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LAND COVER CHANGE DETECTION IN TIMIS COUNTY BASED ON CORINE LAND COVER DATABASES FROM 1990 - 2018

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Abstract: The purpose of this paper was to perform an analysis in order to detect the change in land cover in Timis County. Timis is the largest county in Romania in terms of land area, occupying 8.696,7 km², respectively 3.65% of the country's surface. It is intersected by the parallel of 46 Lat. N, by the meridian of 21 Long. E and 22 Long. E. For this to be done, the existing database at European level was used, following IMAGE and CORINE Land Cover (CLC) 2000 project managed jointly by the European Environment Agency in Ispra, Italy and downloaded from the portal www.landcopernicus.eu. The database Corine Land Cover includes 29 countries from Europe, covering an area of approximately 4.5 km², at a scale of 1:100.000. This research wants to analyse based on Geomatic Technologies, the land cover change detection in Timis County, based on the open-source data CLC.

• Introduction

The purpose of this research is to analyse based on Geomatic Technologies, the land cover change detection in Timis County, based on the open-source data that were downloaded from the next link (www.landcopernicus.eu). The assessment of change regarding the use of land in time is a relevant problem on the recent list of development and concerns in the international context, which has been included in the recent funding programs within the 2020 Agenda for the next coming years. The development planning of a region cannot be achieved without analyzing the changes that could appear and the use of land in the context of a healthy urban development.

• Material and method

Timis is a county of western Romania, in the centre of the historical region Banat, with the county seat at Timisoara. Geographically, it is the westernmost county in Romania. It borders the counties Arad, Caras – Severin and Hunedoara, also with the districts South Banat, Central Banat and North Banat from Serbia, and the county Csongrad from Ungaria with which it forms state borders, figure 1.



Fig.1 Location of the Study Area

Timis is the largest county in Romania in terms of land area, occupying 8.696,7 km², respectively 3.65% of the country's surface. It is intersected by the parallel of 46 Lat. N, by the meridian of 21 Long. E and 22 Long. E.

Most of the county is occupied by zonal soils namely, leached and meadow chernozems appear in the northwest, then in the hilly area different types of wild soils follow one another from west to east, among which the brown ones predominate.

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• Results and discussions

From the database at European level were extracted the information from the level at Timis County.

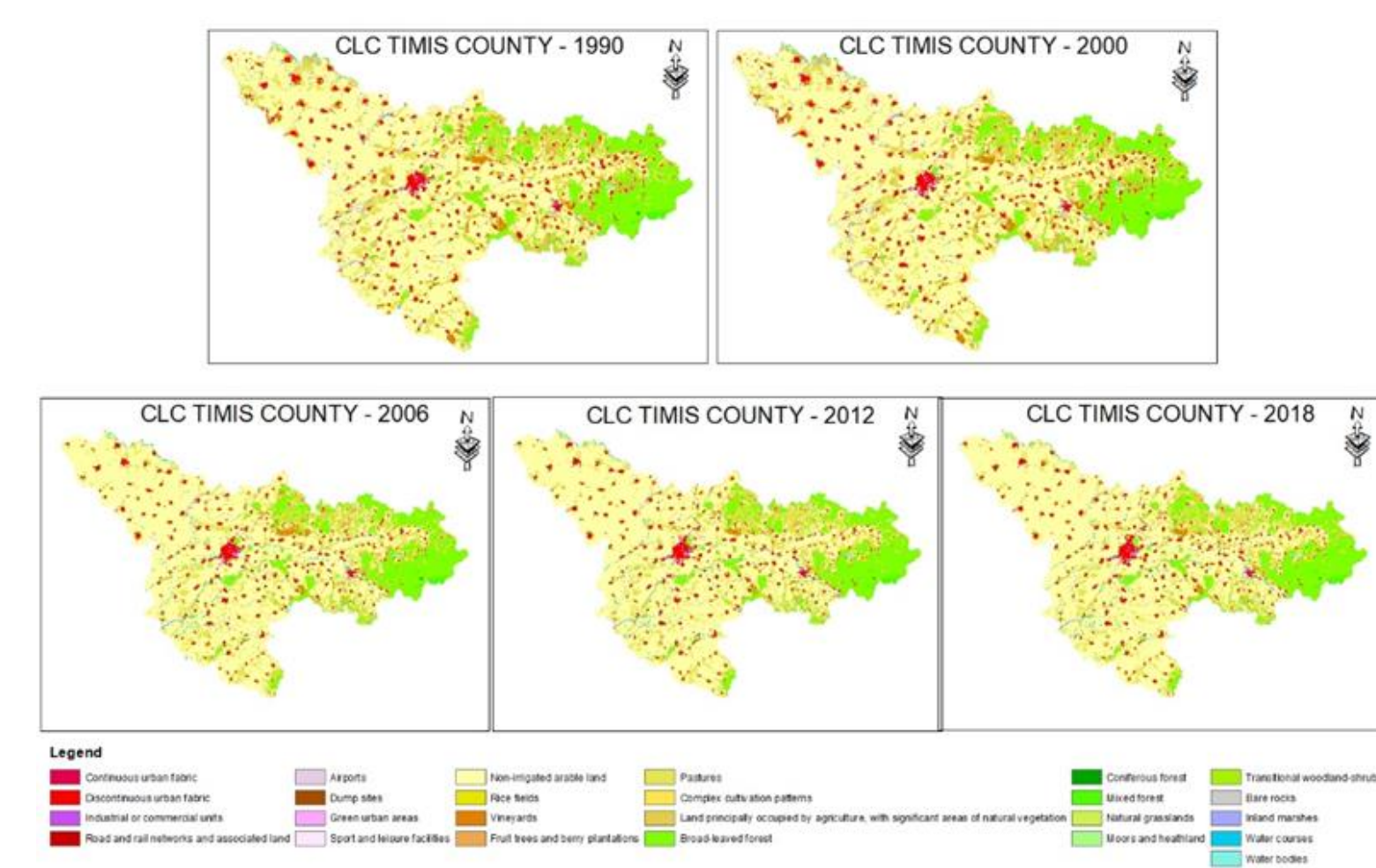


Fig.2 Graphical representation of information Corine Land Cover, Timis County, Romania

Raster data CLC were reclassified according to the existing code in the database, and then all existing polygons were converted into vector data. The Corine Land Cover data legend contains both the code for each land class and the RGB values to standardize this data throughout the European Union.

Morphological parameters of the Timis county area have the spatial representation presented in figure 3.

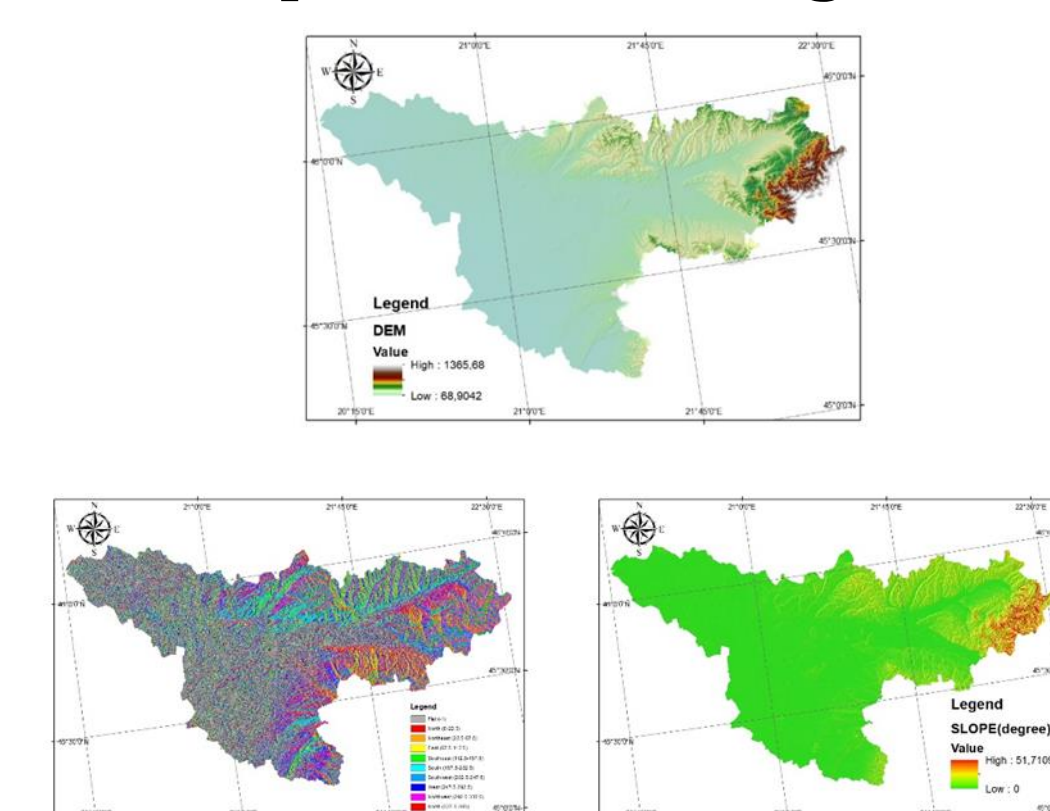


Fig.3 DEM, Slope and Aspect maps for Timis County

• Conclusions

Timis County, according to Land Cover, it is a county that has mainly agricultural lands in its component. It shows that most of the land in Timis County (51.4% and 32.9%) has an elevation between 0-100m, respectively 100-200, and most of the land cover characteristic of this range is made up of Agricultural areas 46.1%, respectively 32.9%. In the year 2018, the percentage of the agricultural area in Timis County is 78.17%, which represents 45557.69 ha.