Name

LV_DEM_30_m.tif (entire region)

LV_DEM_30_m_basin.tif (clipped to old 90 m basin)

LV_Hillshade_30_m.tif (entire region)

LV_Hillshade_30_m_basin.tif (clipped to old 90 m basin)

Data Source

SRTM GL1: NASA Shuttle Radar Topography Mission Global 1 arc second V003

Description

NASA Shuttle Radar Topography Mission (SRTM) datasets result from a collaborative effort by the National Aeronautics and Space Administration (NASA) and the National Geospatial-Intelligence Agency (NGA - previously known as the National Imagery and Mapping Agency, or NIMA), as well as the participation of the German and Italian space agencies. The purpose of SRTM was to generate a near-global digital elevation model (DEM) of the Earth using radar interferometry. SRTM was a primary component of the payload on the Space Shuttle Endeavour during its STS-99 mission. Endeavour launched February 11, 2000 and flew for 11 days.

SRTM collected data in swaths, which extend from ~30 degrees off-nadir to ~58 degrees off-nadir from an altitude of 233 kilometers (km). These swaths are ~225 km wide, and consisted of all land between 60° North (N) and 56° South (S) latitude. This accounts for about 80% of Earth's total landmass.

Improvements/Changes from Previous Versions

Voids in the Version 3.0 products have been filled with ASTER Global Digital Elevation Model (GDEM) Version 2.0, the Global Multi-resolution Terrain Elevation Data 2010 (GMTED2010), and the National Elevation Dataset (NED)

Time Period

2/2000

Horizontal Resolution

meters

1 Arc-second or ~30 m at the equator.

EPSG:102024 (Lambert Conformal Conic Africa), http://spatialreference.org/ref/esri/africa-lambert-conformal-conic/html/

Vertical Resolution

Meters

Vertical Datum, EGM96 (Earth Gravitational Model 1996).

EPSG:102024

Download source

https://e4ftl01.cr.usgs.gov/SRTM/SRTMGL1.003/2000.02.11/S19W069.SRTMGL1.hgt.zip

via

https://e4ftl01.cr.usgs.gov/SRTM/SRTMGL1.003/2000.02.11/S19W069.SRTMGL1.hgt.zip

Processing Methodology

//Files are from NASA 30m SRTM

//downloaded from http://dwtkns.com/srtm30m/

//registration required.

//Tiles downloaded

N02E030.hgt, S03E027.hgt, N01E028.hgt, S01E031.hgt, N02E031.hgt, S03E028.hgt, N01E029.hgt, S02E027.hgt, N00E028.hgt, N02E032.hgt, S03E029.hgt, N01E030.hgt

S02E028.hgt, N00E029.hgt, S01E028.hgt, S03E030.hgt, N01E031.hgt, S02E029.hgt, N00E030.hgt, S01E029.hgt, N02E029.hgt, S02E030.hgt, N00E031.hgt, S01E030.hgt and so on

//Merge into one DEM

gdalmerge -o LAE_DEM.tif N02E030.hgt S03E027.hgt N01E028.hgt S01E031.hgt N02E031.hgt S03E028.hgt N01E029.hgt S02E027.hgt N00E028.hgt N02E032.hgt S03E029.hgt N01E030.hgt S02E028.hgt N00E029.hgt S01E028.hgt S03E030.hgt N01E031.hgt S02E029.hgt N00E030.hgt S01E029.hgt N02E029.hgt S02E030.hgt N00E031.hgt S01E030.hgt and so on

//Convert 0 to NoData

gdal_calc -A LV_DEM.tif --outfile=LV2.tif --calc="A*(A>0)" --NoDataValue=0

//Reproject to Africa Lambert Conformal Conic http://spatialreference.org/ref/esri/africa-lambert-conformal-conic/html/

//Use a Cubic reampling method

// x and y are 30

//no need to set -s srs as it is in header

//Let it use the most near cell size at the center which is -28.7041 meters

gdalwarp LV.tif ***LV_DEM_30_m.tif*** -r cubic tr 30 30 -t_srs EPSG:102024

//Use gdal warp to clip to basin

gdalwarp -cutline LV_Basin.shp -crop_to_cutline -dstalpha LV_DEM_30_m.tif **LV_DEM_30_m_basin.tif**

//Create Hillshade in GDAL (ran this in QGIS window)

// I also used arc to make the hillshade for rendering purposes.

gdaldem hillshade LV_DEM_30_m.tif ***LV_Hillshade_30_m.tif*** -compute_edges

gdaldem hillshade LV_DEM_30_m_basin.tif ***LV_Hillshade_30_m_basin.tif*** -compute_edges

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Funding

NSF award 1518532

URL: https://www.nsf.gov/awardsearch/showAward?AWD_ID=1518532

Spatial Extent

N 1.3

S -4.2

E 36

W 29