Generating environmental data for Madagascar fokotonys

ADMINISTRATIVE UNITS

Administrative unit shapefiles retrieved from <https://data.humdata.org>. Additional data generated and joined to this shapefile through steps outlined below.

MEAN ELEVATION

1. NASA 1 arc-second SRTM DEM data from <https://earthexplorer.usgs.gov/>
2. ArcGIS Pro:
   1. Create mosaic from all DEM data over MDG
   2. Run zonal statistics as table to get mean elevation in each fokotony (level 4 administrative unit)
   3. Mean elevation for each fokotony joined to main shapefile

SUM POPULATION

1. UN-adjusted population estimate raster data at 100 m resolution retrieved from <https://www.worldpop.org/>
2. ArcGIS Pro:
   1. Zonal statistics as table to get the sum of population cell values across each fokotony
   2. Joined to main shapefile

VEGETATION/LAND COVER

1. Land cover classification raster data at 29 m resolution from Moat and Smith (need a better reference for this data – help?)
2. ArcGIS Pro:
   1. Zonal statistics as table to get the total count, variety, majority, minority, and median of vegetation land cover cell values across each fokotony
   2. Joined to main shapefile

TEMPERATURE and PRECIPITATION

1. Bioclimatic variables climate data in 30 arc-second resolution retrieved from <https://www.worldclim.org/>
2. This data is derived from monthly averages for the years 1970-2000
3. ArcGIS Pro:
   1. Zonal statistics as table to get the means of the cell values of the annual mean, max, and min temperatures, and the sums of the mean annual precipitation and the precipitation of the wettest and the driest months, respectively, across each fokotony
   2. Joined to main shapefile

SCHISTOSOMIASIS

1. Spatial extent of *Schistosoma haematobium* and *mansoni* derived from global schisto species shapefile (SANNA do you know the source of this? It’s data I have carried over from the old lab PC and the schisto map team projects back in 2014 ish)
2. Joined to main shapefile