



## INDICATOR 10: Altitudinal Conditionality of the Population Density' Changes

a) File Name: Alt\_Pop\_Dens\_Settl.shp

■ Coordinate Reference Systems: WGS 84 / UTM zone 34N (EPSG:32634)

b) File Name: Alt\_Pop\_Dens\_Mun.shp

Coordinate Reference Systems: WGS 84 / UTM zone 34N (EPSG:32634)

| Attribute | Alias   | Pseudonim  |
|-----------|---|--|
| MatBrO    | Municipality identification number                      | Matični broj opštine                               |
| MatBrNas  | Settlement identification number                        | Matični broj naselja                               |
| ImeNasCir | Name of the settlement in Cyrillic                      | Ime naselja (ćirilica)                             |
| ImeNasLat | Name of the settlement in Latin                         | Ime naselja (latinica)                             |
| ImeOpsCir | Name of the municipality in Cyrillic                    | Ime opštine (ćirilica)                             |
| ImeOpsLat | Name of the municipality in Latin                       | Ime opštine (latinica)                             |
| AREA_1    | Area of altitudinal zone up to 200 m a.s.l. (km²)       | Površina visinske zone do 200 m a.s.l. (km²)       |
| AREA_2    | Area of altitudinal zone 200–500 m a.s.l. (km²)         | Površina visinske zone 200–500 m a.s.l (km²)       |
| AREA_3    | Area of altitudinal zone 500–800 m a.s.l. (km²)         | Površina visinske zone 500–800 m a.s.l (km²)       |
| AREA_4    | Area of altitudinal zone 800–1000 m a.s.l. (km²)        | Površina visinske zone 800–1000 m a.s.l (km²)      |
| AREA_5    | Area of altitudinal zone 1000–1500 m a.s.l. (km²)       | Površina visinske zone 1000–1500 m a.s.l (km²)     |
| AREA_6    | Area of altitudinal zone over 1500 m a.s.l. (km²)       | Površina visinske zone preko 1500 m a.s.l (km²)    |
| POP_1     | Population count in altitudinal zone up to 200 m a.s.l. | Broj stanovnika u visinskoj zoni do 200 m a.s.l.   |
| POP_2     | Population count in altitudinal zone 200–500 m a.s.l.   | Broj stanovnika u visinskoj zoni 200–500 m a.s.l   |
| POP_3     | Population count in altitudinal zone 500–800 m a.s.l    | Broj stanovnika u visinskoj zoni 500–800 m a.s.l   |
| POP_4     | Population count in altitudinal zone 800–1000 m a.s.l   | Broj stanovnika u visinskoj zoni 800–1000 m a.s.l  |
| POP_5     | Population count in altitudinal zone 1000–1500 m a.s.l  | Broj stanovnika u visinskoj zoni 1000–1500 m a.s.l |





| Attribute | Alias  | Pseudonim  |
|-----------|--|--|
| POP_6     | Population count in altitudinal over 1500 m a.s.l.                   | Broj stanovnika u visinskoj zoni preko 1500 m a.s.l                  |
| DENS_1    | Population density in altitudinal zone up to 200 m a.s.l. (inh./km²) | Gustina naseljenosti u visinskoj zoni do 200 m a.s.l. (st/km²)       |
| DENS_2    | Population density in altitudinal zone 200–500 m a.s.l. (inh./km²)   | Gustina naseljenosti u visinskoj zoni 200–<br>500 m a.s.l (st/km²)   |
| DENS_3    | Population density in altitudinal zone 500–800 m a.s.l (inh./km²)    | Gustina naseljenosti u visinskoj zoni 500–800 m a.s.l (st/km²)       |
| DENS_4    | Population density in altitudinal zone 800–1000 m a.s.l (inh./km²)   | Gustina naseljenosti u visinskoj zoni 800–<br>1000 m a.s.l (st/km²)  |
| DENS_5    | Population density in altitudinal zone 1000–1500 m a.s.l (inh./km²)  | Gustina naseljenosti u visinskoj zoni 1000–<br>1500 m a.s.l (st/km²) |
| DENS_6    | Population count in altitudinal over 1500 m a.s.l. (inh./km²)        | Gustina naseljenosti u visinskoj zoni preko<br>1500 m a.s.l (st/km²) |

Note. -9999 = No permanent inhabitants; -99999 = No Data

**Description of Indicator:** Altitudinal Conditionality of the Population Density' Changes indicator shows the population density (inh./km²) by hypsometric zones (< 200 m a.s.l., 200–500 m a.s.l., 500–800 m a.s.l., 800–1000 m a.s.l., 1000–1500 m a.s.l., > 1500 m a.s.l.) within settlement/municipality. Altitude is usually treated as one of the limiting factors of the population's spatial distribution. With the change of altitude, the morphological types of settlements also change, and as a result, the concentration of the population in an area varies. For the indicator calculation, the area under a certain hypsometric zone and population count for the same zone were calculated. The density (inh./km²) is calculated by dividing the population count by the area of the hypsometric zone for settlement/municipality.

## Source data for indicator calculation

| Type of data           | Source  |
|------------------------|---|
| Elevation data         | European Digital Elevation Model (EU-DEM) version 1.1 [European Environment Agency, 2016]                                     |
| Population count*      | GHS-POP R2019A dataset—GHS population grid multitemporal [European Commission, Joint Research Center, 2019], dataset for 2015 |
| Administrative units** | GeoSrbija [Open data of the National Data Infrastructure, Republic Geodetic Authority, n.d.]                                  |

<sup>\*</sup> Population data for municipalites Preševo and Bujanovac are not included in datasets. Accordingly, the indicator values within these aministrative units are missing.



## REMOTE DETECTION OF (DE)POPULATION PROCESSES—PRODUCT DOCUMENTATION INDICATOR 10: Altitudinal Conditionality of the Population Density' Changes



\*\* GeoSrbija (Open Data of the National Data Infrastructure, Republic Geodetic Authority, n.d.) from which the administrative settlements boundaries were taken have no data for the province Kosovo and Metohija. Accordingly, these administrative units were not included in the analysis.