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FORECAST THE SOIL EROSION THROUGH THE CARTOGRAMS

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Abstract
Soil erosion in Arges County affects a high percentage of agricultural land. Most agricultural lands are located on slopes undergoing erosion, excess humidity temporarily or permanently, landslides.
The importance lies in the need to know theme addressed erosion, the erosive potential of the land, the causes and factors that led to the onset of erosion and its deployment at a accelerated rate and now, because the based on this knowledge to determine the effective measures to prevent and combat this phenomenon of soil degradation.
The importance of knowing this erosion is related both to protect land and diminishing rates of clogging existing accumulation lakes in the river basin. Erosion mapping was carried out in recent years with the use of means modern cadastral- topographical. So not provided with sufficient precision to determine the areas affected by erosion. This paper presents methods using modern maps using satellite images, topographical precision instrumentation, cartograms results can be easily integrated into a GIS system monitoring.
The information is graphically and containing a database solid.
Cartograms accuracy depends on the quality of engineerings survey carried out in the field.

Keywords: erosion, mapping, topographic equipment, cartogram.

1. INTRODUCTION

This paper deals with the problem of research and mapping of soil erosion on agricultural land in the county of Arges, Arges basin, an area with large areas of land located on the slopes with erosive potential.

To appreciate the erosion hazard, it is necessary to determine both the surfaces affected by erosion and erosion risk potential (Mo□oc and Vătau, 1992). Have been made in recent years erosion control works, especially hydro, but continued erosion processes on slopes, erosion surface erosion becomes deep.

In this paper, we have studied the erosion by using a modern technique engineerings survey the ground running with modern equipment, with the orthophotos based representation. This approach has allowed us to directly compare the erosion cartograms cartograms made in previous years and made the new approach and to distinguish between the accuracy obtained. We conclude that it is more affordable as speed, precision, updating data, statistical analysis.

2. MATERIALS AND METHODS

The first step is to purchase topographic base (figure 1), plans and maps ground relief situation represented by level curves, orthophotos of the studied materials may be wary of ANCPI by the OCPI Arges.

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For measurements recorded using GPS equipment and elevation mark, plane coordinate values for each point on the contour units stationed erosion. Details can pick and intelligent use of Total Stations.

In terms of topographic equipment, GPS and Total Stations mention only because they are the most readily available in terms of cost. We will not speak of aerial photograms, drones or topographic scanners.

Each unit homogenous in terms of the factors that contribute to the onset of erosion, are numbered and on separate sheets or directly book field characteristics of those factors encoded shall be entered (Marian, 2013).

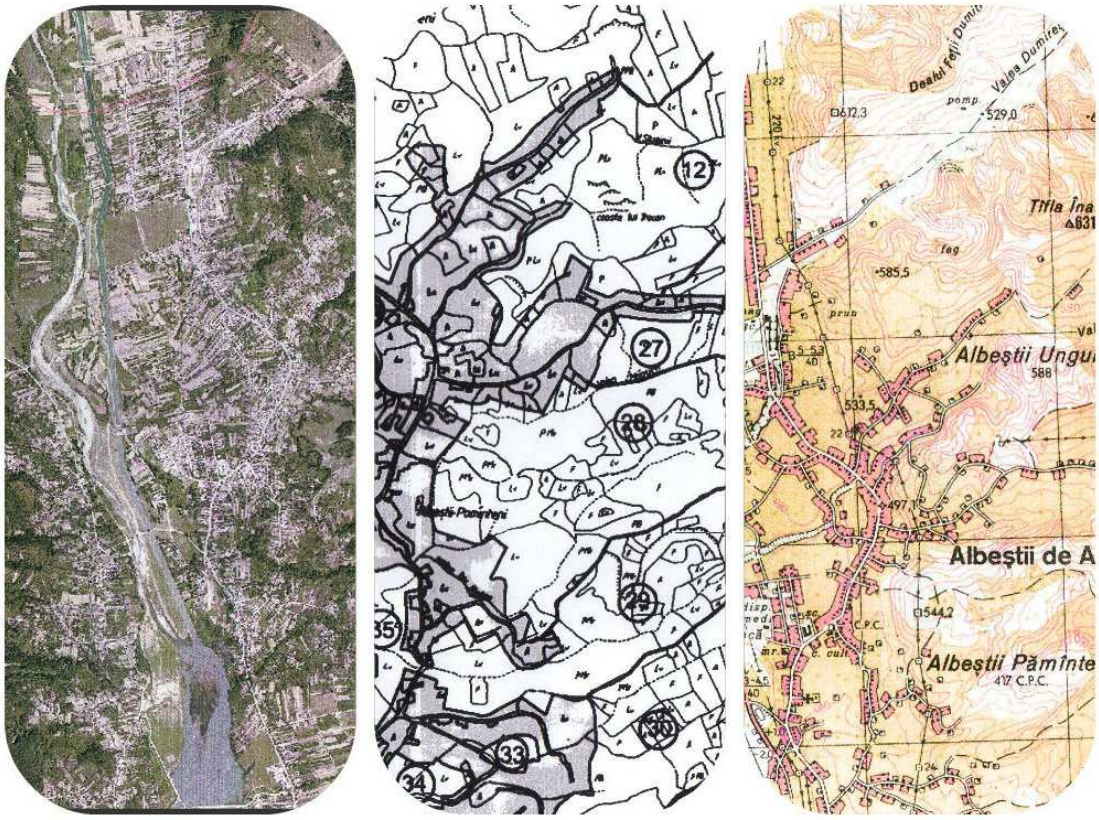

Figure 1. Orthophotomap, cadastral plan and isohypses map (Original)

Next reporting points which is automatically CAD software on orthophotomap directly Stereographic 1970 coordinate. The calculation of the length of the largest slope and the areas of the units in the program directly taking account of the fact that the obtained distances are reduced to the orizontal.

Separately, using the total station will be survey more details ground (figure 2) on erosion forms encountered (depth, width, length ravine). Geometry of the the riverbed may be able formations parameters needed in prognosis dynamics.

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Figure 2. Gully erosion of the Arges river (Original)

Shall be calculated the potential erosion using Universal Soil Loss Equation and draw up cartogrames.
It can draw up cartograms (figure 3) separate the soil units, land use, slope, etc.

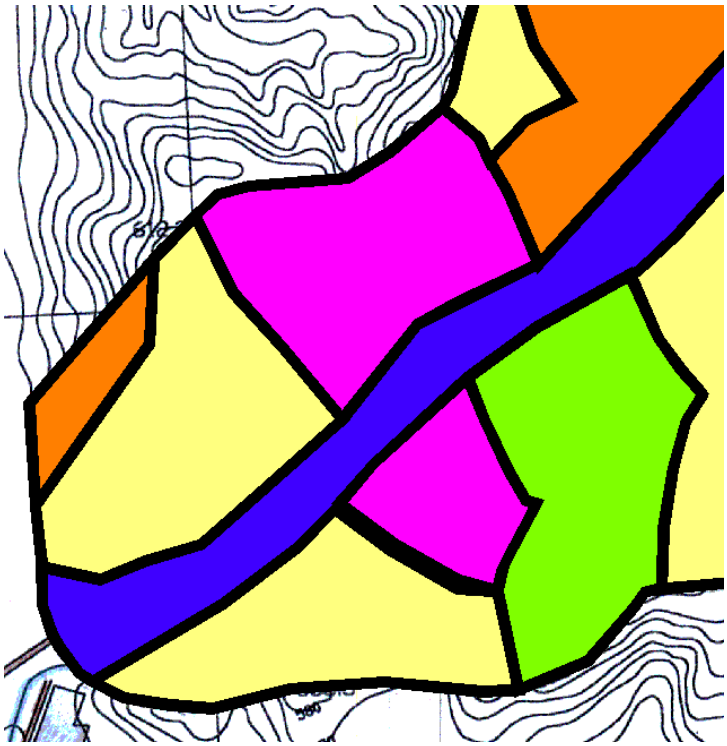

Figure 3. Extract of cartogram erosion (Original)

Details shall be grouped into categories, which are separated in the program, the layers that are clear in color, the specific content.
GIS (Geographic Information System) was designed specifically to store, analyze and process spatial information distributed through a computerized process. The information appears in two

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forms: one graphic (indicating spatial distribution of erosion and other factors involved in causing it) and another in the form of database (the previous example, the dimensions of gullies).
The GIS system allows the query to be analyzed easy to slip such as a possible area of torrential rain from the intensity of X and Y positioned torrential nucleus.

3. RESULTS AND DISCUSSIONS

Scientific and practical value of cartograms erosion depends on the quality of engineerings survey carried out in the field.
The value of erosion increases with slope, slope length and soil type, the largest land slope starring role. Therefore, the measurement accuracy is extremely important. Intensity of manifestation of erosion on slopes is influenced by the length and value of their inclination, and the existing land use. Generally increasing the length of the drain creates the accumulation of water in the soil, to increase the potential energy rate and thus an increase in the capacity of erosion. It can determine easily by automatically calculating the state of erosion of a slope, vulnerability to erosion of land, the potential loss of soil, loss of effective soil erosion condition of the slopes, the sub-basins (taking into account the number large tributaries Arges). It can also determine the factors and measures to prevent and control soil erosion and erosion effect and the behavior of existing works.

4. CONCLUSIONS

It can accurately determine the areas affected by erosion on agricultural and non-agricultural sub-basins and uses, indication of the degree of erosion, and classes on the erosion potential. Cartograms are prepared quickly, making it possible for users accessing from different areas of interest.
Facilitates easy preparation and updating their form digital cartograms.
Create the possibility of analyzing the data through the interaction of statistical analysis and preparation of cartograms.
Maps easy way to achieve manually.
It is obvious usefulness and necessity of applying modern techniques and technologies to evidence mapping and erosion.

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