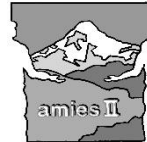


AMIES II - Final Meeting

Tbilisi in September 2017



Scenario Development for Sustainable Land Use
in the Greater Caucasus, Georgia

Project unit A

Landscape Analysis with Geo-information Systems

– Land-Cover Pattern Investigations in the High-Mountains Based on Spatial Data



Center for
International
Development and
Environmental Research



Ivane Javakhishvili
Tbilisi State
University



Ilia State
University



Agricultural
University
of Georgia

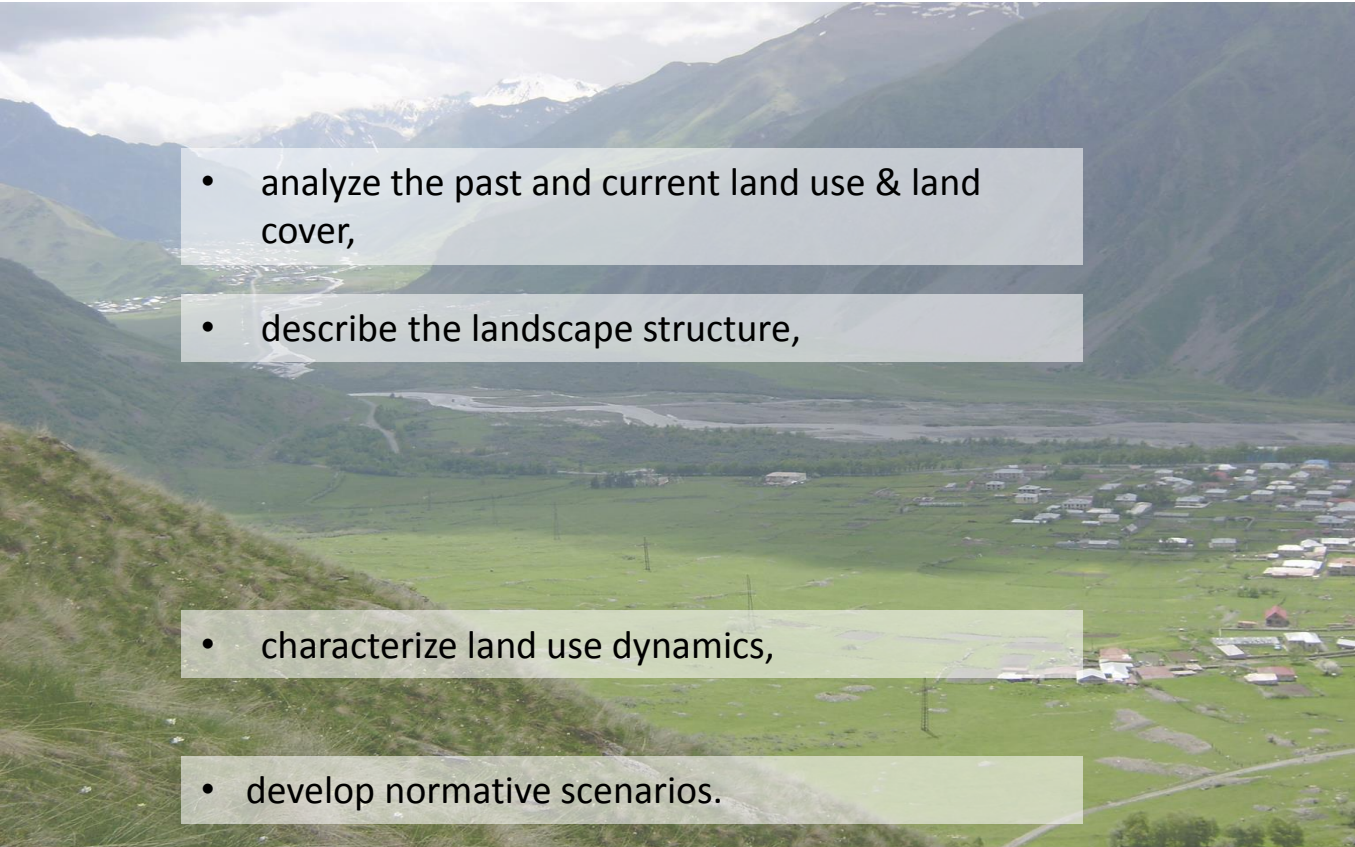


Historic photographs provided by the Kazbegi Museum
Archive

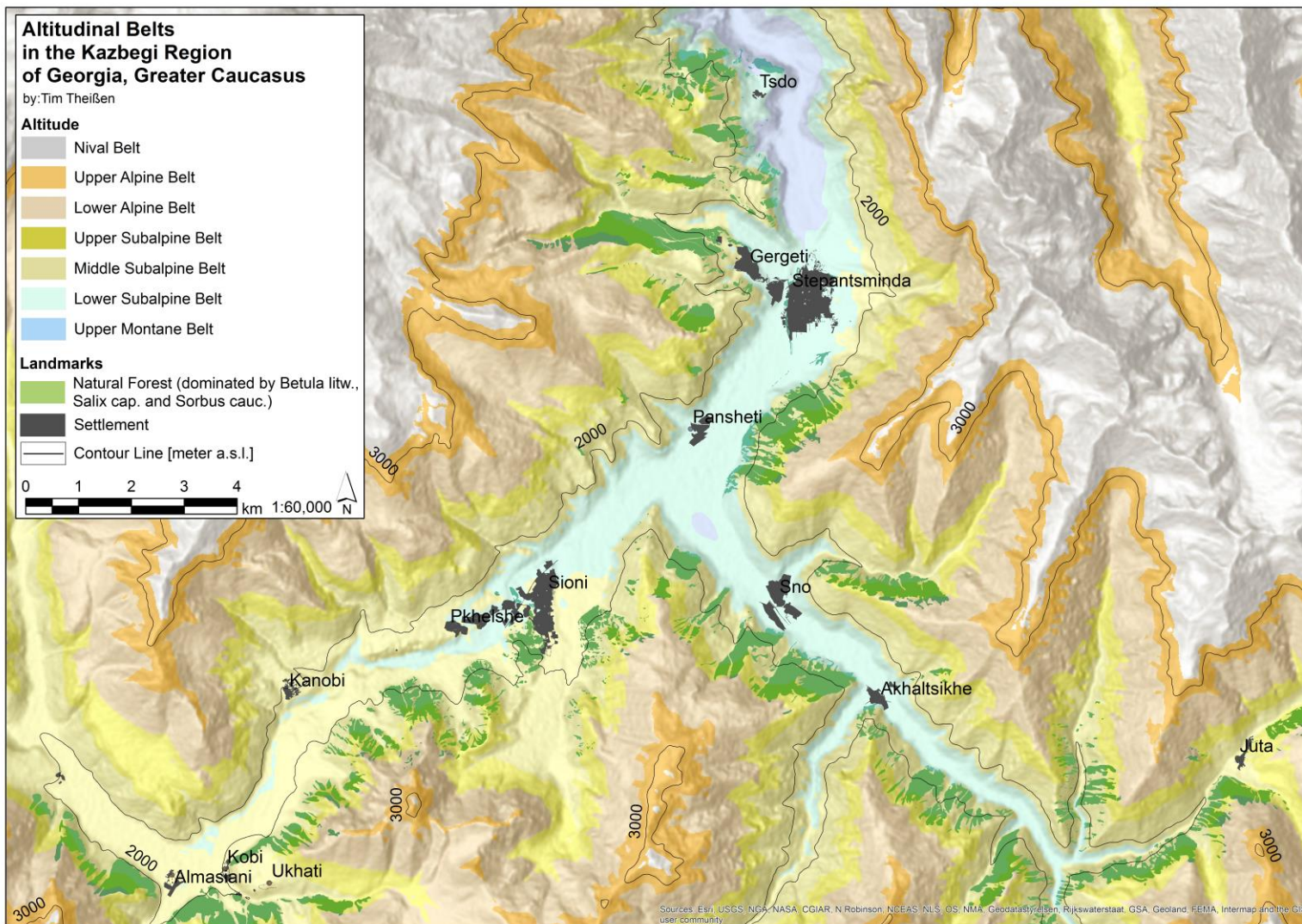




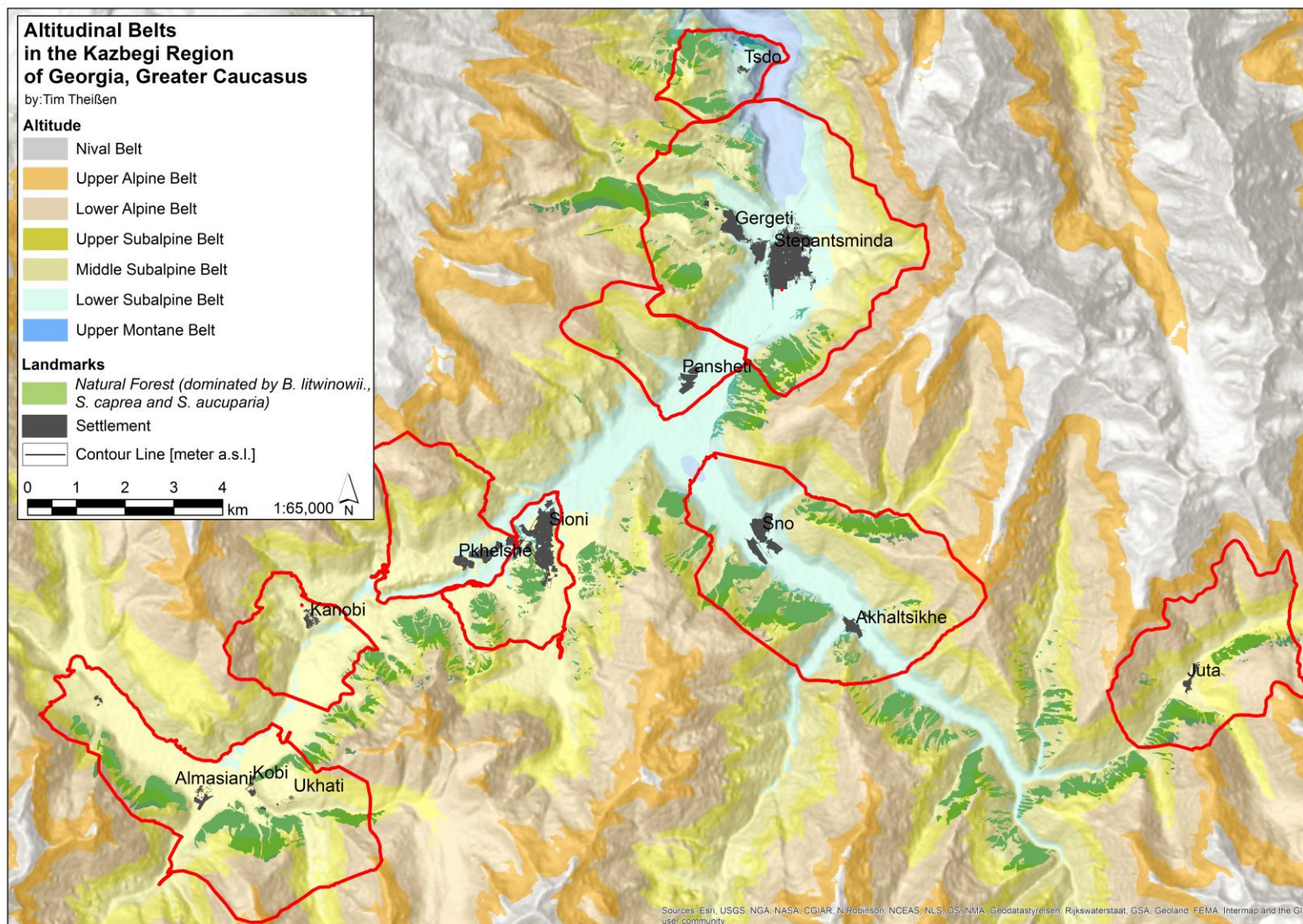


- 
- analyze the past and current land use & land cover,
 - describe the landscape structure,
 - characterize land use dynamics,
 - develop normative scenarios.



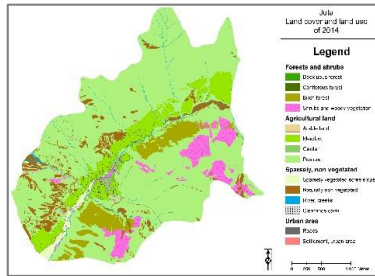


Kazbegi region, Central Greater Caucasus

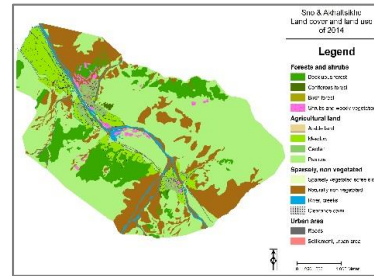


Study villages

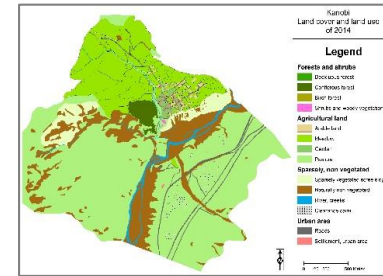
Juta



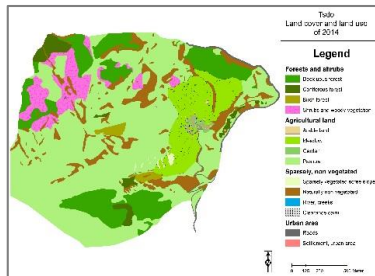
Sno & Akhaltsikhe



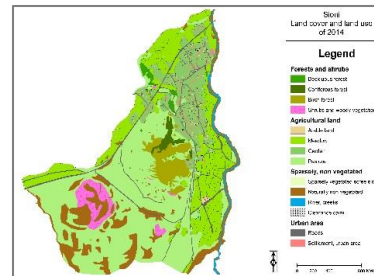
Kanobi



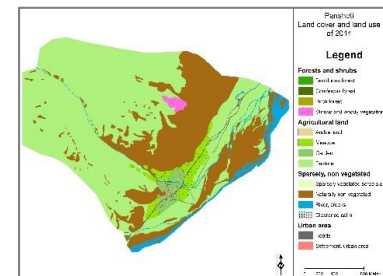
Tsdo



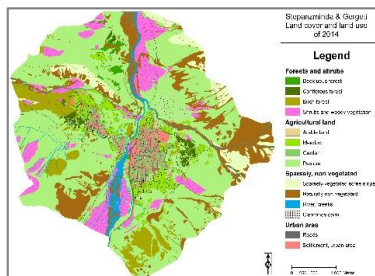
Sioni



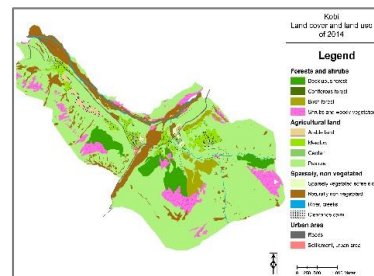
Pansheti



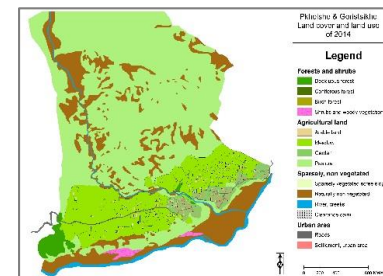
Stepanzminda & Gergeti



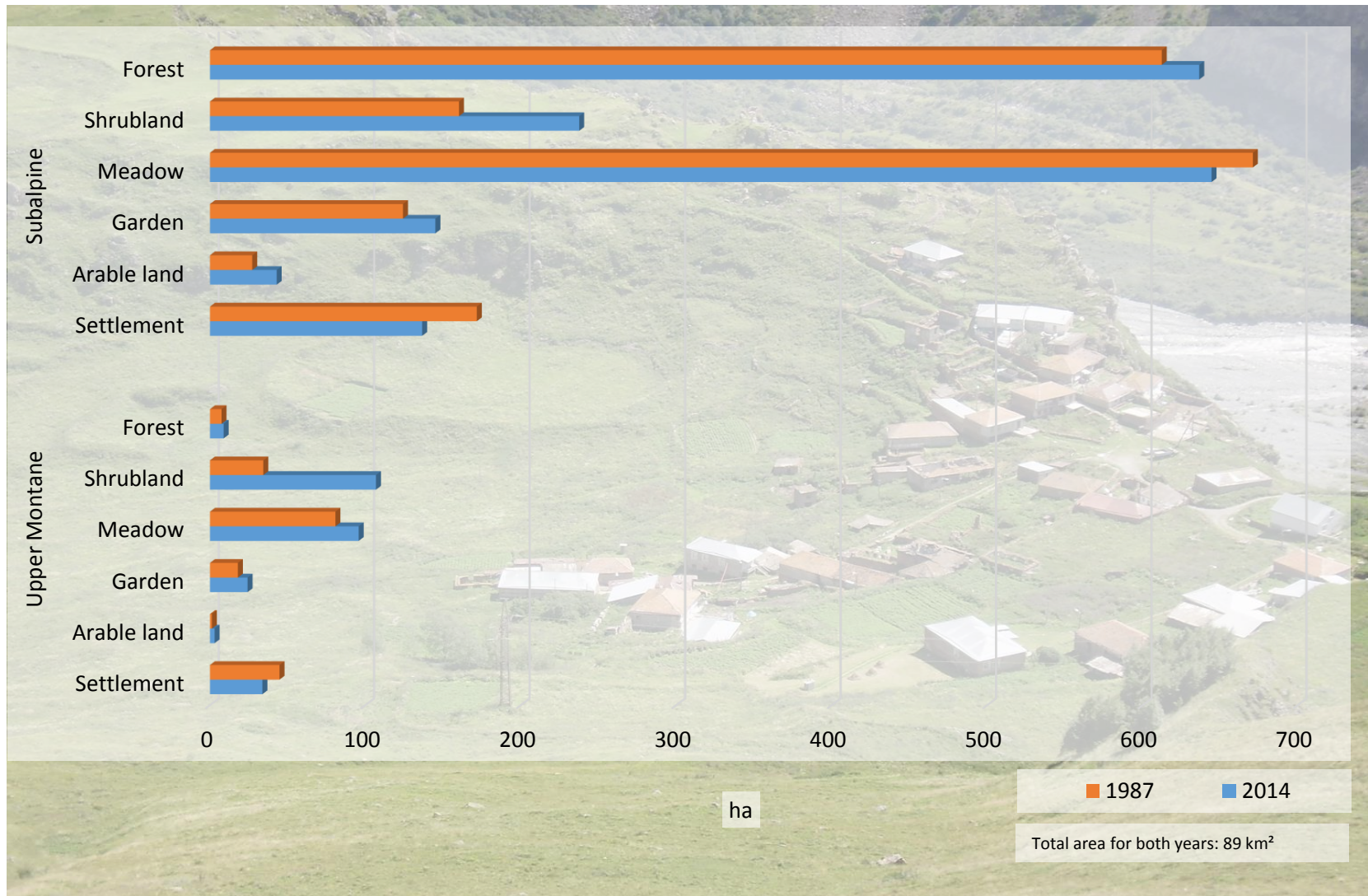
Kobi & Ukhati

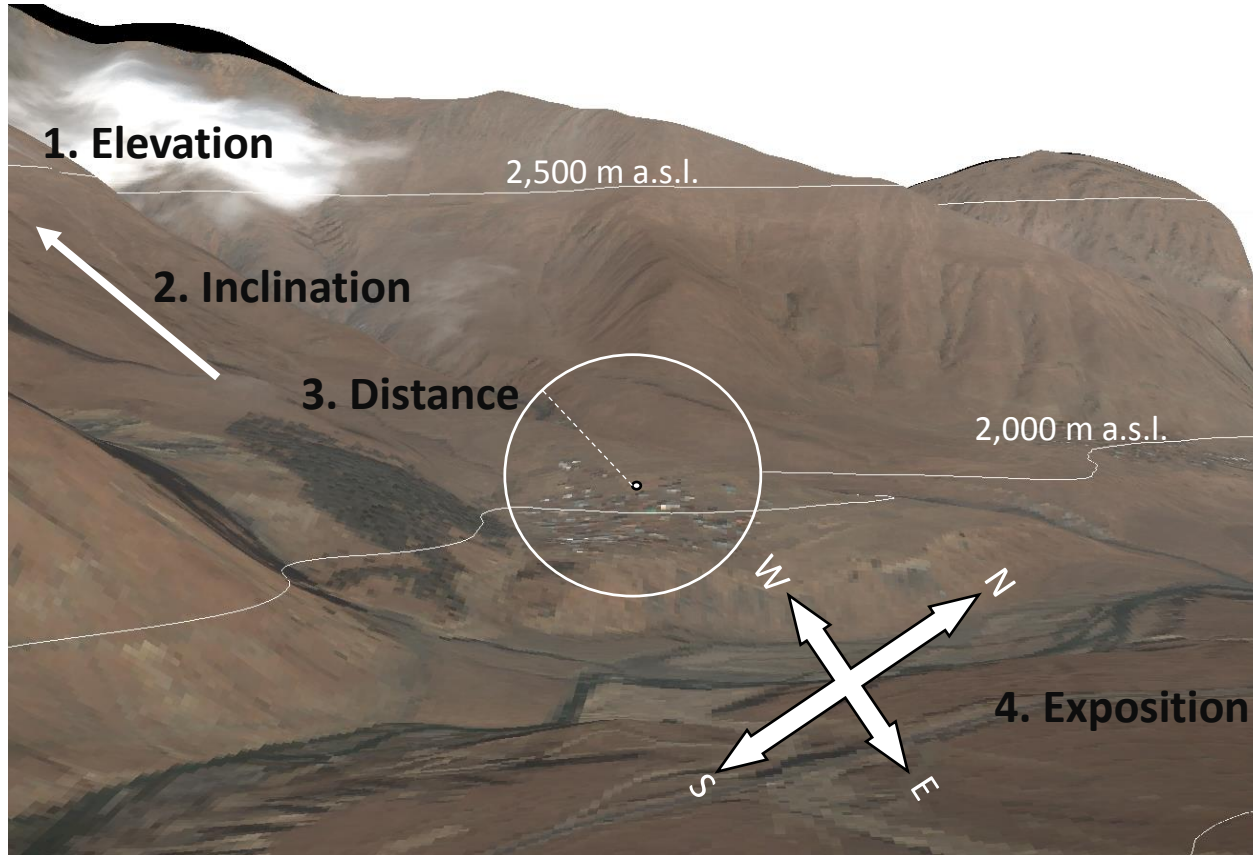


Pkhelshe & Gorisikhe

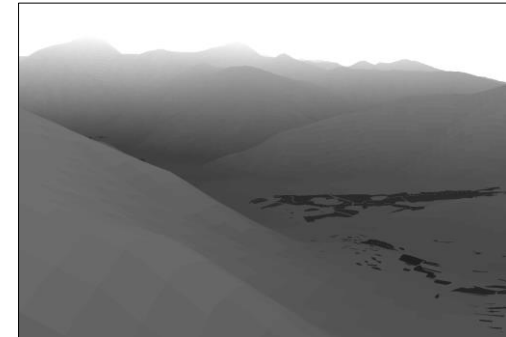




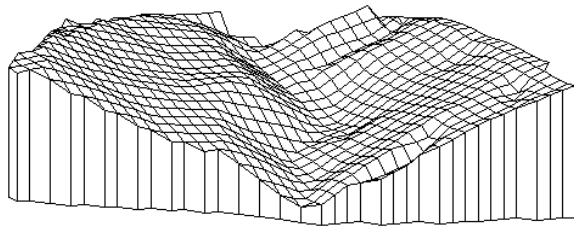
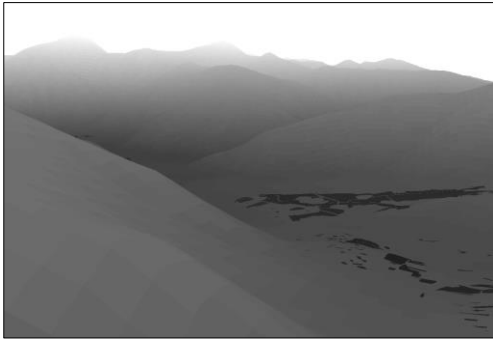




Digital Elevation Model



Digital Elevation Model



For each grid the information:

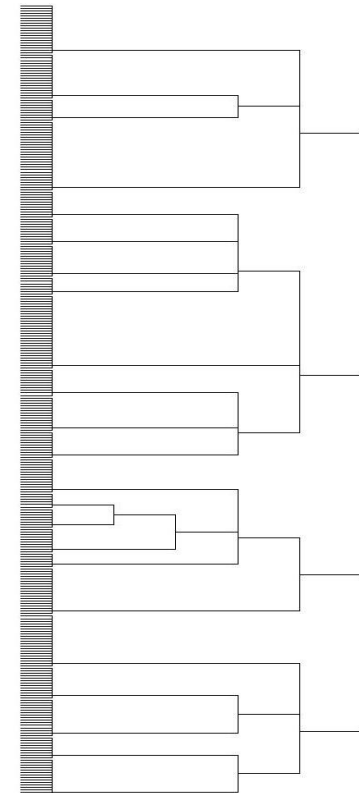
- Altitude
- Slope
- Distance
- Exposition

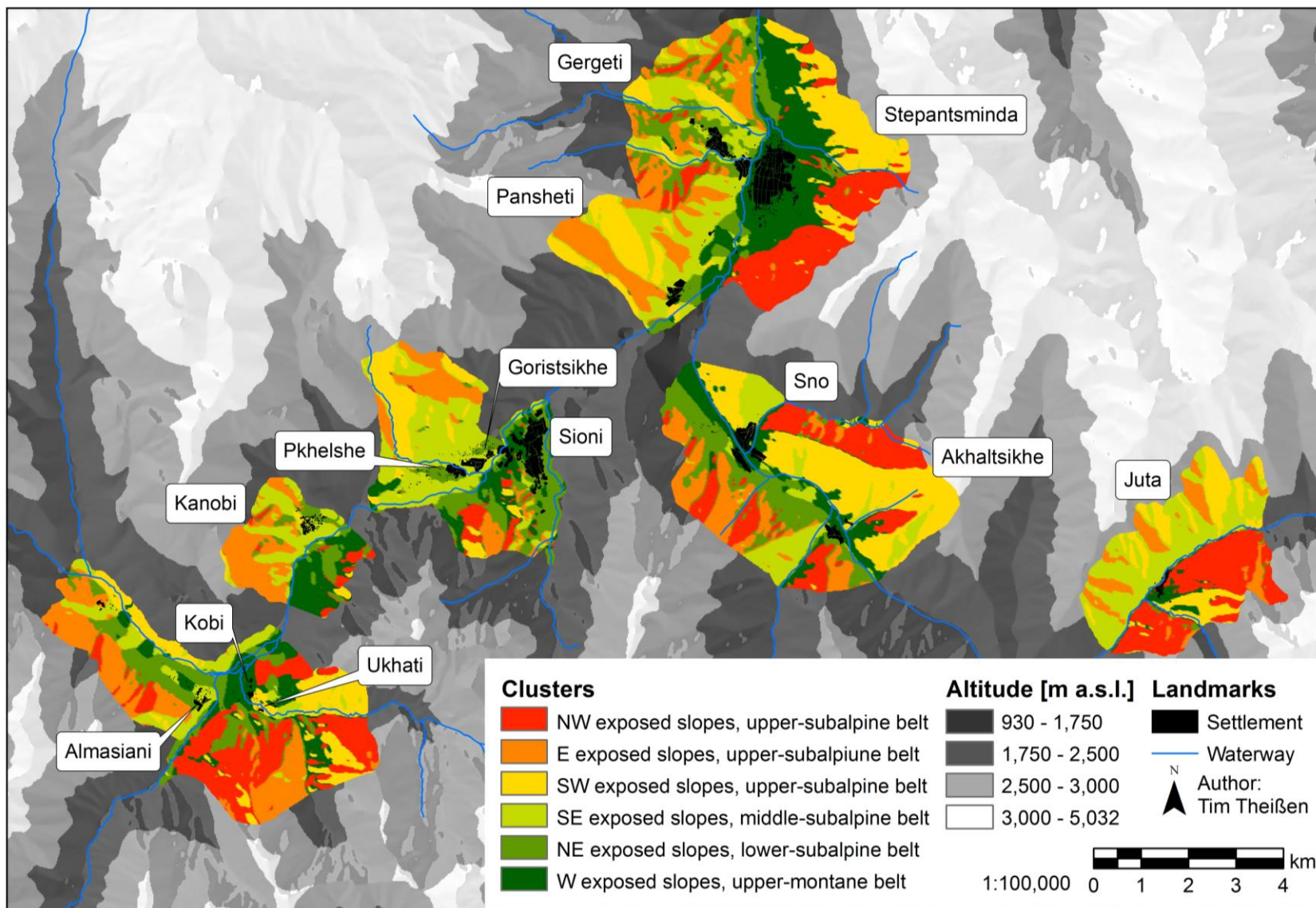
Exploratory data analysis

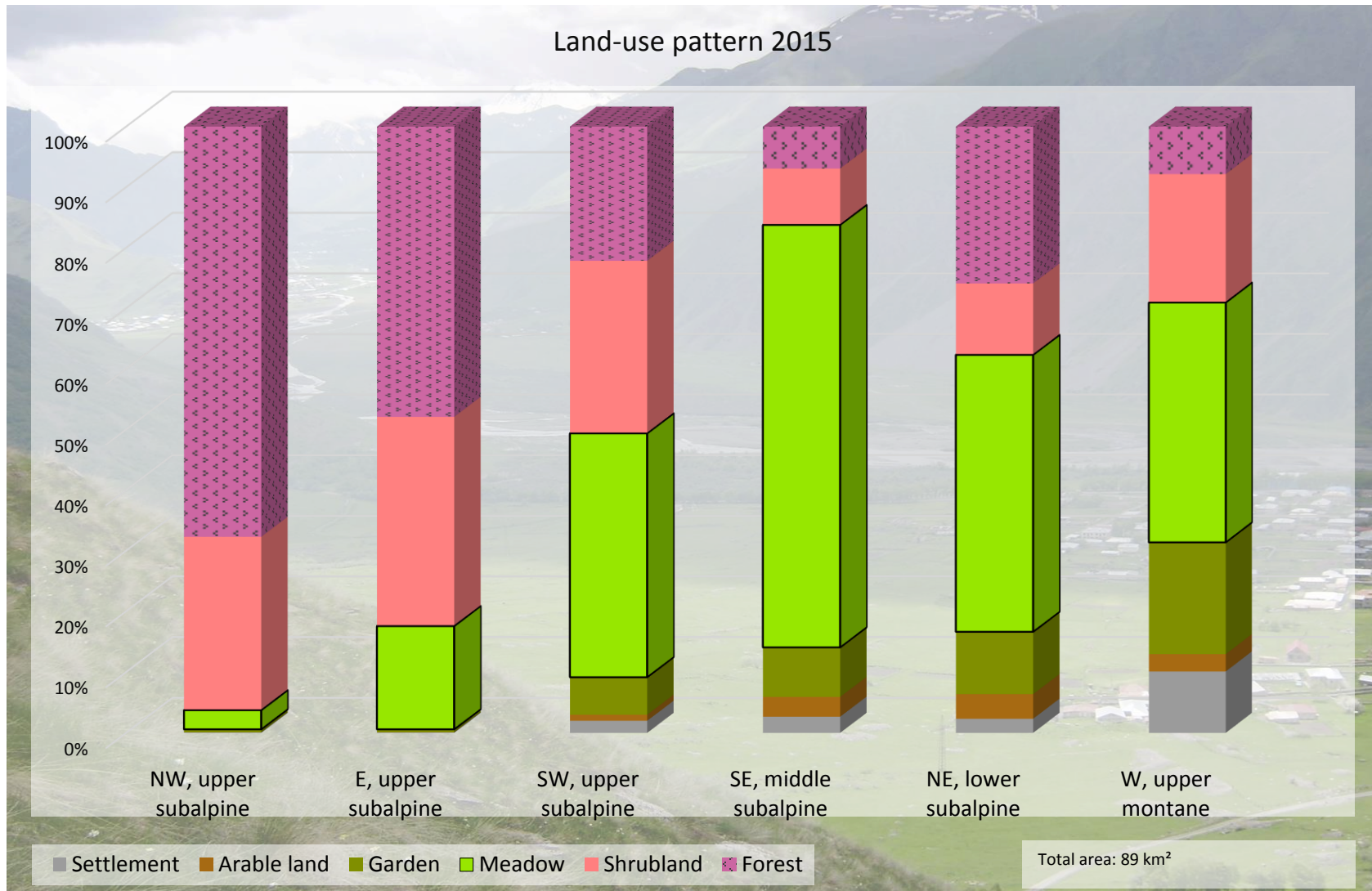
K-means Cluster Analysis:

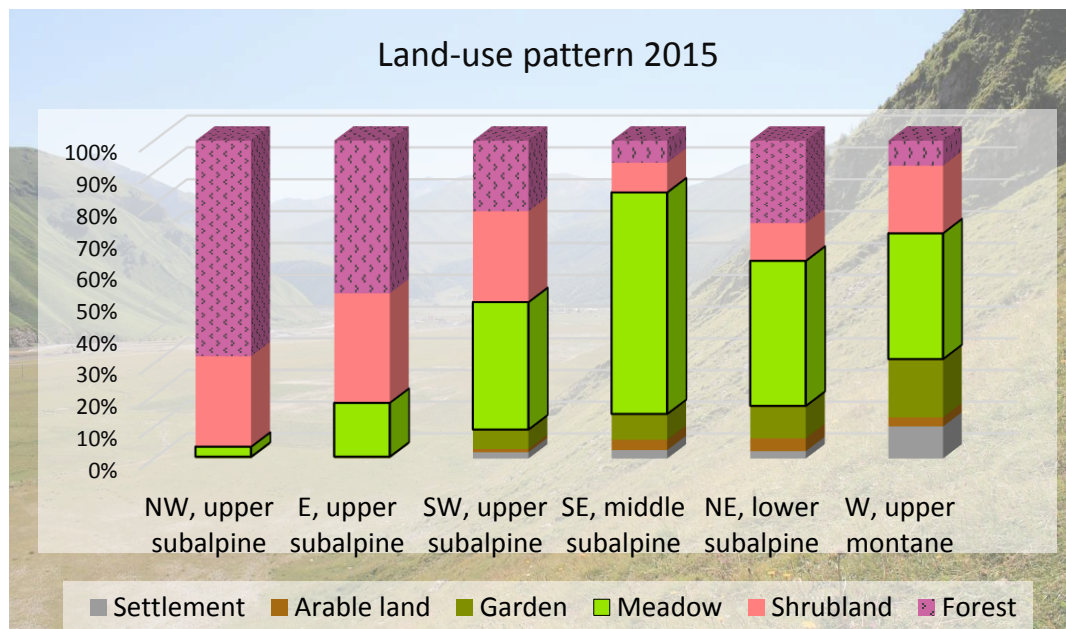
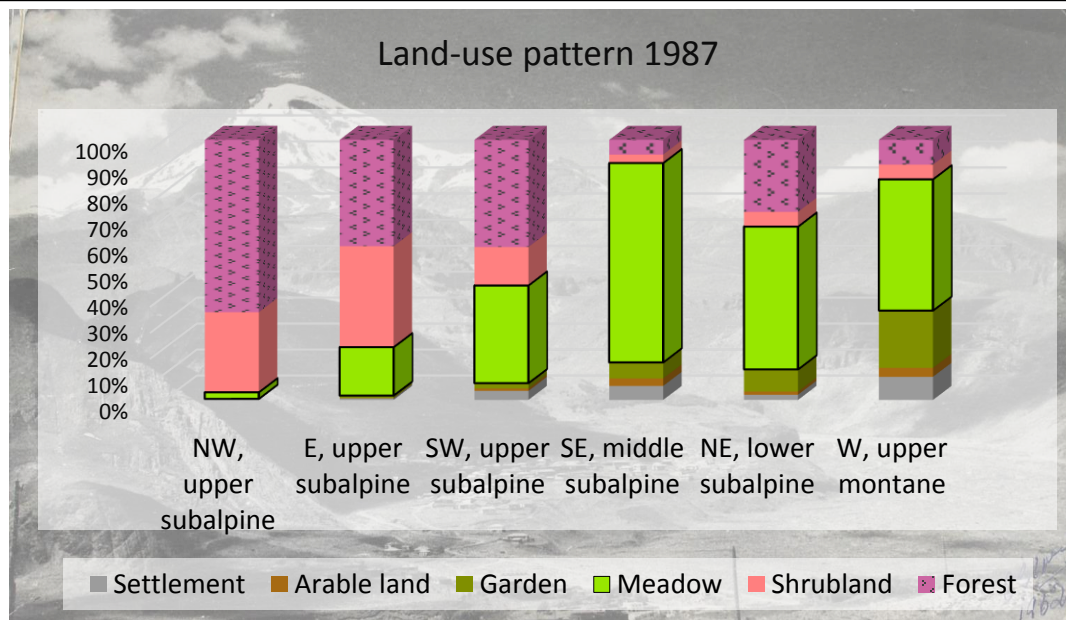
- Non-hierarchical clustering algorithm to classify a dataset

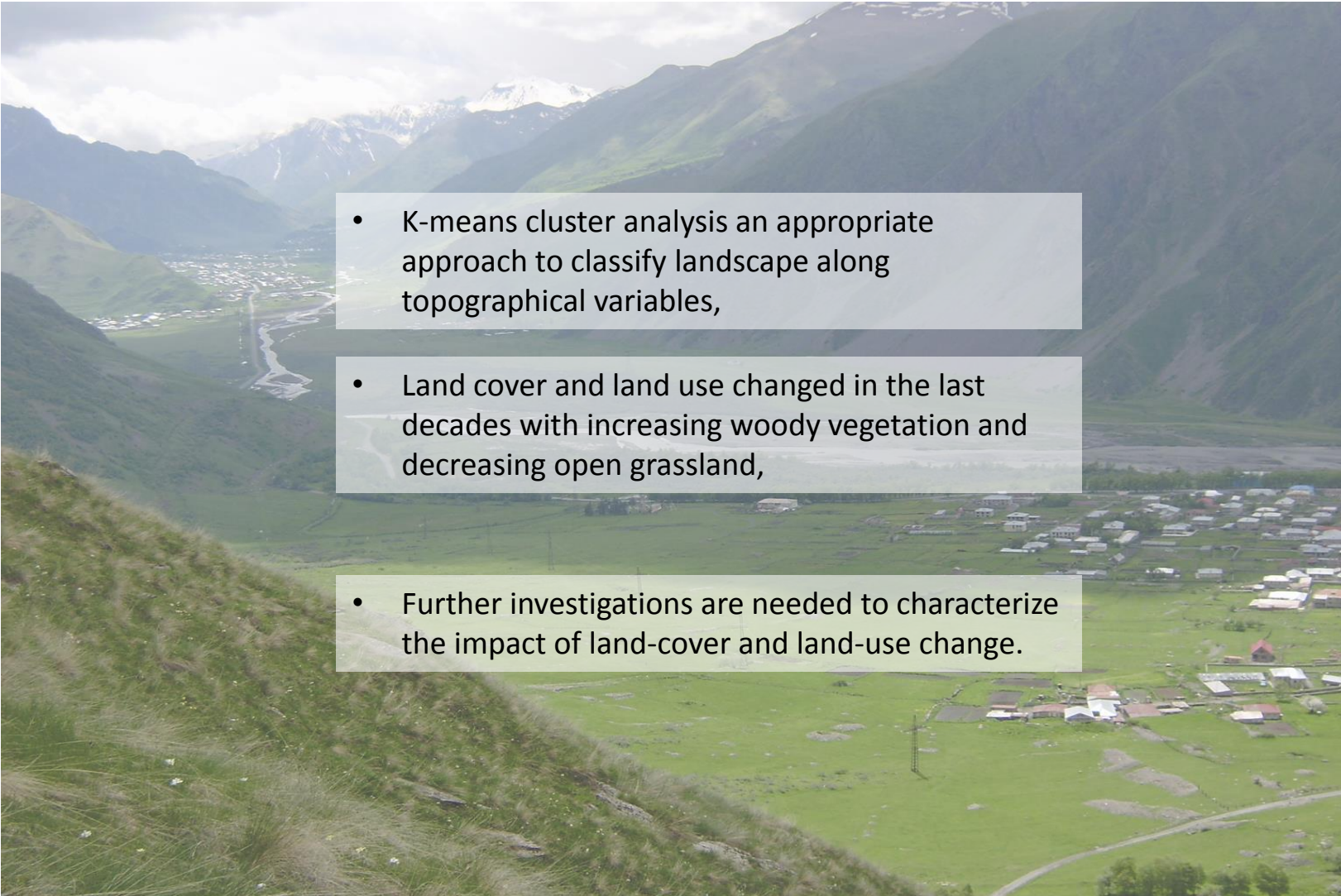
Cluster Dendrogram









- 
- A wide-angle photograph of a mountain valley. In the foreground, a grassy slope descends towards a green valley floor. A small village with several buildings is visible in the middle ground. In the background, steep, forested mountains rise, with snow-capped peaks visible under a cloudy sky.
- K-means cluster analysis an appropriate approach to classify landscape along topographical variables,
 - Land cover and land use changed in the last decades with increasing woody vegetation and decreasing open grassland,
 - Further investigations are needed to characterize the impact of land-cover and land-use change.

Thank you for your attention

1960



2014

