Integration of statistics and geospatial information at Kosovo Agency of Statistics

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Summary

1. Introduction

2. Spatial references and Territorial identification registry at Kosovo Agency of Statistics

3. The geographic hierarchy data in Statistics

4. Integration Statistics - Methods georeferencing statistical data

5. Analysis and dissemination of statistical data using GIS

6. Spatial analysis (Commuting data Case study – Prishtina city, Kosovo)

7. Conclusions

Facts about Kosovo

Total Area: **10 906** km²

Administrative Units: **38** Municipalities

Settlements: **1469**

Resident population: **1.8 mill. est. 2016**

Population density : **165** p/km²

Capital : Prishtina

Currency: Euro

1. Introduction

GIS in Kosovo official statistics

- Nowadays the development process of obtaining and providing statistical information to a large extent is based on its spatial reference.

- For many statistical indicators, geographic locations play an essential role for the analysis, especially on an international scale.

Census GIS database is developed in line with UN and Eurostat recommendations taking into consideration the local context.

The main guides are extracted from UN Manual on Geographical Information Systems and Digital Mapping , as one of the standards available for definition the frame for Rules of Conduction the European Union Directive called Infrastructure Spatial information in European Community (INSPIRE).
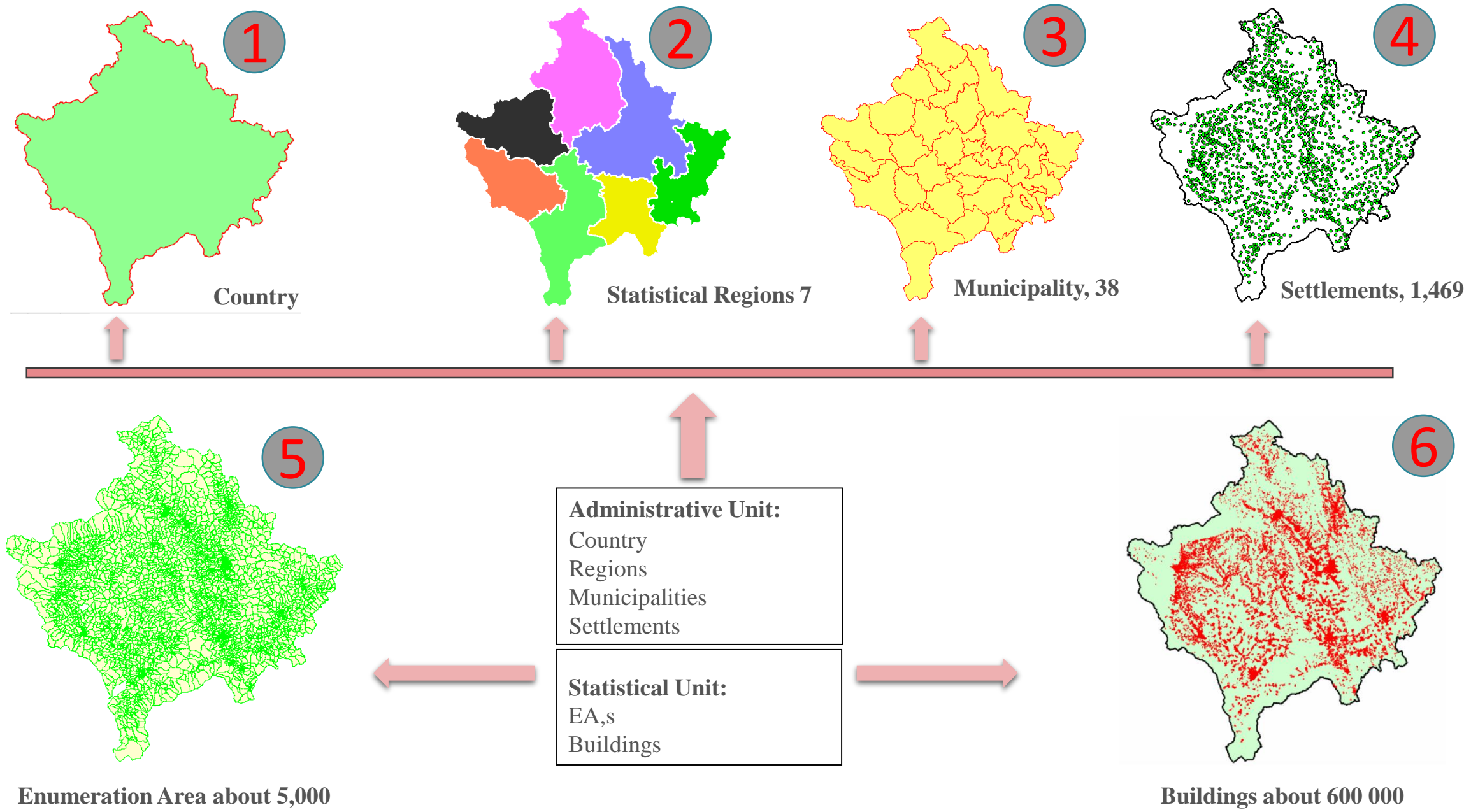
Objective : GIS resource

- Integrate GIS in more statistics/analyzes
- Possibilities for establishing new statistics, and analysis by the use of GIS
- Assist with integrating of GIS in already establish statistics
- Increase the expertise in GIS

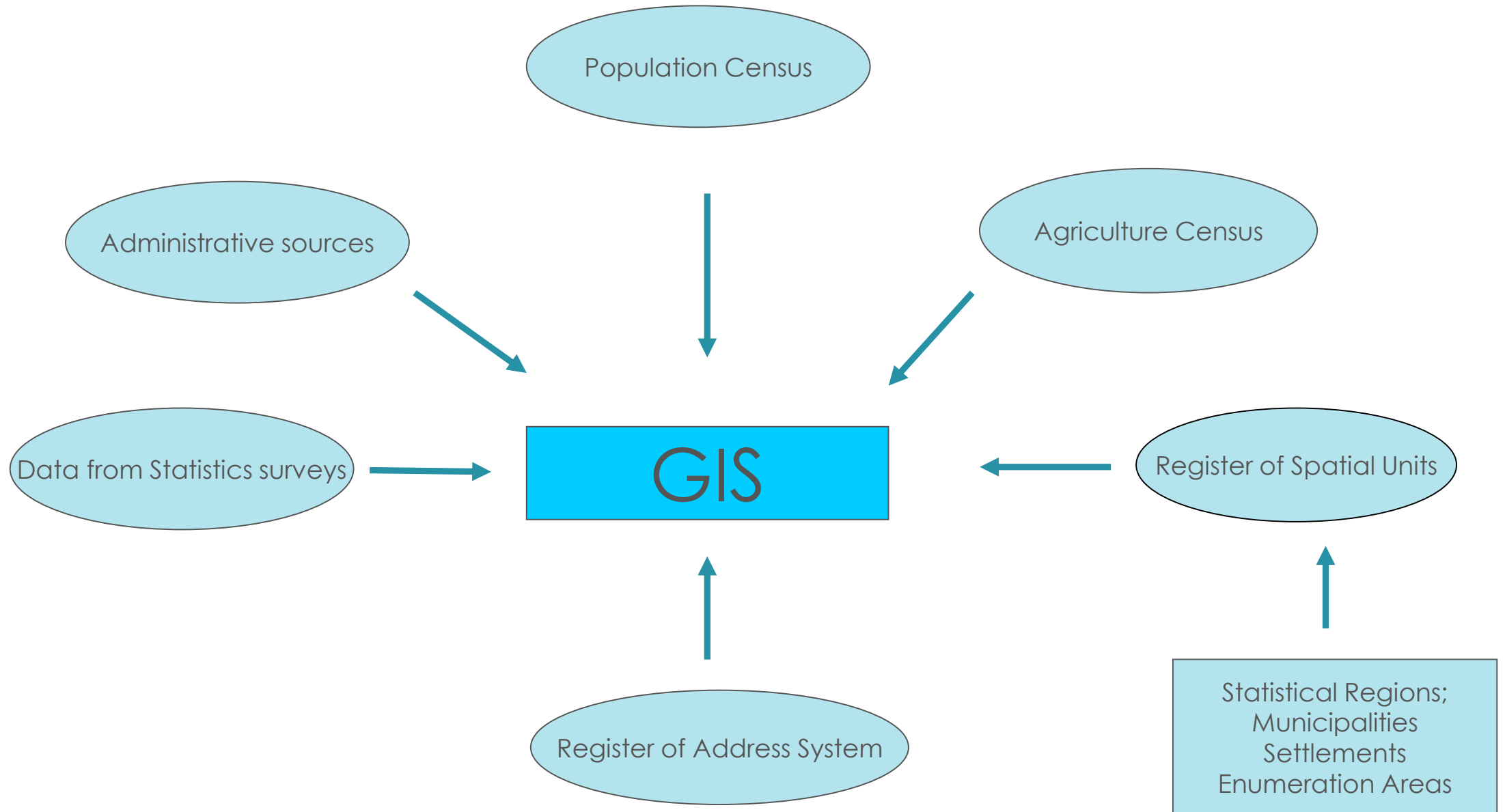Provide support to common resources associated to GIS including:

- IT infrastructure, hardware/software
- National and International coordination and cooperation

# 2. Spatial references and Territorial identification registry at Kosovo Agency of Statistics

Country

Statistical Regions 7

Municipality, 38

Settlements, 1,469

Administrative Unit:
Country
Regions
Municipalities
Settlements

Statistical Unit:
EA,s
Buildings

Enumeration Area about 5,000

Buildings about 600 000

2.1 Data Source
Status of use of GIS in production and dissemination of statistics

3. Hierarchy of Census and other statistical data organized in GIS
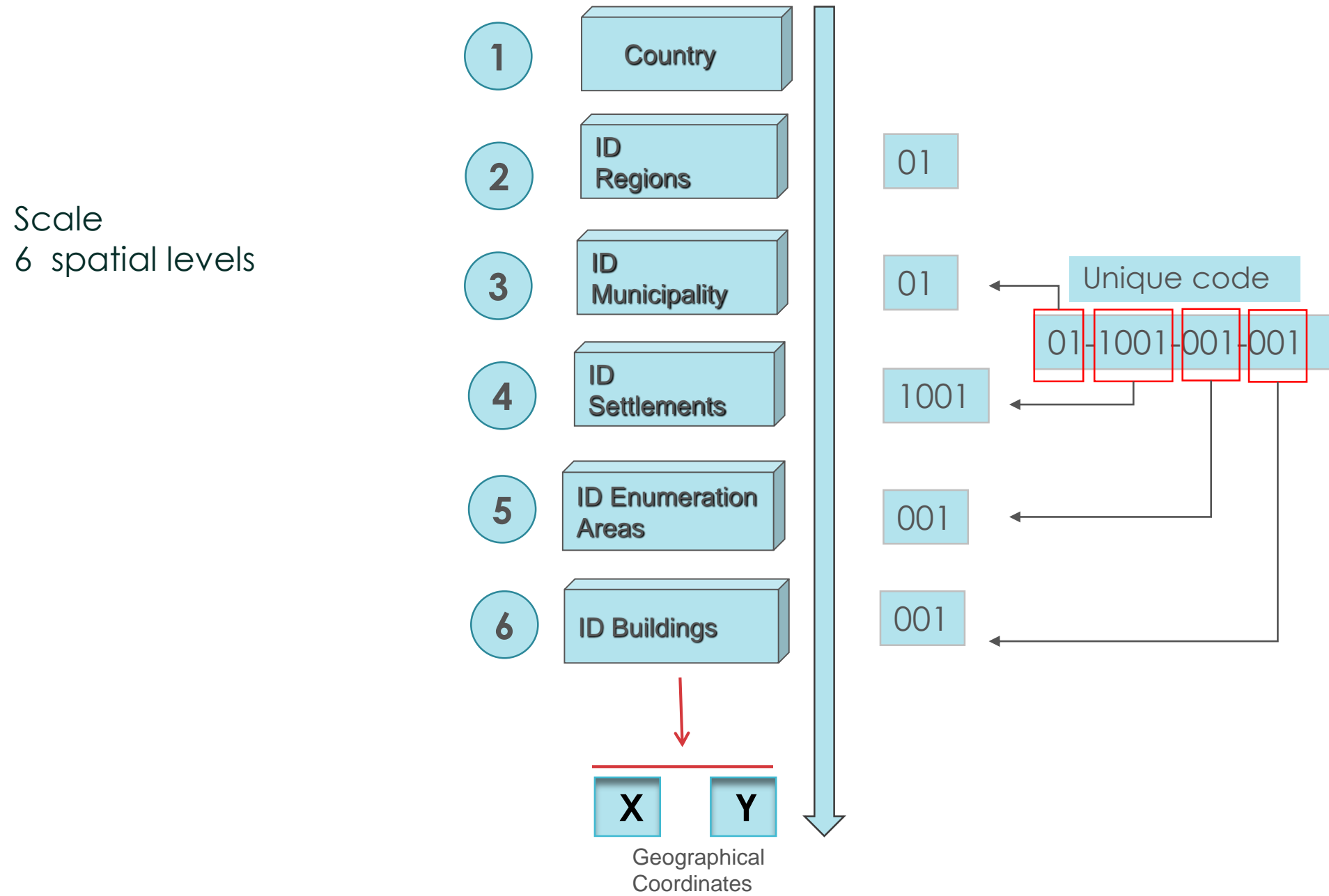
4. Integration Statistics - Methods geo-referencing statistical data

Point-base data Census 2011 georeferenced
data x,y coordinates at building level

Population distribution by grid

Statistical data in coordinates X,Y

Location of buildings is specified using geographical x,y coordinates, giving the exact location of each building and make possibility to linking micro data and aggregated them with others Statistical and Administrative units.

5. Analysis and dissemination of statistical data using GIS

Atlas Contents

• 90 maps

• 9 themes

• 46 indicators

• 6 Spatial levels
(Country, Municipalities, Settlements,
Grid, Enumeration Areas, and Buildings)

The atlas is divided
in 4 chapters

Population distribution, density and dynamics

Demographic characteristics

Socio-economic characteristics

Households and housing

Analysis and dissemination of statistical data using GIS

Thematic maps help to understand not only Kosovo as a whole, but also particular areas in the country, Underlining their specific demographic, social, and economic characteristics.

* Maps communicate a concept or an idea or support textual information

* Maps are attractive

* Maps encourage comparisons
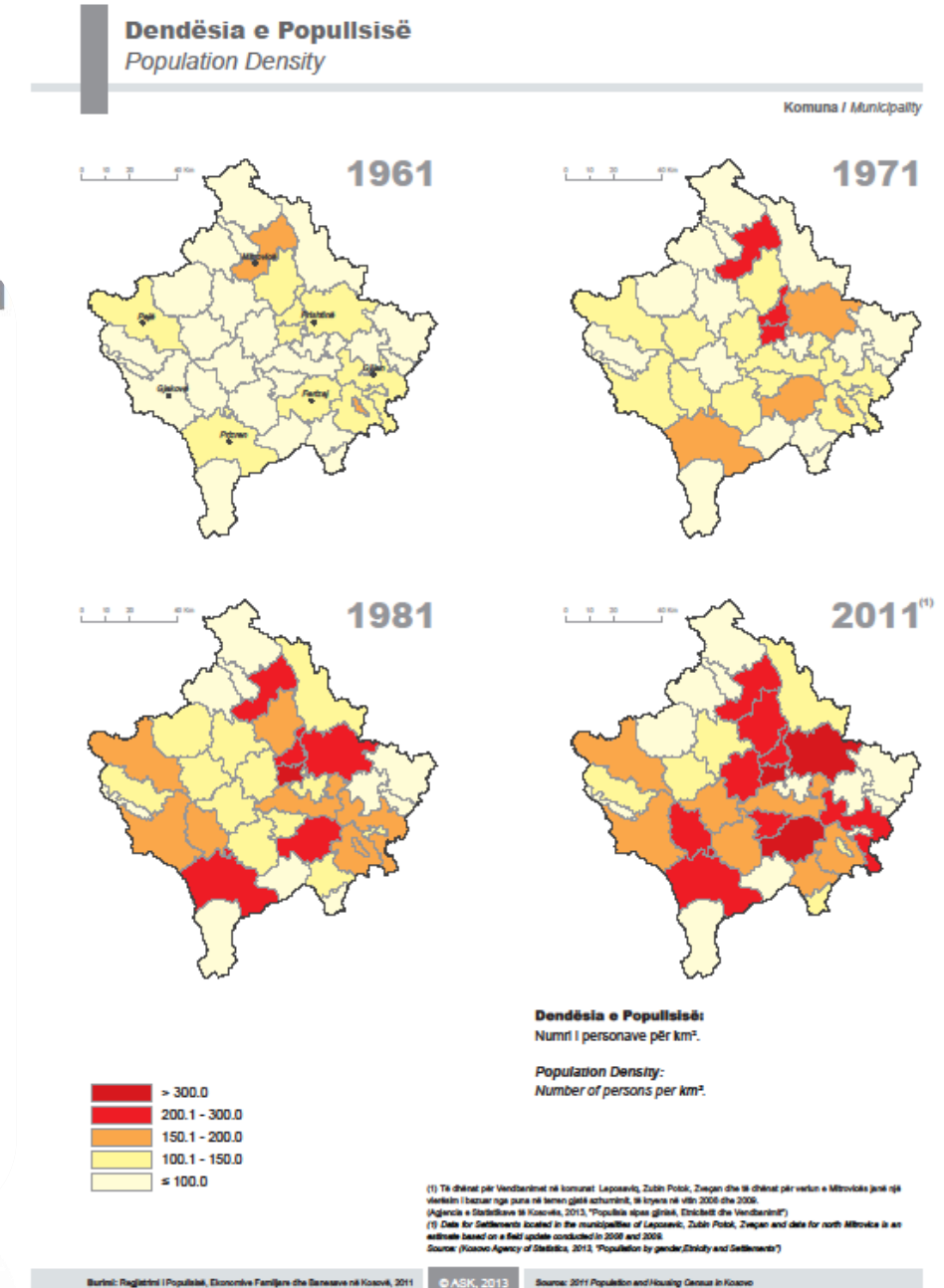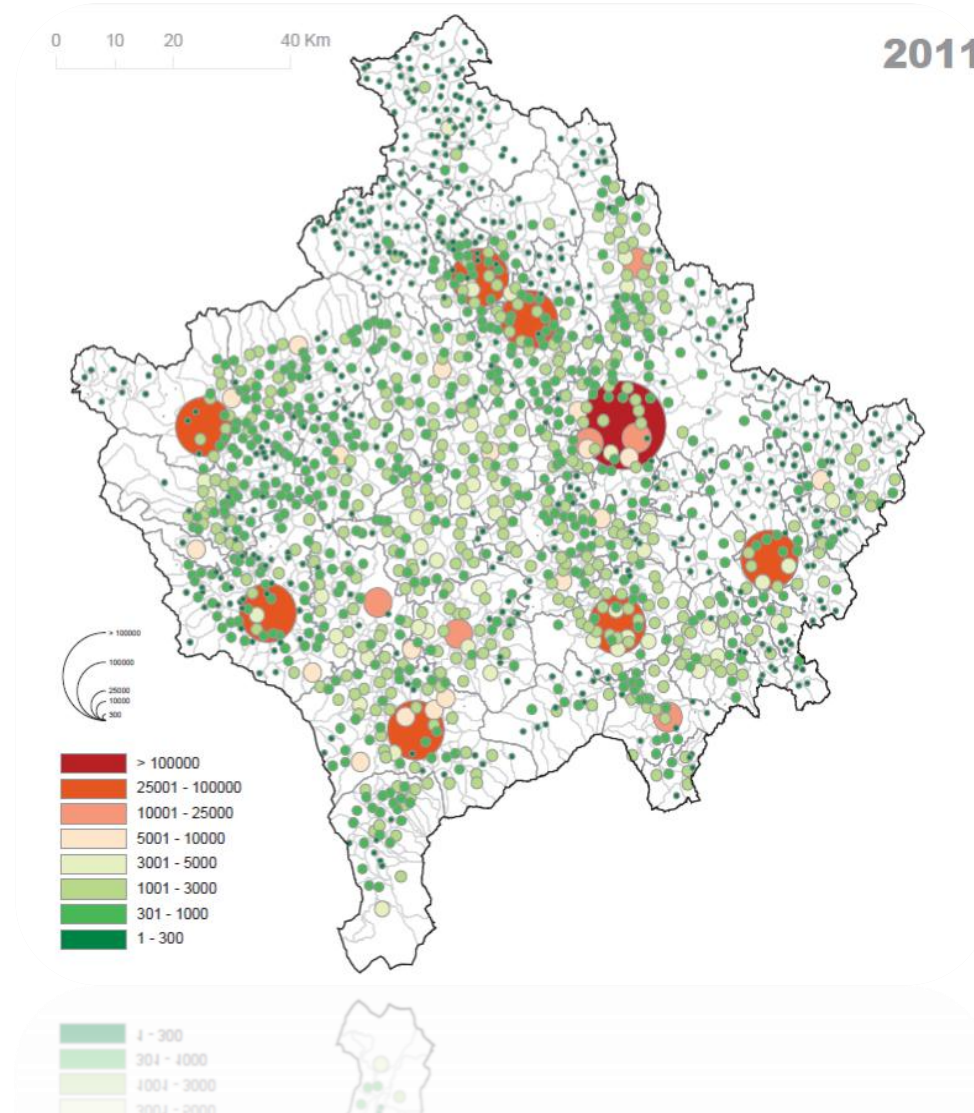
Analysis and dissemination of statistical data using GIS

Spatial analysis techniques

Distances for health institutions in Kosovo and % of population

Health intistutions - distances
Level 1
2000 meters = 56 percent
5000 meters = 87 percent
Level 2
2000 meters = 41 percent
5000 meters = 90.6 percent
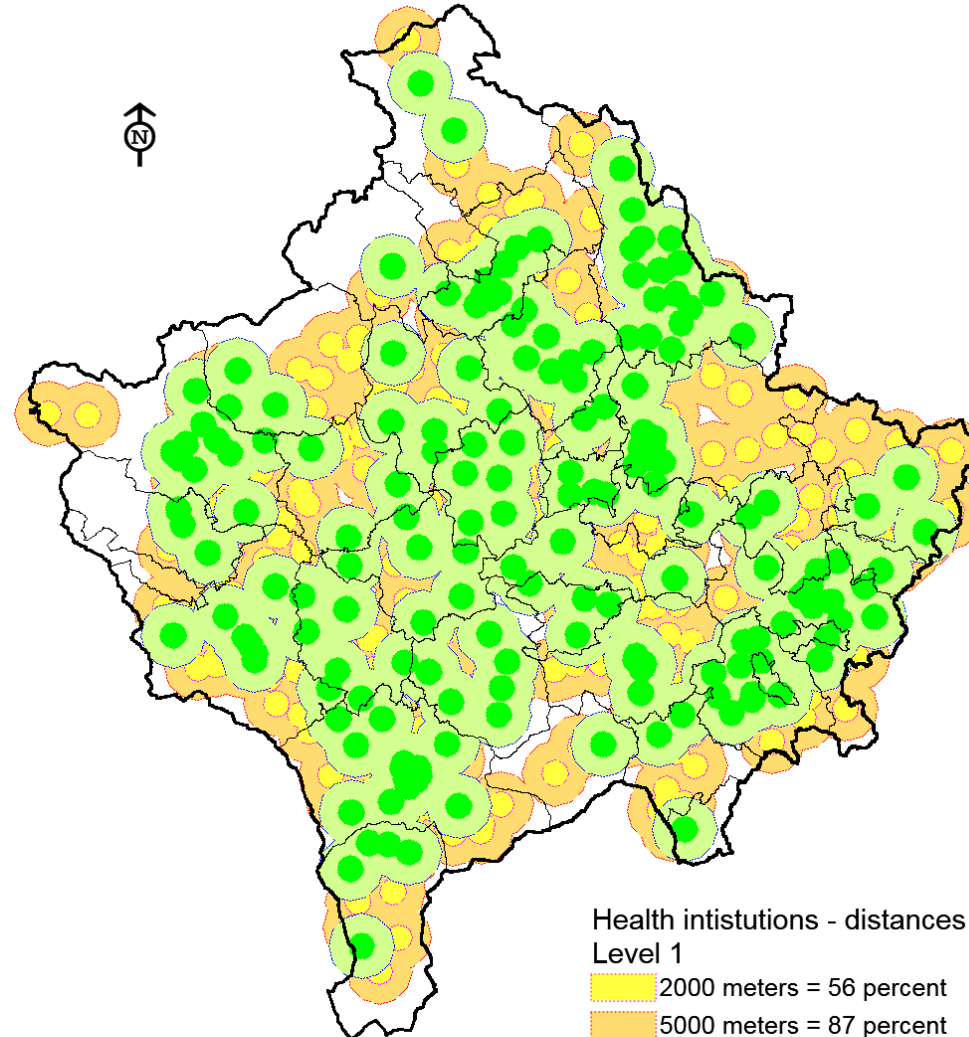
Spatial Analysis techniques – Buffering:

Access to main roads

First and second level

Distances and % of population

2 km = 74.4 % of population

5 km = 92.5 % of Population

6. Commuting data analyses , Case study – Prishtina city, Kosovo

The information presented commuting flows between other settlements to Prishtina,
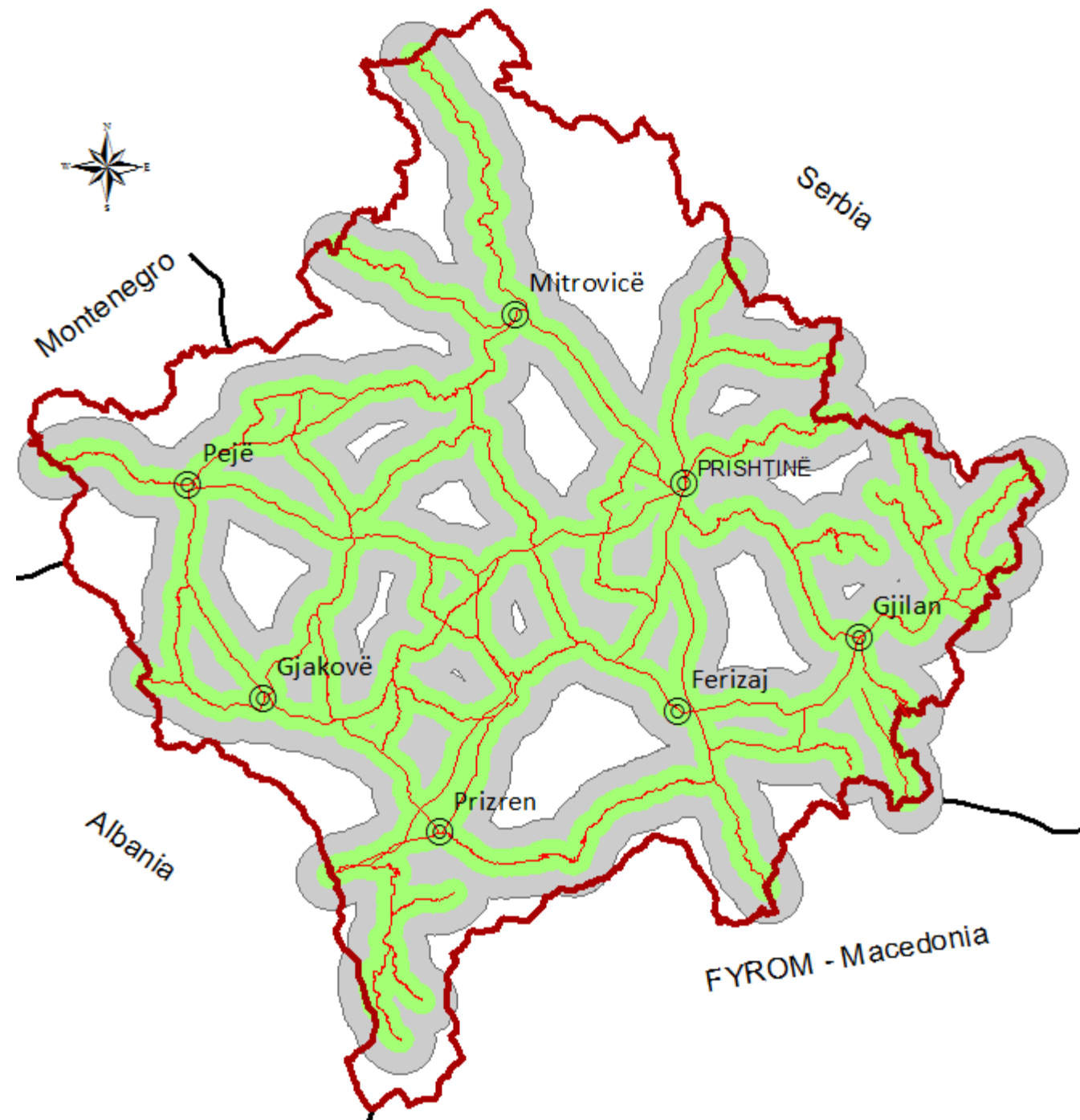
Methods and results

In this analysis, data about commuting are organized at settlements level.

The work for this analysis was divided in three phase:

- GIS activity (create measurement from which settlements to Prishtina)
- Prepare and analysis tabular data (taken from census database)
- Matching data (vector data and attribute data) and calculation distances

The data source for this analysis is the Census 2011
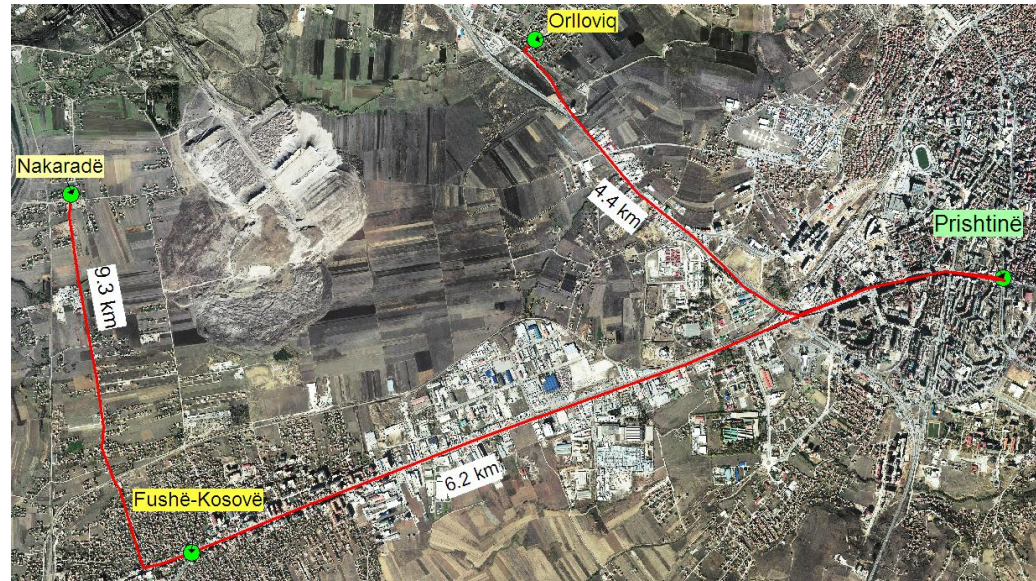
Commuting data analyses , Case study – Prishtina city, Kosovo
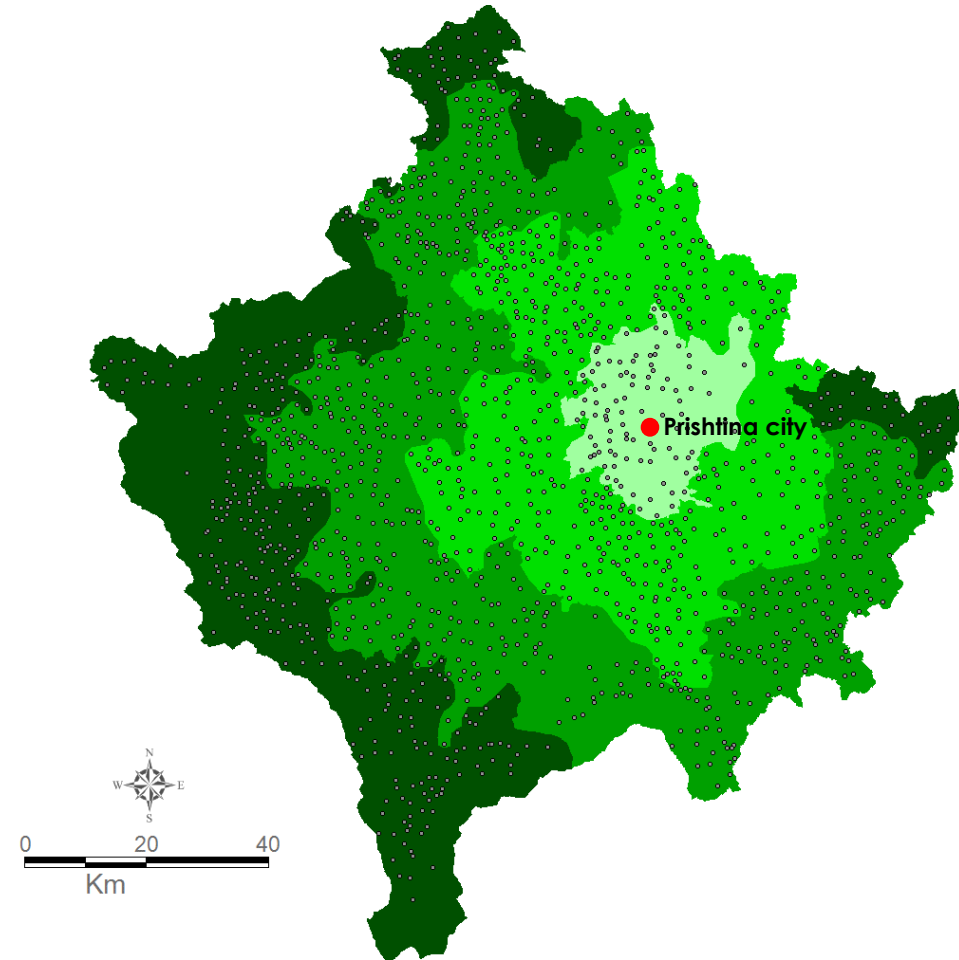
People who do not live in Prishtina city, but they work or study in Prishtina city

Source: Kosovo Agency of Statistics

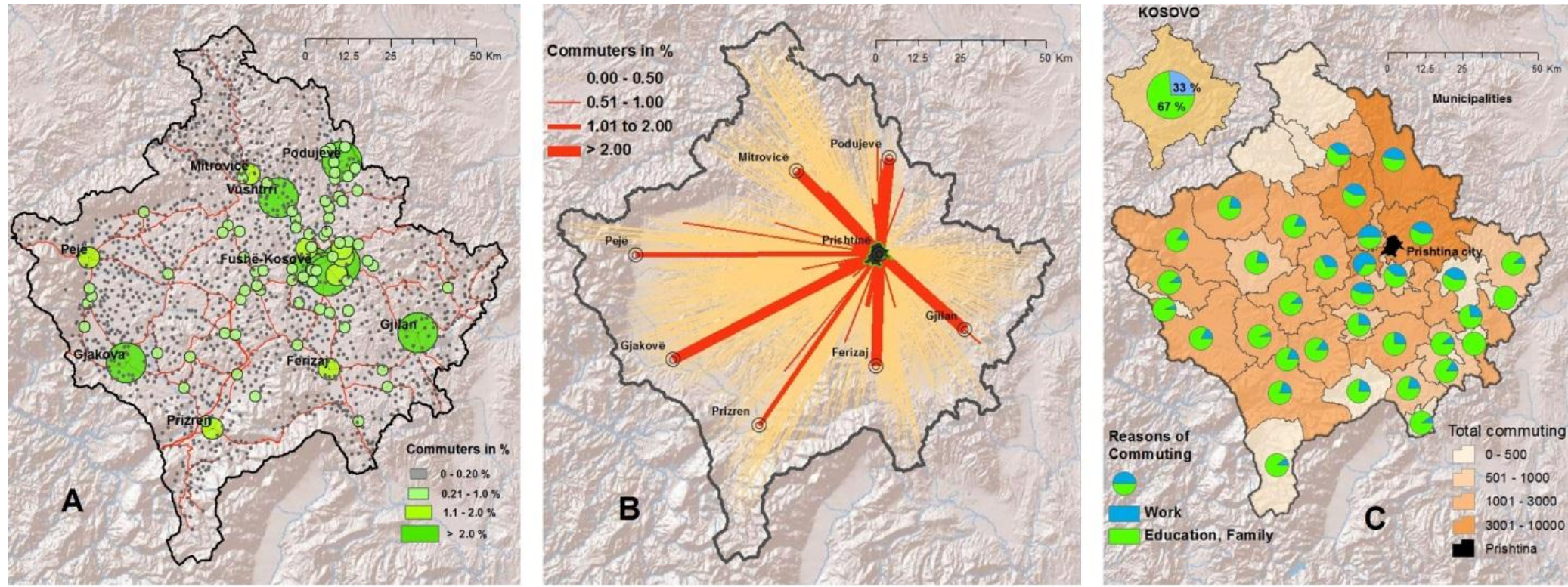| Distances by zone and roads	Number of Settlements	Distance covered and persons commuting
< 20 km	(95)	26.9 %
20 - 50 km	(429)	40.6 %
51 - 80 km	(579)	20.0 %
More than 80 km	(363)	12.5 %
• Settlements		

Commuting data analyses , Case study – Prishtina city, Kosovo

A- Spatial distribution of commuters from other settlements to Prishtina city by road distances in %.

B- Spatial distribution of commuters from other settlements to Prishtina by direction

C- Spatial distribution about commuters from other settlements (Data are aggregated in municipalities level)
   to Prishtina settlement by work, education and family reasons in %.

- Average distance is 34 kilometres per person, for persons who are work commuters from other settlement to Prishtina.
- The average distance for all commuters (work, education and family reason) from other settlements
  to Prishtina is 40 km (distances are calculated by roads).

Commuting data analyses , Case study – Prishtina city, Kosovo

Commuters to Prishtina settlement, by municipality (in percentage)
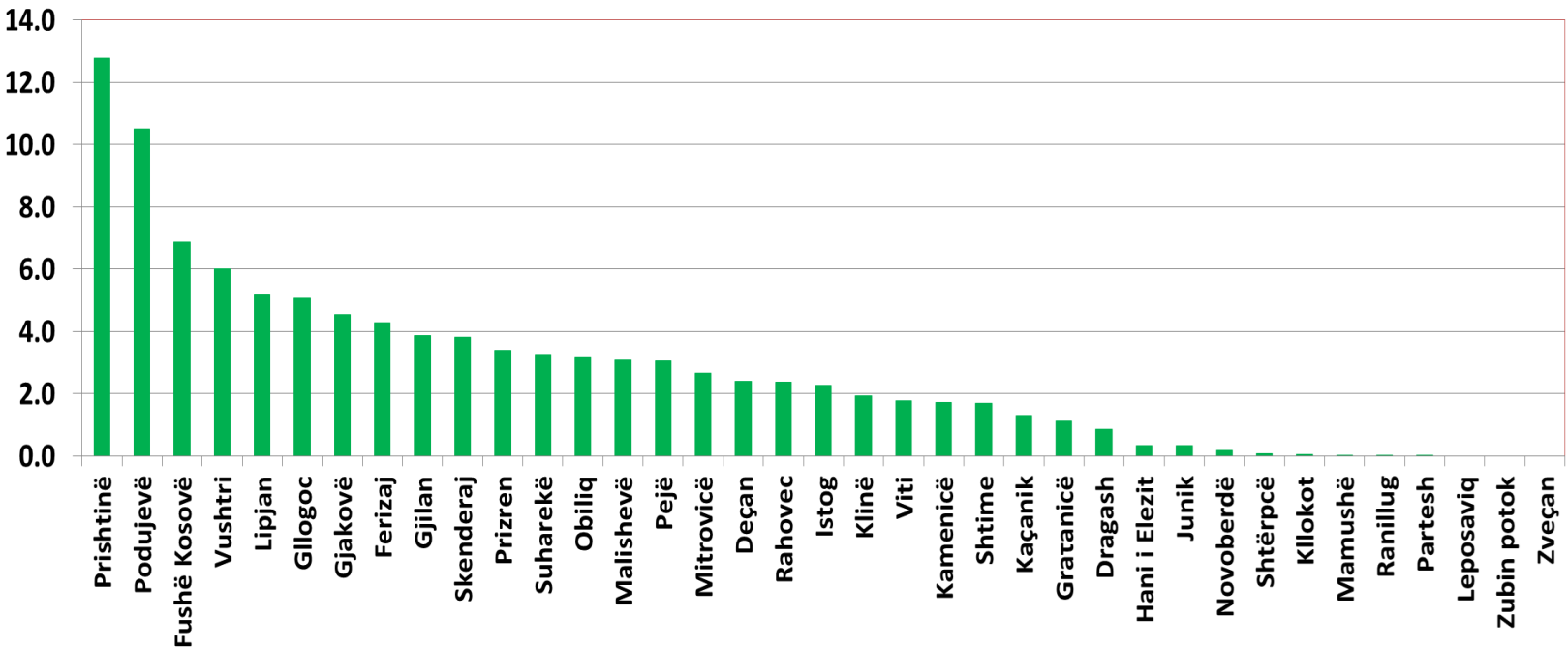
The commuters arrive in Prishtina city mostly from neighbouring settlements – more than 30% of total number of commuters – Podujevë, Fushë Kosovo and the rest of the Prishtina municipality.

Prishtina is the most attractive city, its population having increased by 34% when taking into consideration commuters (more than 56 thousand).

Commuters who are coming in Prishtina mostly are from rural areas - about 62 % - and 38 % are from urban areas.

7. Conclusions

- Commuting data can be used from transport planners, researcher of this field that is challenging to the city of Prishtina.

- Drawing on this experience, commuting should be incorporated as one of the subjects to be surveyed during the National Census of Population and Housing 2021.

- In the next Census (2021) we have to include more questions about commuting:

- Mode of travel (Walking, Bike, Train, Taxi, Bus, Car),
- Trip of Purpose (Home or Family, Work, School, shopping, social/recreation),
- How often you travel between your home and your place of work/study (Daily, weekly, and less often than once a week).

Thank you
for your attention !