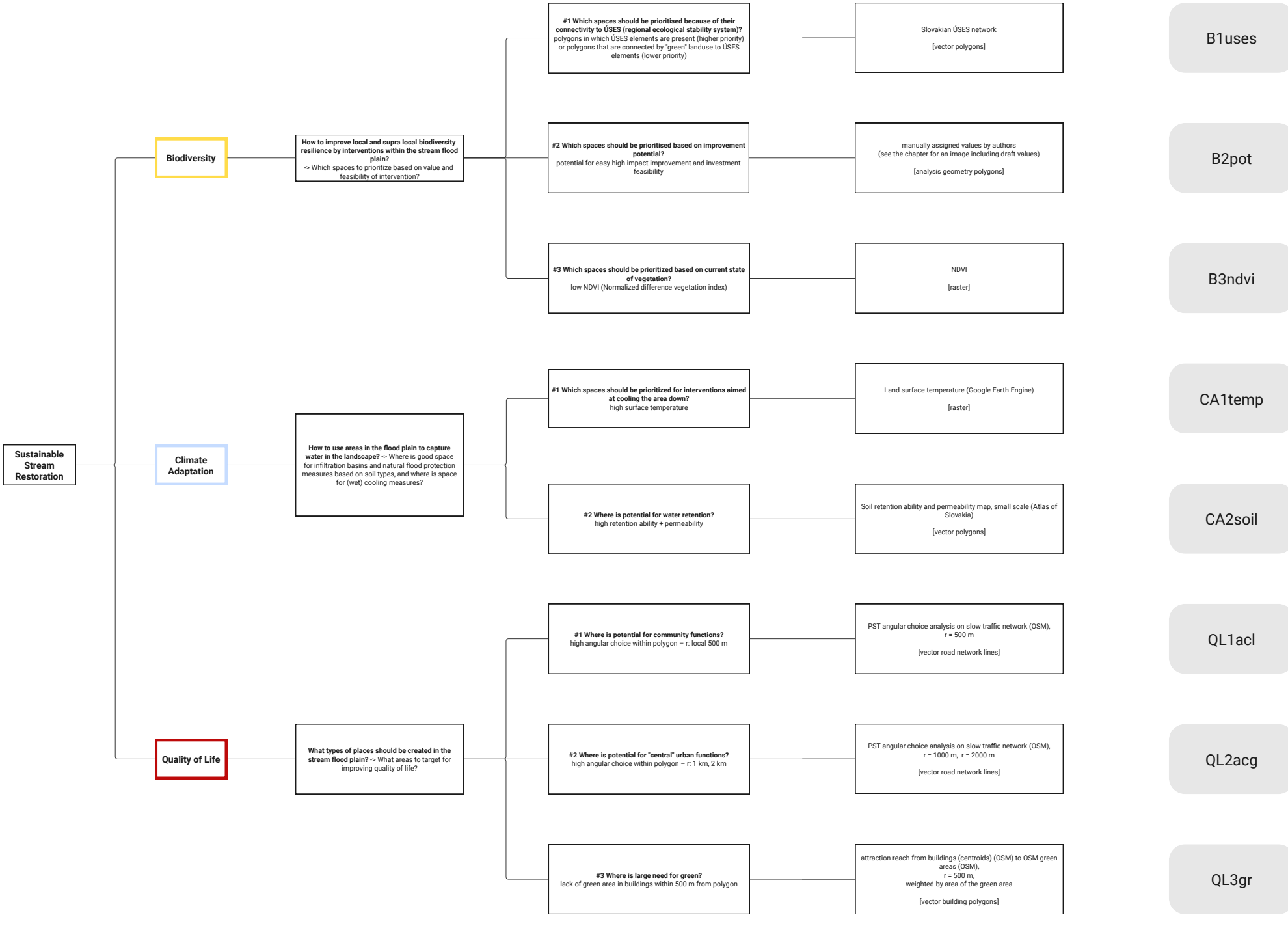
Sustainable Stream Restoration
Biodiversity
How to improve local and supra local biodiversity resilience by interventions within the stream flood plain? -> Which spaces to prioritize based on value and feasibility of intervention?
#1 Which spaces should be prioritised because of their connectivity to ÚSES (regional ecological stability system)? polygons in which ÚSES elements are present (higher priority) or polygons that are connected by "green" landuse to ÚSES elements (lower priority)
Slovakian ÚSES network
[vector polygons]
B1uses
#2 Which spaces should be prioritised based on improvement potential? potential for easy high impact improvement and investment feasibility
manually assigned values by authors (see the chapter for an image including draft values)
[analysis geometry polygons]
B2pot
#3 Which spaces should be prioritized based on current state of vegetation? low NDVI (Normalized difference vegetation index)
NDVI
[raster]
B3ndvi
Climate Adaptation
How to use areas in the flood plain to capture water in the landscape? -> Where is good space for infiltration basins and natural flood protection measures based on soil types, and where is space for (wet) cooling measures?
#1 Which spaces should be prioritized for interventions aimed at cooling the area down? high surface temperature
Land surface temperature (Google Earth Engine)
[raster]
CA1temp
#2 Where is potential for water retention? high retention ability + permeability
Soil retention ability and permeability map, small scale (Atlas of Slovakia)
[vector polygons]
CA2soil
Quality of Life
What types of places should be created in the stream flood plain? -> What areas to target for improving quality of life?
#1 Where is potential for community functions? high angular choice within polygon – r: local 500 m
PST angular choice analysis on slow traffic network (OSM), r = 500 m
[vector road network lines]
QL1acl
#2 Where is potential for "central" urban functions? high angular choice within polygon – r: 1 km, 2 km
PST angular choice analysis on slow traffic network (OSM), r = 1000 m, r = 2000 m
[vector road network lines]
QL2acg
#3 Where is large need for green? lack of green area in buildings within 500 m from polygon
attraction reach from buildings (centroids) (OSM) to OSM green areas (OSM), r = 500 m, weighted by area of the green area
[vector building polygons]
QL3gr