

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

The CGIAR Consortium for Spatial Information (CGIAR-CSI)
Applying GeoSpatial Science for a Sustainable Future...

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CGIAR-CSI Content

- What is CGIAR-CSI ?
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- CRU Climate Data

SRTM Content

- **SRTM Data Search and Download**
- SRTM Data Processing Methodology
- SRTM FAQ
- SRTM Quality Assessment (PDF File - 2.55 Mb)
- About SRTM Imagery
- CIAT Landuse Project
- How to Search for Data?
- Disclaimer
- Contact Us

GeoNetwork Project

- CGIAR-CSI Geonetwork Nodes
- GeoNetwork Support

SRTM 90m Digital Elevation Data

new Resampled SRTM data to 250m resolutions for the entire globe are available <https://hc.box.net/shar>

UPDATE - VERSION 4: THE SRTM DATA NOW AVAILABLE FROM THIS SITE HAS BEEN UPGRADED TO VERSION 4, USING NEW INTERPOLATION ALGORITHMS AND BETTER AUXILIARY DEMs. WE ARE COMING SOON!

The CGIAR-CSI GeoPortal is able to provide SRTM 90m Digital Elevation Data for the entire world. The SRTM digital elevation data provides a major advance in the accessibility of high quality elevation data for large portions of the tropics and other areas of data voids, and to facilitate its ease of use by a wide group of potential users. This data is provided in an effort to promote the the developing world. Digital elevation models (DEM) for the entire globe, covering all of the countries of the world, are available

- 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.

SRTM Data Selection Options Chinese users : 中国用户可以通过中国科学院镜像站点下载

1. Select Server: CGIAR-CSI (USA) HarvestChoice (USA) JRC (IT) King's College (UK) TerraScience (USA)

2. Data selection method: Multiple Selection Enable Mouse Drag Input Coordinates

Many tiles can be selected at random locations. These selected tiles are listed in the results page for download.

Decimal Degrees (ie 34.5, -100.5) Degrees: Minutes: Seconds (ie 34 30 00 N, 100 30 00 W)

Longitude - min: max: Longitude - min: East max: East

Latitude - min: max: Latitude - min: North max: North

Longitude: -56.76 Latitude: 43.01 Tile X: 25 Tile Y: 4

3. Select File Format: GeoTiff Arcinfo ASCII

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

1 Items have been Found.

Description	Location	Image
<p>Product : SRTM 90m DEM version 4</p> <p>Data File Name : srtm_28_15.zip</p> <p>Mask File Name : srtm_mk_28_15.zip</p> <p>Latitude min: 15 S max: 10 S</p> <p>Longitude min: 45 W max: 40 W</p> <p>Center point : Latitude 12.50 S Longitude 42.50 W</p>		

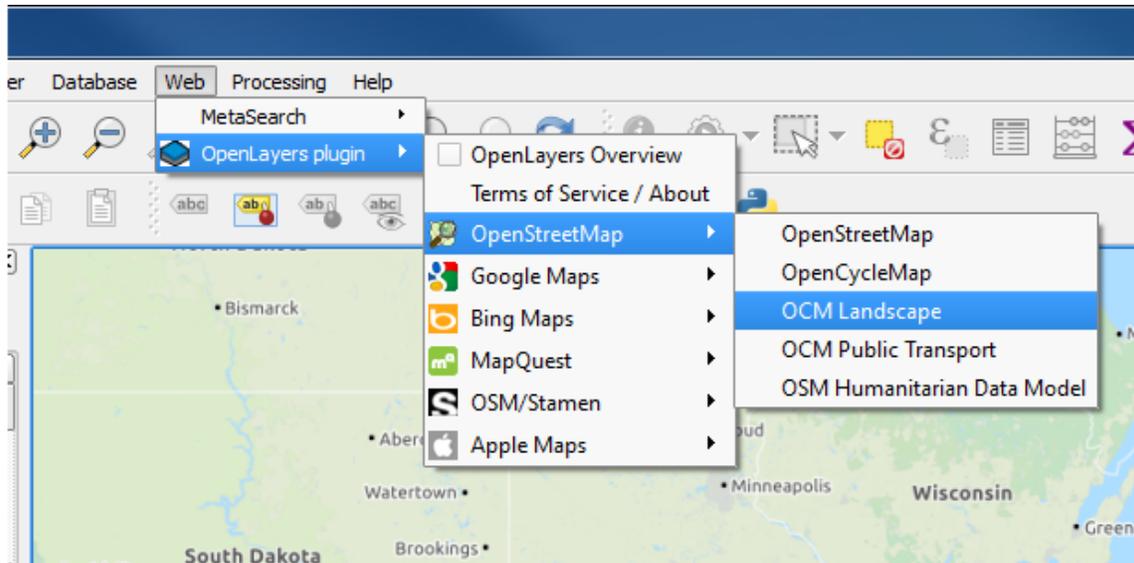
CSI Server: Data Download (FTP) Data Download (HTTP) Data Mask Download (FTP) Data Mask Download (HTTP) [ATOP^](#)

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- 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**

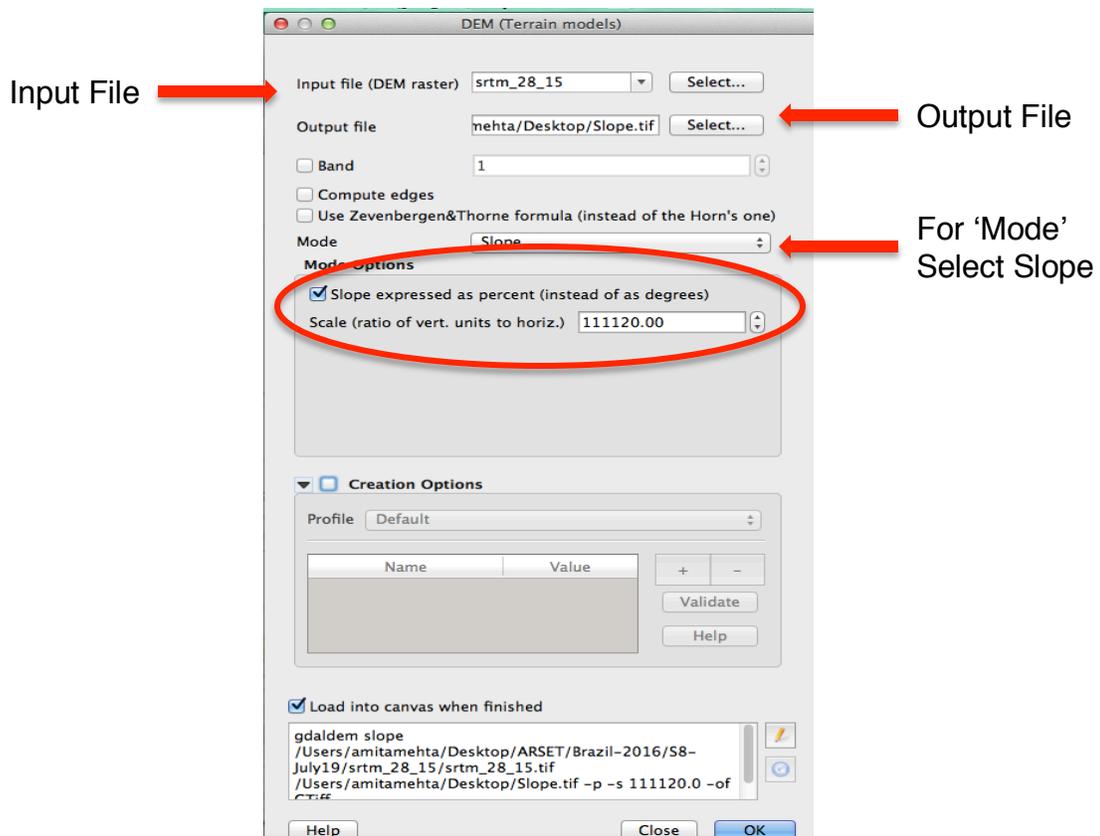
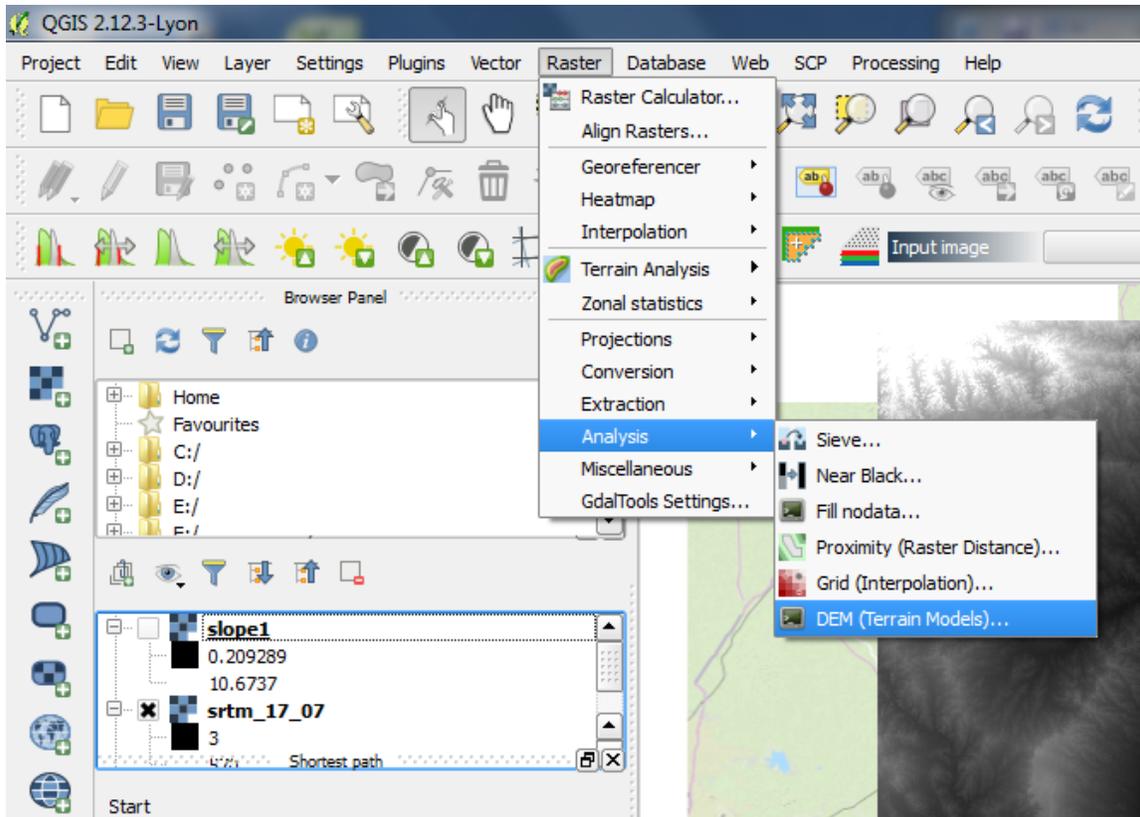


- Choose a base map (OCM Landscape or Google Physical work well)
- Zoom in on the study area
- Using the **Add Raster Layer** icon, click **Add Raster**
- A window will open for you to navigate to the location of the downloaded SRTM product
- Select the GeoTIFF raster ending in '.tif' and click **Open**
 - 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)**



- 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.

