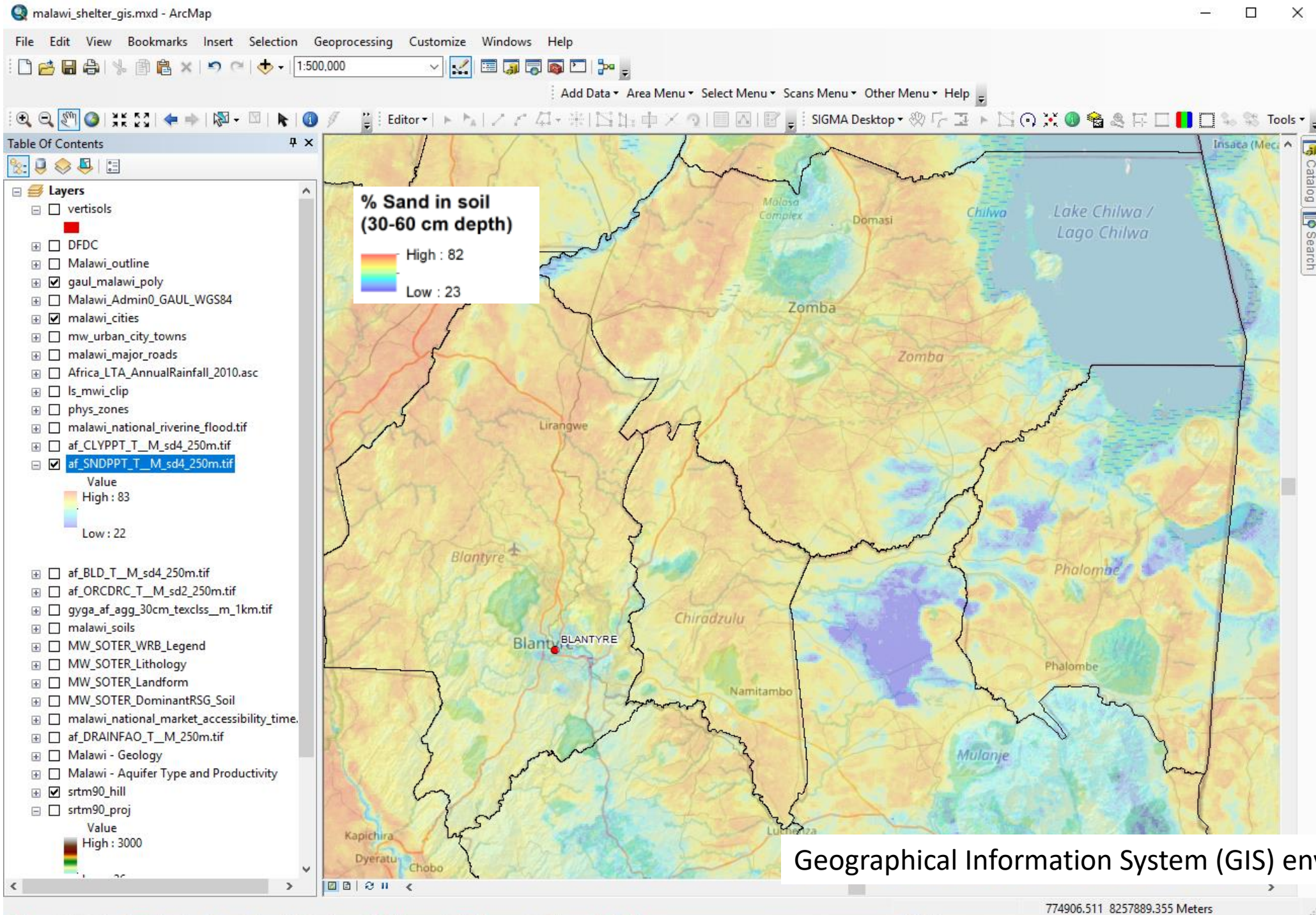


Sources of publicly available geoscience / spatial data

(not full search – other sources not listed here)

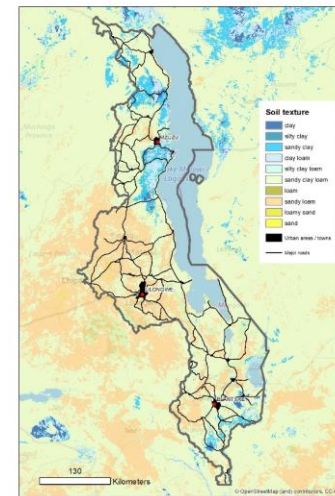
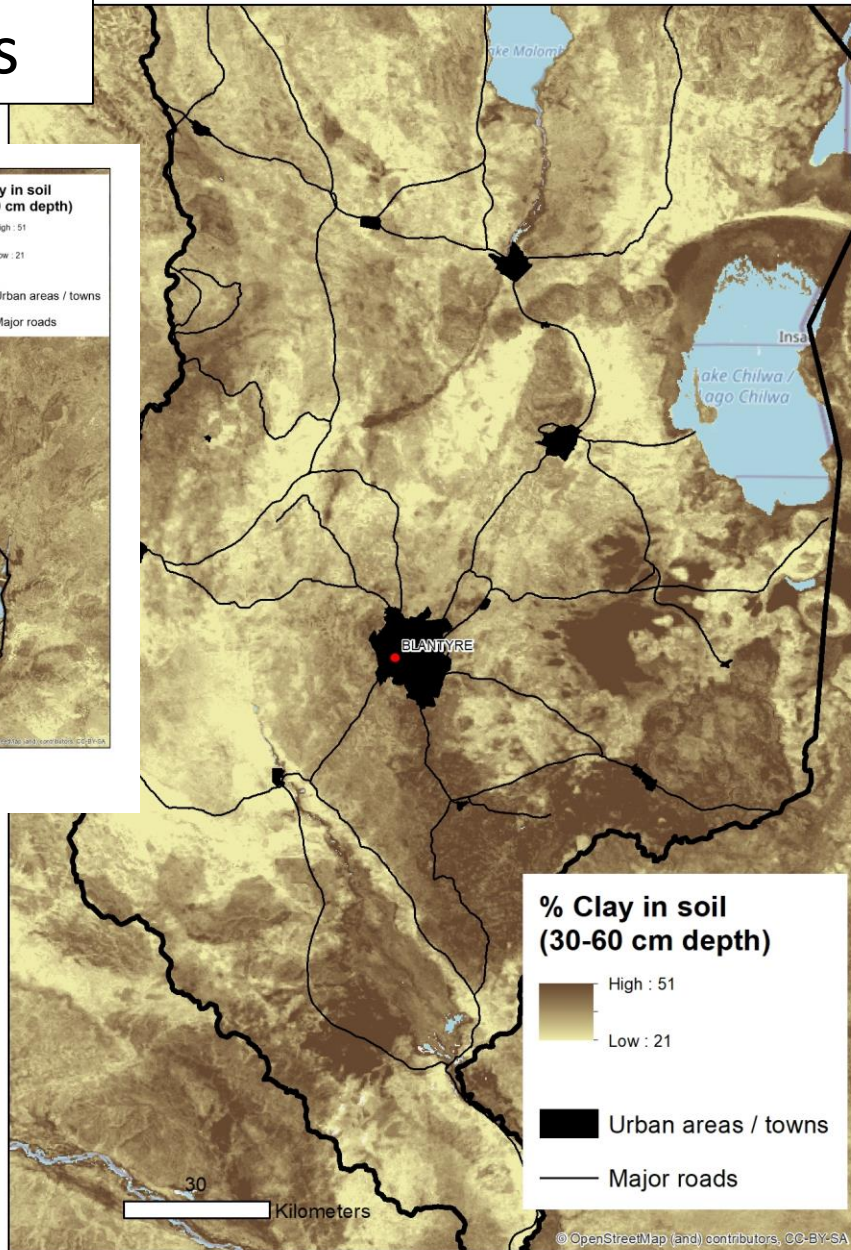
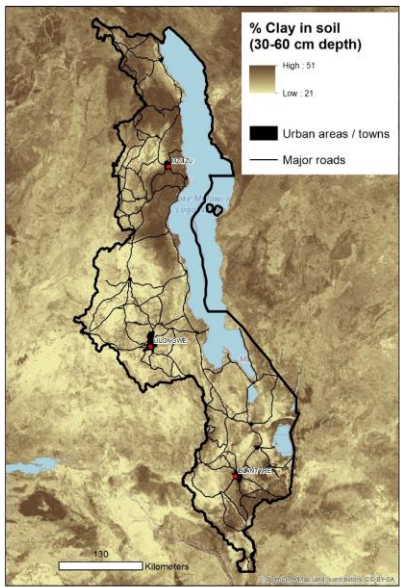
- MASDAP. Malawi Spatial Data Platform. <http://www.masdap.mw/>
- RCMRD Geoportal. <http://geoportal.rcmrd.org/>
- ISRIC Soil property maps of Africa at 250 m resolution. <https://www.isric.org/projects/soil-property-maps-africa-250-m-resolution>
- Soil and Terrain Database (SOTER) for Malawi.
<https://data.isric.org/geonetwork/srv/api/records/60803da0-a15f-4cc5-9cb5-172fa2460af3>
- Malawi Disaster Management Portal. <https://gis-malawi.com/>
- Africa Groundwater Atlas – Hydrogeology of Malawi.
http://earthwise.bgs.ac.uk/index.php/Hydrogeology_of_Malawi

Datasets include: flood hazard, landslide hazard, topography, soil type, soil texture, % clay/silt/sand, soil bulk density, soil drainage, geology, aquifer productivity, soil organic carbon, etc.

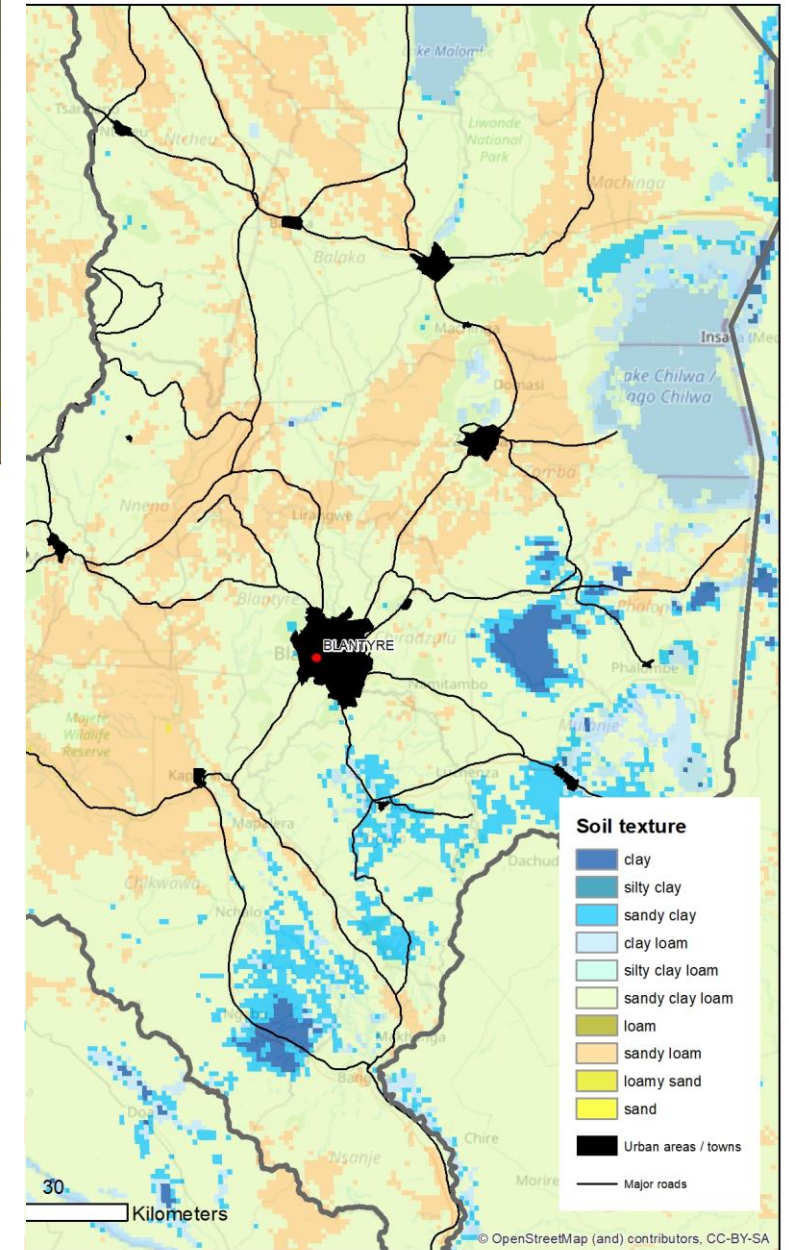


Geographical Information System (GIS) environment

Examples

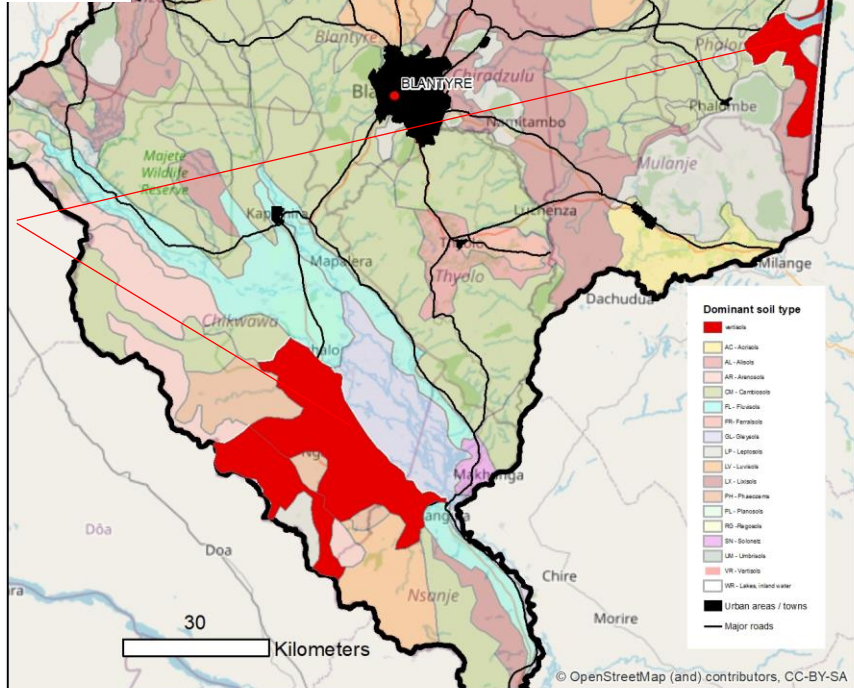
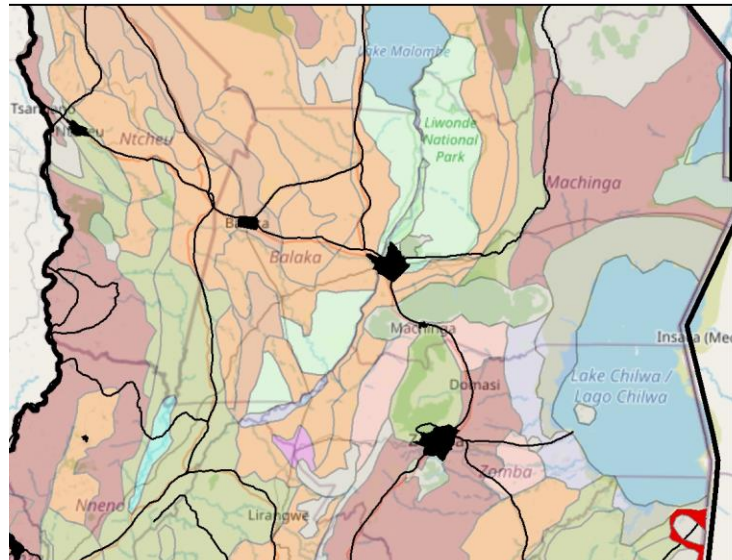
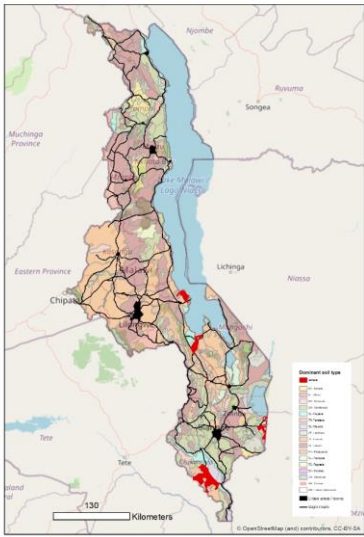


Soil texture

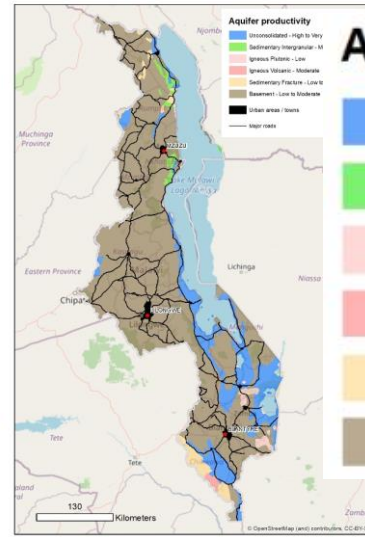


% clay in soil. Source: ISRIC, Hengl et al. 2015

Soil texture. Source: ISRIC, Hengl et al. 2015

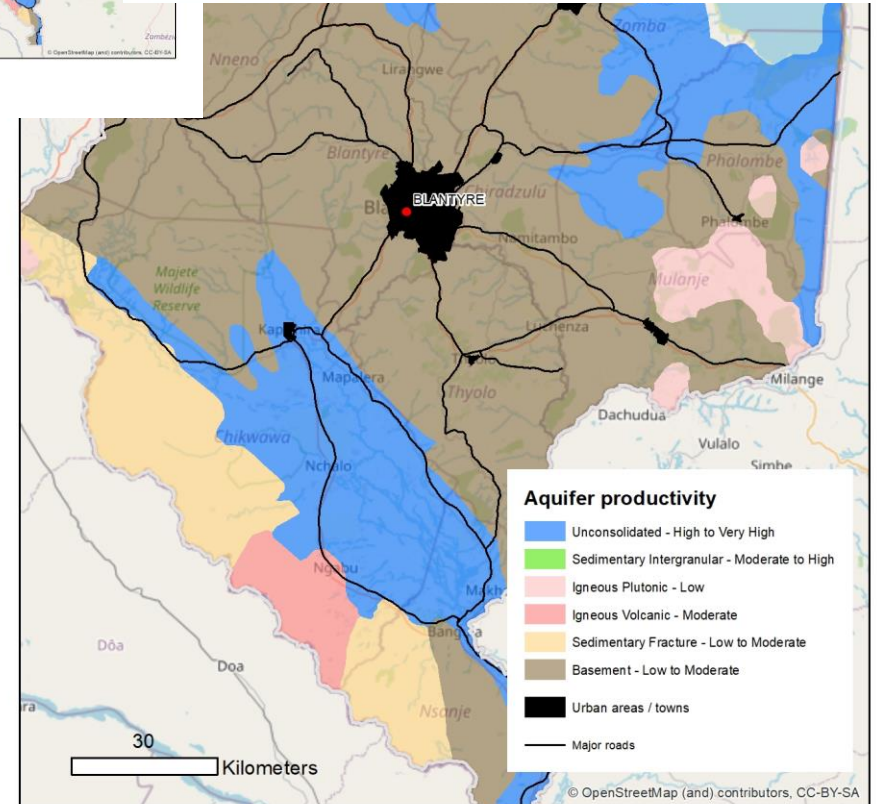


Vertisols highlighted in red



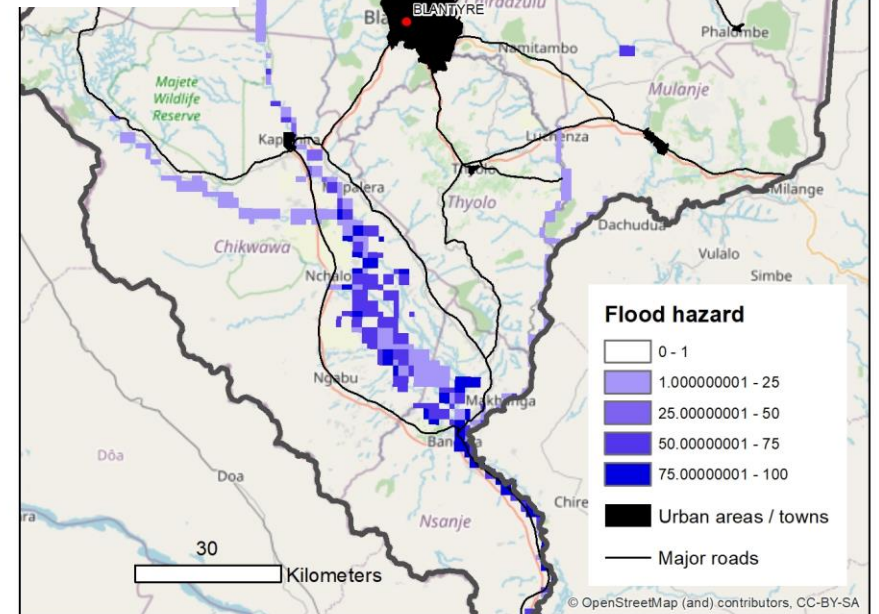
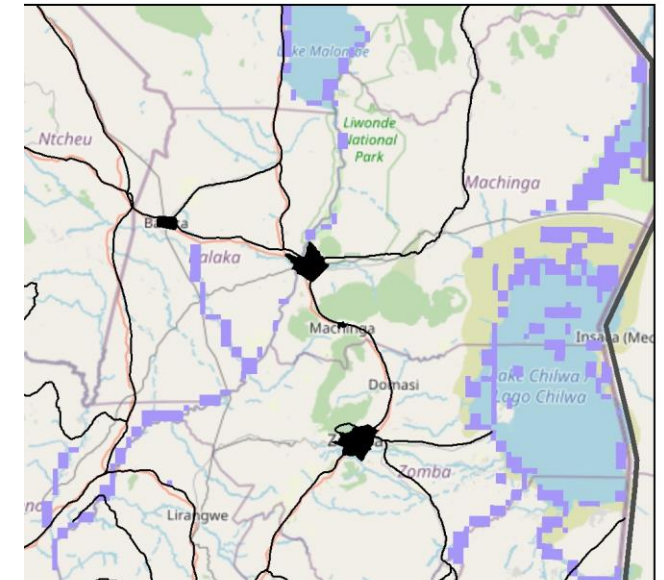
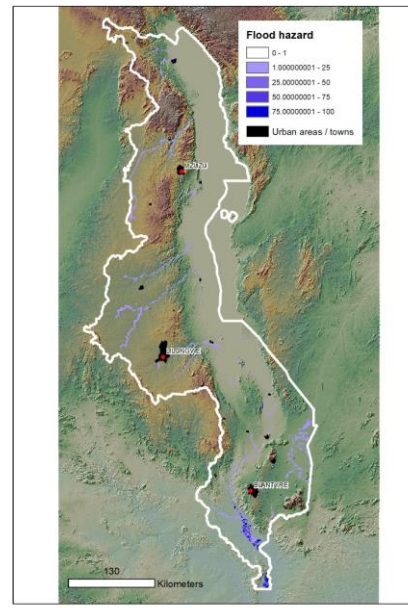
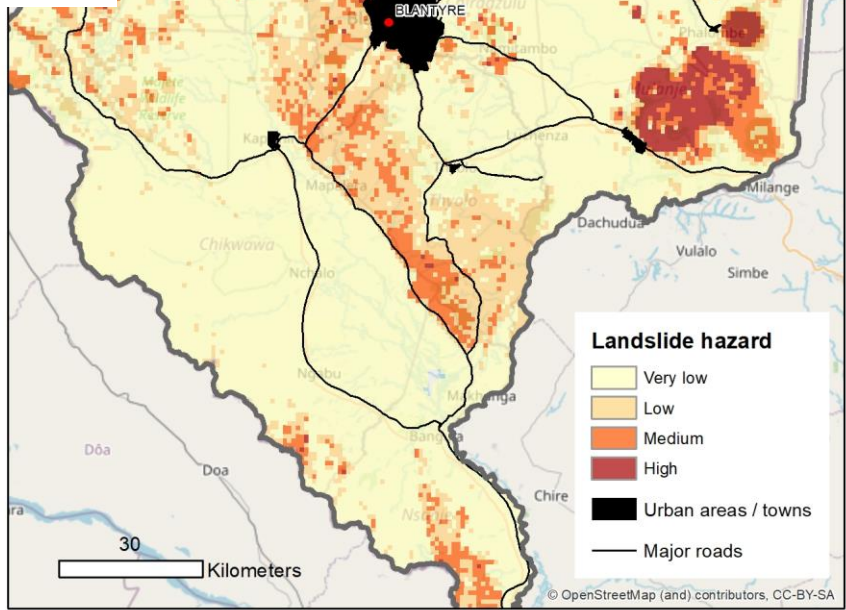
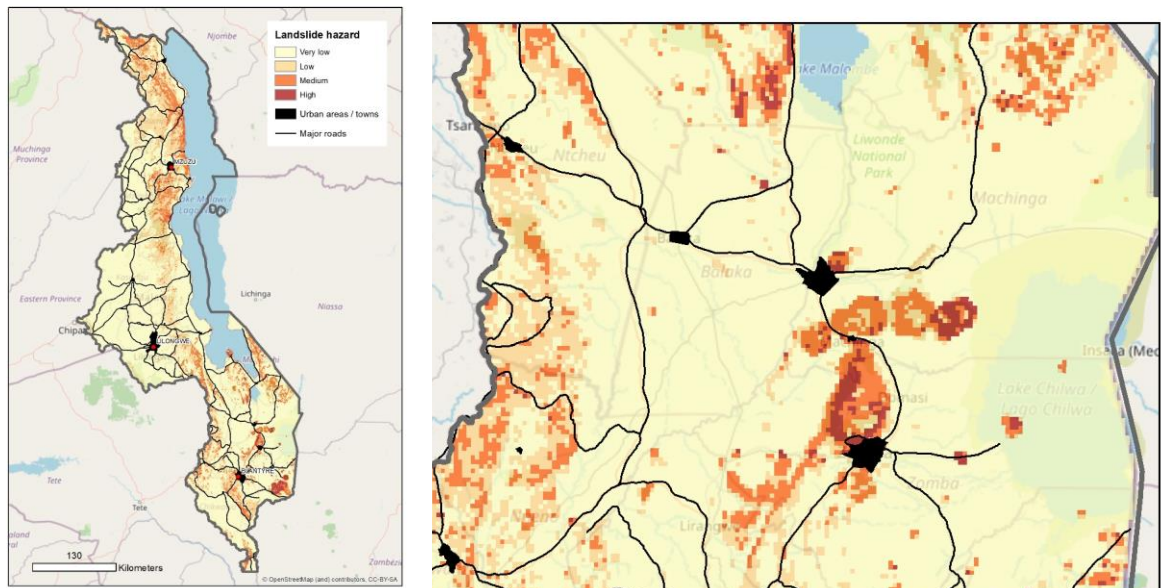
Aquifer productivity

- Unconsolidated - High to Very High
- Sedimentary Intergranular - Moderate to High
- Igneous Plutonic - Low
- Igneous Volcanic - Moderate
- Sedimentary Fracture - Low to Moderate
- Basement - Low to Moderate



Source: Africa Groundwater Atlas

Dominant soil type. Source: ISRIC, Dijkshroon et al., 2016



Landslide hazard. Source: GFDRR / World Bank

Flood hazard. Source: RCMRD & Malawi Dept of Disaster Management Affairs (DoDMA)

- Important to note that geoscience maps are often a result of:
 - observations (from field observations / samples and satellite data)
 - ‘expert judgement’ based on information available at the time
 - sometimes also in combination with computer models

- Therefore useful to think of a geological map as an ‘interpretation’ or ‘estimation’ of what the likely characteristics will be, rather than absolute ‘fact’.
 - may always be some local variation beyond the resolution of maps
 - databases do contain good distribution of observed data for Malawi, giving greater confidence in model/map outputs.

Datasets include: flood hazard, landslide hazard, topography, soil type, soil texture, % clay/silt/sand, soil bulk density, soil drainage, geology, aquifer productivity, soil organic carbon, market accessibility + more

Questions...

- Are these datasets of (potential) use to practitioners?
- Are these datasets accessible?
 - Is the GIS (Geographical Information System) format a barrier to their wider use?
 - Too many datasets / how to 'filter out' what is helpful?
 - Enough time to collate data when needed?
- Would a single map summarising characteristics for different areas (landscape types) be useful?