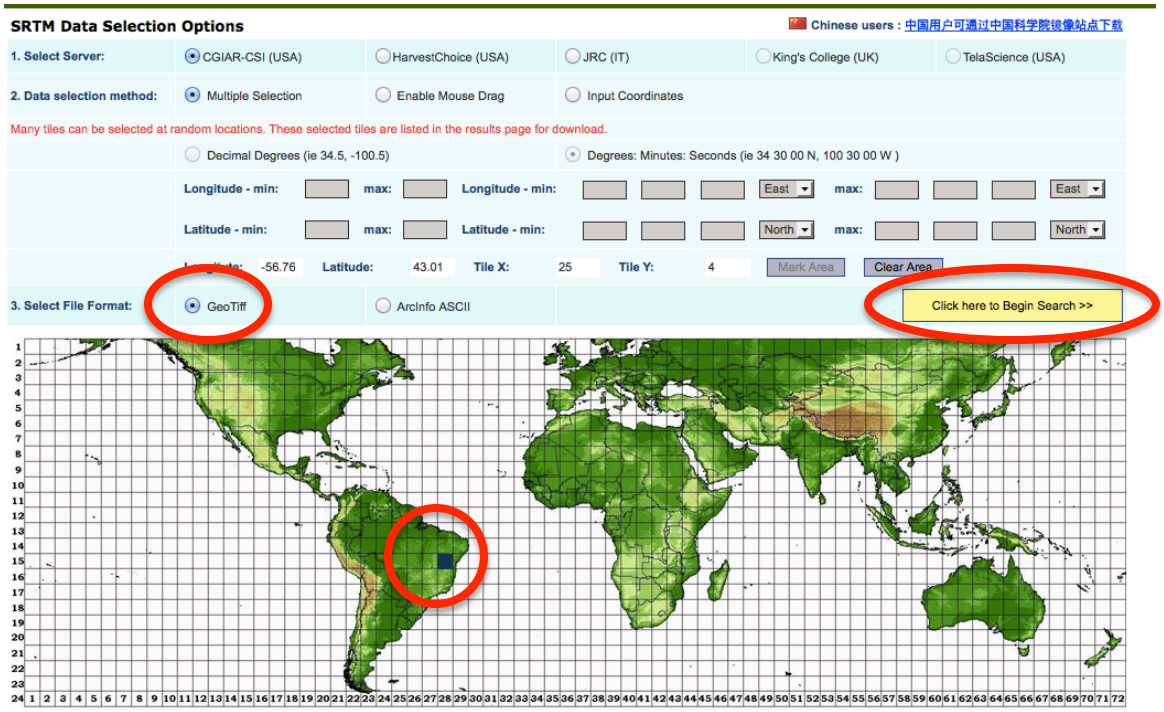
1. Access SRTM Elevation Data Products
2. Import and Visualize SRTM Elevation Data Products in QGIS
3. Create a Derived Slope Product

Part 1: Access SRTM Elevation Data Products

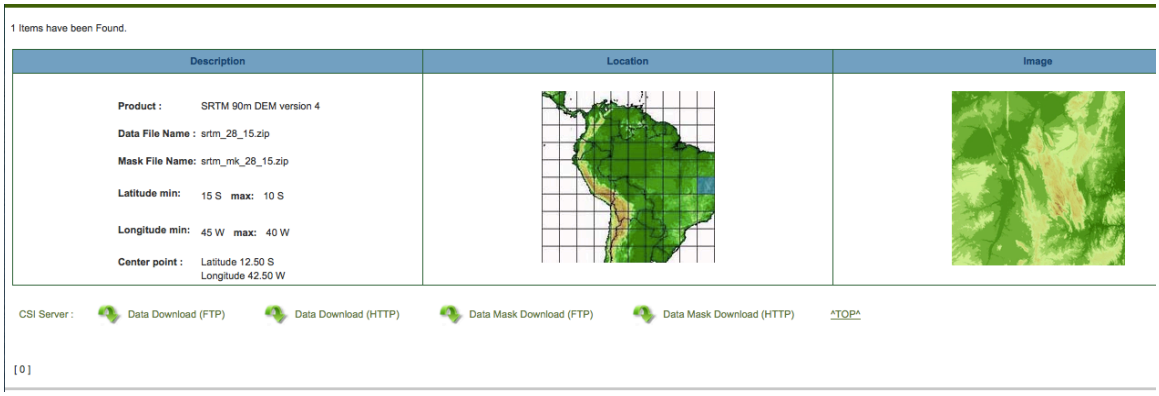
- Go to: http://srtm.csi.cgiar.org
- Click on the **SRTM Data Search and Download** button



- You are then prompted to make a selection. Select the **CGIAR-CSI (USA)** server.
  - If you are an international user, it may be best to use another server
- The second option allows you to select data by multiple selections, mouse dragging, or inputting coordinates. For simplicity, use **Multiple Selections**. This allows you to select individual tiles as needed.



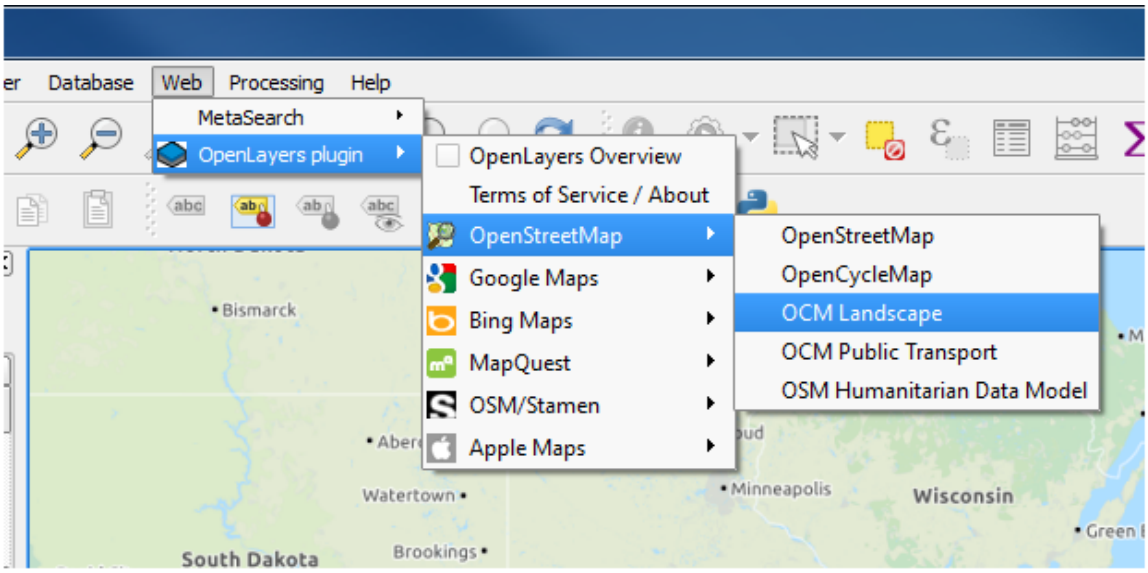
- Click **Begin Search »**
- This will take you to the download page and provides on-screen metadata for the product



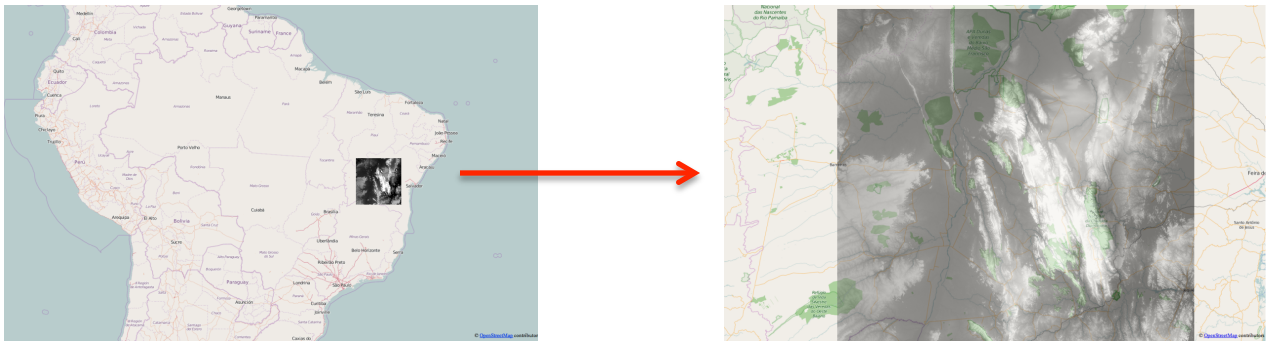
- Click the **Data Download (HTTP)** icon to download the GeoTIFF Digital Elevation Model (DEM) file
- This will download a zipped folder containing the SRTM elevation data

Part 2: Import and Visualize the SRTM Elevation Data

- Once the file is download, unzip the file and open **QGIS Desktop**
- Add in a base map using the **OpenLayers plugin**

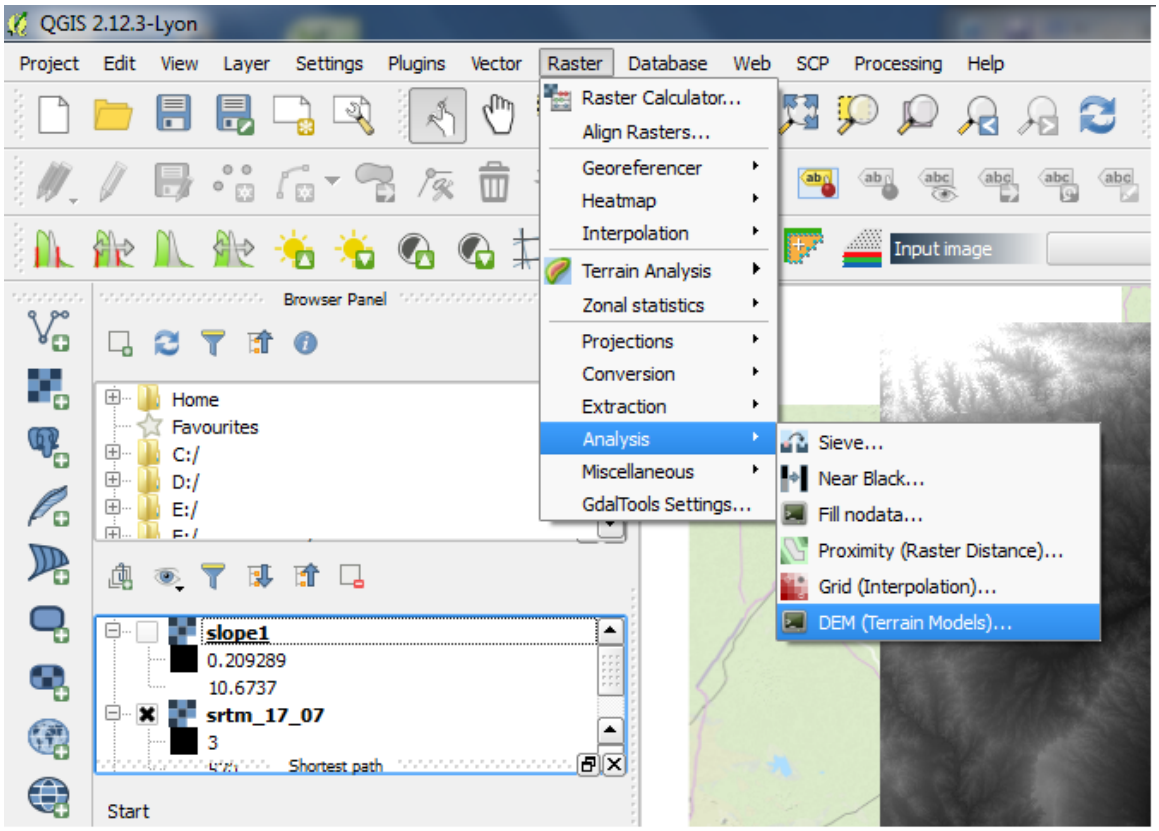


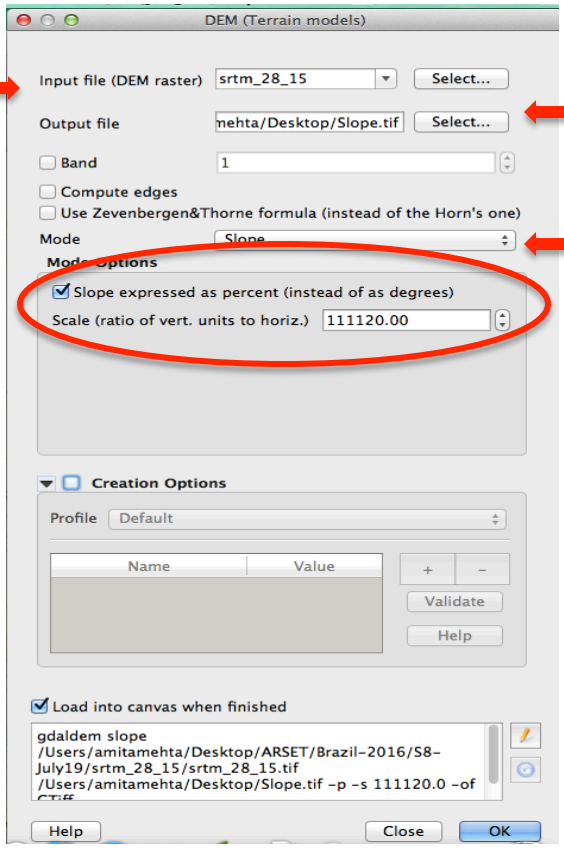
- Choose a base map (OCM Landscape or Google Physical work well)
- Zoom in on the study area
- Using the **Add Raster Layer** icon, click **Add Raster**
- A window will open for you to navigate to the location of the downloaded SRTM product
- Select the GeoTIFF raster ending in '.tif' and click **Open**
  - Example: srtm_28_15.tif
- The raster has been imported. You may wish to change the transparency of the DEM file in order to view the base map with elevation properties.
- Right click the **layer**, navigate to **layer properties**
- In the **Transparency** tab, set the **Global Transparency** to **40%**. Click **OK**.



Part 3: Creating a Derived Slope Product

- Using the SRTM DEM now imported into QGIS, create a slope product using the **DEM (Terrain models)** tool
- Click on the menu item **Raster** > **Analysis** > **DEM (Terrain models)**





Input File

Output File

For 'Mode' Select Slope

- In the dialog that appears, ensure the **Input File** is the DEM we just visualized
- Set the **Output File** to a folder and name ending in '.tif'
- Set the **Mode** option to **Slope**
- **Check** the **Slope expressed as percent** box
- In the **Scale** box, enter **111120.00** to convert the units to meters
- Click **OK**
- The resulting image displays slope as a percentage. White is higher slope and black is lower.