

## ABSTRACT

The thesis entitled „ Study of the modalities of water and soil conservation on the slope agricultural lands in Iași County ", is structured into two parts, with a total of 8 chapters, comprising 200 pages, 24 tables, 74 figures, and 149 national and international bibliographic titles.

Part I, entitled „ The current state of knowledge on soil erosion" was theoretically realized on the basis of consulting representative bibliographic sources and sums up 48 pages, representing 22% of the thesis volume. The information on the erosion study was summarized in 2 chapters, here referring to: the current situation of degraded land worldwide, the evolution of degradation by slope processes, global estimates on soil losses on each continent, the measures taken by various researchers and institutions on combating and improving soil erosion, the situation of agricultural land degradation in Romania, the description of the natural environment, of the climate regime and vegetation in the studied area.

Part II includes Results of my own research", presented over the course of the 146-page, accounting for 73% of the total volume of the thesis, and consists of 6 chapters and 15 sub-chapters, which describe the aims, objectives, methods, and the methodology used for research and the studies on the characterization of the current situation, a parallel to the situation in the past, in the year of 1990.

The objectives of the research are heading towards the establishment of a situation at the county level as well as in detail, for each settlement in part, establishing the causes which have led to the expansion of the process erosion after 1990, operating behaviour of the already executed anti-erosion works and identification of new constructions and identification of ways of land conservation and productive capacity.

In chapter 4 entitled, the Evolution of the fund's agricultural land in a slope, in the county of Iasi", is treated in detail the use of agricultural land and evolution of land development in each of the categories of a use, sloping agricultural land use trends, distribution of land quality classes, and the classification of agricultural land by type of soil.

In Chapter 5 entitled "Vulnerability to various types of physical degradation of agricultural land in the slope of Iasi County" were treated the degradation processes of agricultural land and limiting factors, namely surface erosion, in depth, excess moisture, landslides and anthropogenic influence, the areas and degraded areas have been identified, and the results have been achieved following these analyses:

- 11.17% of the agricultural land fund includes soils in an advanced state of degradation;
- the main cause of degradation is surface erosion;
- water erosion affects about 169 thousand ha, that is 44% of the total agricultural pedological cartat;
- landslides affect 18% of the total agricultural pedologically mapped, namely about 69 thousand ha.
- salting affects soils on a stretch of 55 thousand ha (15.5%), of which 2 thousand ha are strong to excessively salty.

In Chapter 6, entitled „ Current aspects of antierosion works on agricultural lands in Iasi county " treats the evolution of anti-erosion works and lands development works designed antierosion, categories of works existing land improvements, preventing and combating soil erosion on arable lands, Meadows, orchards and vineyards. According to the analyses carried out in this direction, the following summaries were found:

- the area of land with CES works on arable was 64, 4 thousand ha in 1989 and 64 thousand in 2016;
- the work of arable land in the direction from hill to valley, i.e. irrational, increased 15 times;
- the area of land improvement with works to combat soil erosion on meadows remained unchanged (in 1989-16.57 thousand ha and in 2016-16.57 thousand ha);
  - undeveloped pastures without limitation suffered increases by 32.4% (28.4 thousand ha in 1990 and 37.6 thousand ha in 2014);
  - the area with improvements on vineyards and orchards were also reduced, namely: 5.2 thousand ha in 1989 and 5.1 thousand ha in 2016 for both categories of use.

In chapter 7, entitled „Proposals, and papers of the anti-erosion works of the agricultural land in the county of Iasi" personal proposals are clasified into 2 subsections, namely: for each locality , there are proposals for areas with strong and excessive degradation degree and the second section contains the analysis of the perimeter of the Podolenii de Sus, in the commune of Cozmesti, Iasi county.

The systems of anti-erosion measures and works on localities have been made phased for each type of degradation in part and summarised, the following fundamental measures are specified:

- for surface erosion are proposed crops on agroterraces for slopes ranging from 10-18%, crop rotation protection for the slopes of 18-25%, sowing with perennial grasses;

- to combat deep erosion, mechanical and biological works to quench erosion;
- for landslides are proposed works to capture coastal Springs, desecation of microdepressive areas and re-sowing with perennial grasses and in some areas afforestation;
- excess moisture requires draining and drainage work, drainage pipes, lowering the groundwater level;
- for salinity is recommended amendments with phosphogypsum, deep loosening and plants tolerated at salinity are recommended.

The perimeter taken into study and analyzed extends over an area of 50 hectares, located in the extravilan area of Cozmești commune. The agricultural land in the area consists of very poor productive degraded pasture of which more than half has now become non-agricultural, due to impassable roads, excessive erosion of the surface, and the depth formations and permanent excess moisture.

The measures presented and proposed for this area are of an ameliorative nature and include both hydrotechnical and agrotechnical works. The main purpose is to value the lands with excessive and unproductive degradation, but also to change the ecological aspect, currently desolate.