

## **BACKGROUND ON MAKING A GEOGRAPHIC INFORMATION SYSTEM DATABASE FOR THE HYDRO-AMELIORATIVE LAYOUT "THE BEREZENI ORGANIZATION FOR THE USE OF WATER FOR IRRIGATION"**

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**Abstract:** *The paper presents a conceptual model for achieving cartographical products, which are a necessary component in geographical information system designed for the hydro-ameliorative layout "The Berzeni Organization for the use of Water for Irrigation". The existing analogical graphic database accomplished for the work area, with all its mapping, topographical and specialized information stands as a support for the developing model.*

**Keywords:** *hydro-ameliorative layout, geographic information system, land cadastre.*

### **1. Introduction**

A hydro-ameliorative layout is an area of land served by one or more categories of land improvement works like works of irrigation, draining and drainage, paddy fields, soil erosion control, flood protection, systematization of water streams and forest management works. The optimal management of actions within a hydro-ameliorative layout is closely linked to achieving a specific information system in this field of activity which involves acquiring of graphic information and specific content used to create the informational system's graphic and alphanumeric databases. The specific graphic information must rely on land cadastre data within the administrative territorial unit, the component areas (urban/ outside city limits), cadastral sector, property and parcels. Being given this graphical cadastre support, specialists can describe and determine the boundaries and surfaces of land improvement works as well as land areas served by these works. Within these limits are established areas occupied by irrigation works, draining and drainage works, paddy fields works, soil erosion control works, flood protection and systematization of water streams works and also areas served by the works mentioned. Graphic data sources are represented by topographical maps (scale 1:25000), main topographical plans (scale 1: 5000), orthophotos (scale 1: 5000), the overall cadastral plans (scale 1: 10000), topographic surveys up to date using total station and GPS satellite technology and also older specific plan of the hydro-ameliorative layout.

This kind of informational system, in order to be effective, it must be designed, primarily to ensure obtaining graphic and tabular reports specific to this kind of cadastre in accordance with current standards.

## 2. The concept of achieving the graphical database for the hydro-ameliorative layout "The Berezeni Organization for the Use of Water for Irrigation"

The area of the hydro-ameliorative layout "The Berezeni Organization for the Use of Water for Irrigation" was taken in study in order to validate the concept of achieving graphical products of the informational system. This hydro-ameliorative layout is located in the administrative territorial unit Berezeni, in the east side of county Vaslui (Fig. 1). The study area is located outside city limits of the administrative territorial unit Berezeni in the southeastern side, occupying a surface of 2055.35 hectares (Fig. 2). Overlapping the area of the hydro-ameliorative layout over the overall cadastral plan emphasized that this area is located in 13 cadastral sectors (Fig. 3) and 59 parcels (Fig. 4). Digital graphical products accomplished during the study are presented by the overall cadastral plan (Fig. 3 and Fig. 4), the topographical plan (Fig. 7), the hydro-geological zoning plan (Fig. 5) and the pedo-ameliorative zoning plan (Fig. 6).

Data sources were the main topographical plans (scale 1: 5000), orthophotos (scale 1: 5000), the overall cadastral plans (scale 1: 10000), topographic surveys up to date using total station and GPS satellite technology and also older specific plan of the hydro-ameliorative layout.

Also inside this study there have been determined areas served by irrigation works, draining works and flood protection works displayed in a centralized manner in tabs presented in Fig. 8, as well as areas served by irrigation works, draining works and flood protection works displayed in a centralized manner in tabs presented in Fig. 9.

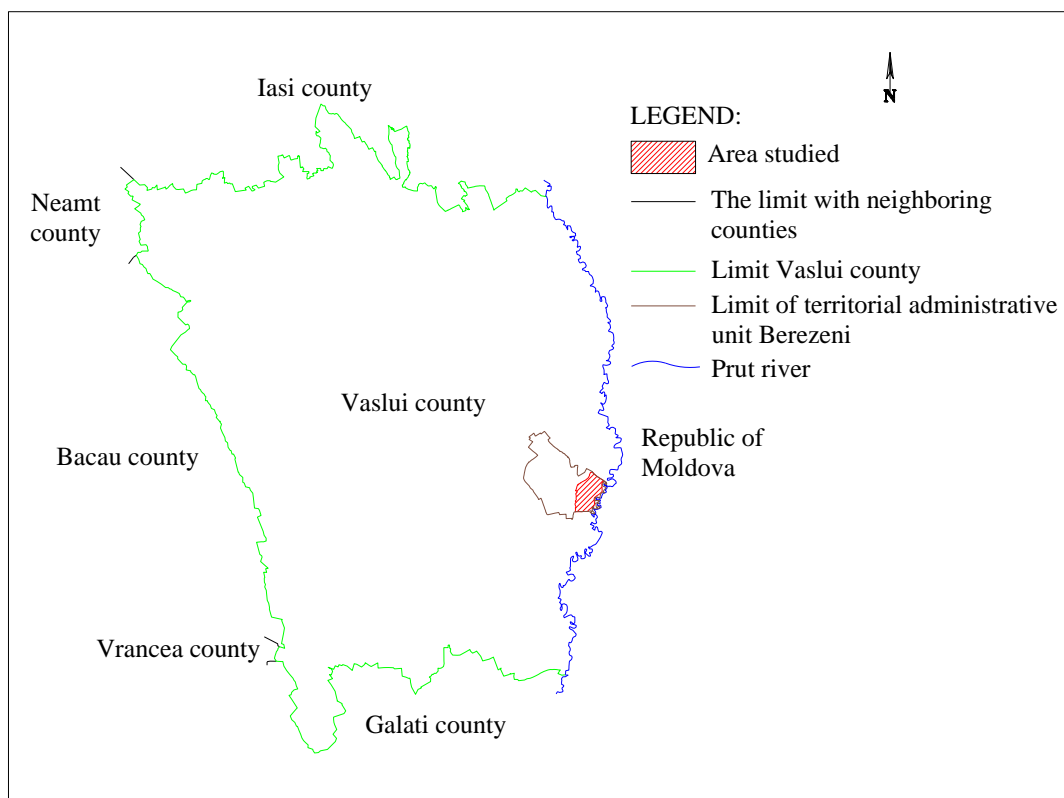


Fig.1. The map of county Vaslui with the location of the study area.

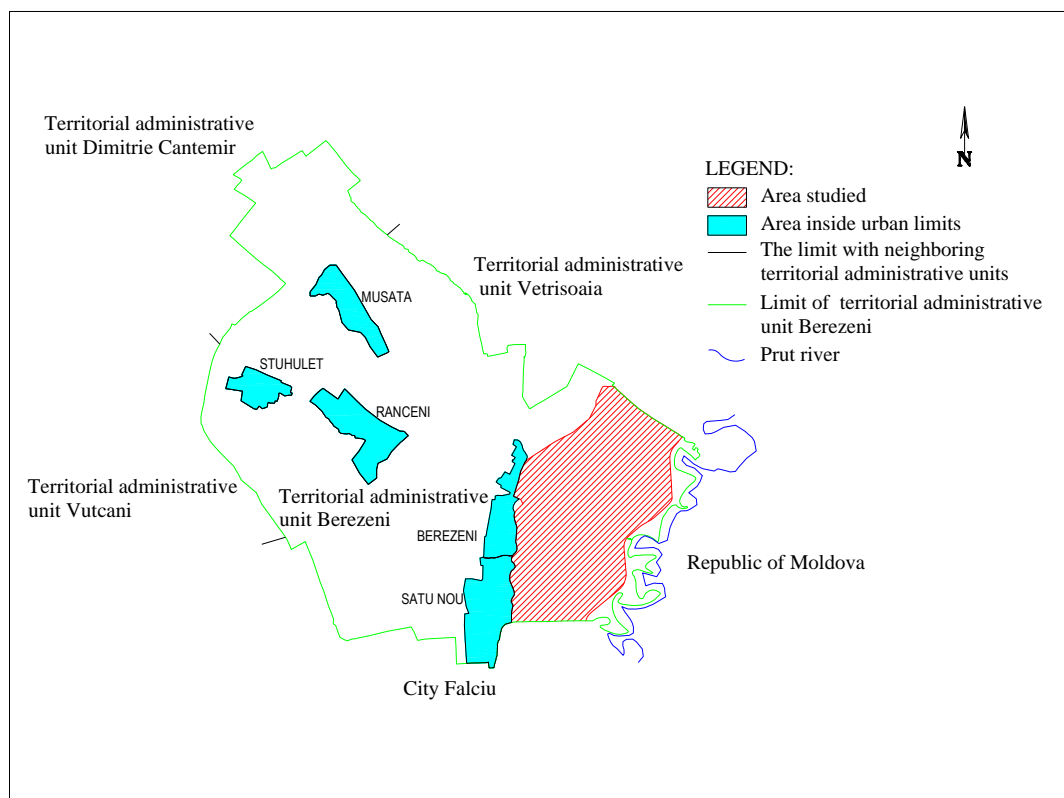


Fig.2. The framing of the study zone inside the administrative territorial unit Berezeni

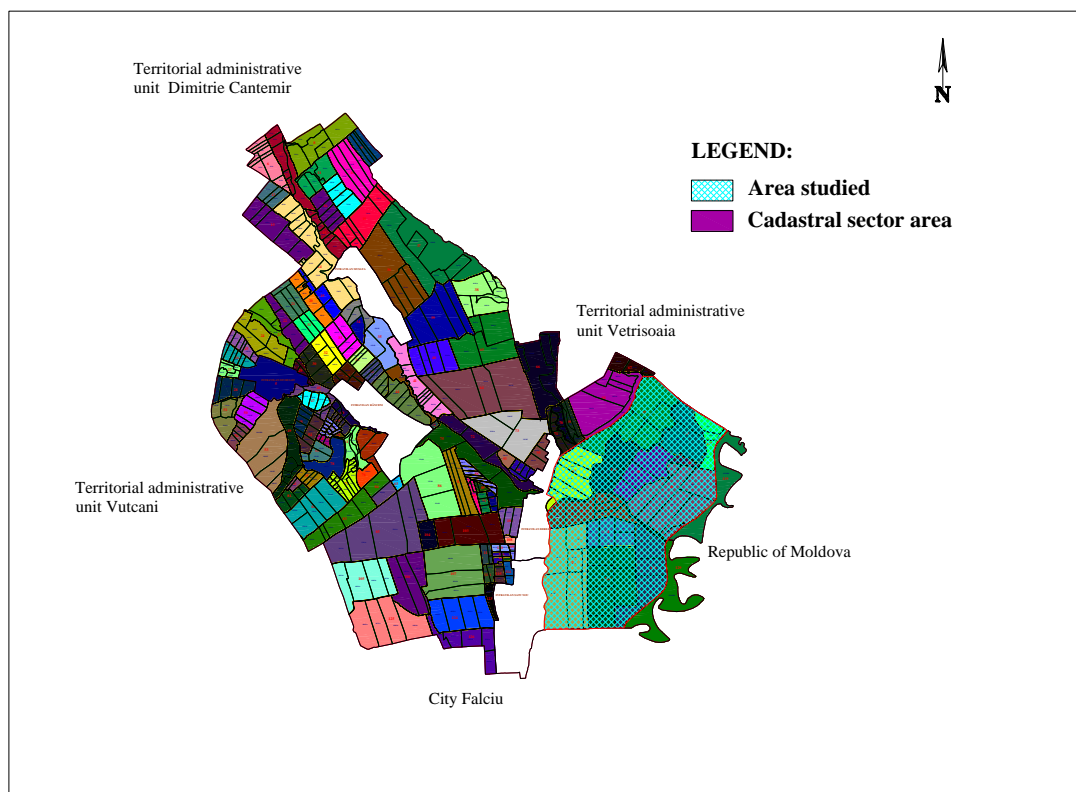


Fig.3. The overall cadastral plan with the framing of the study are by cadastral sectors

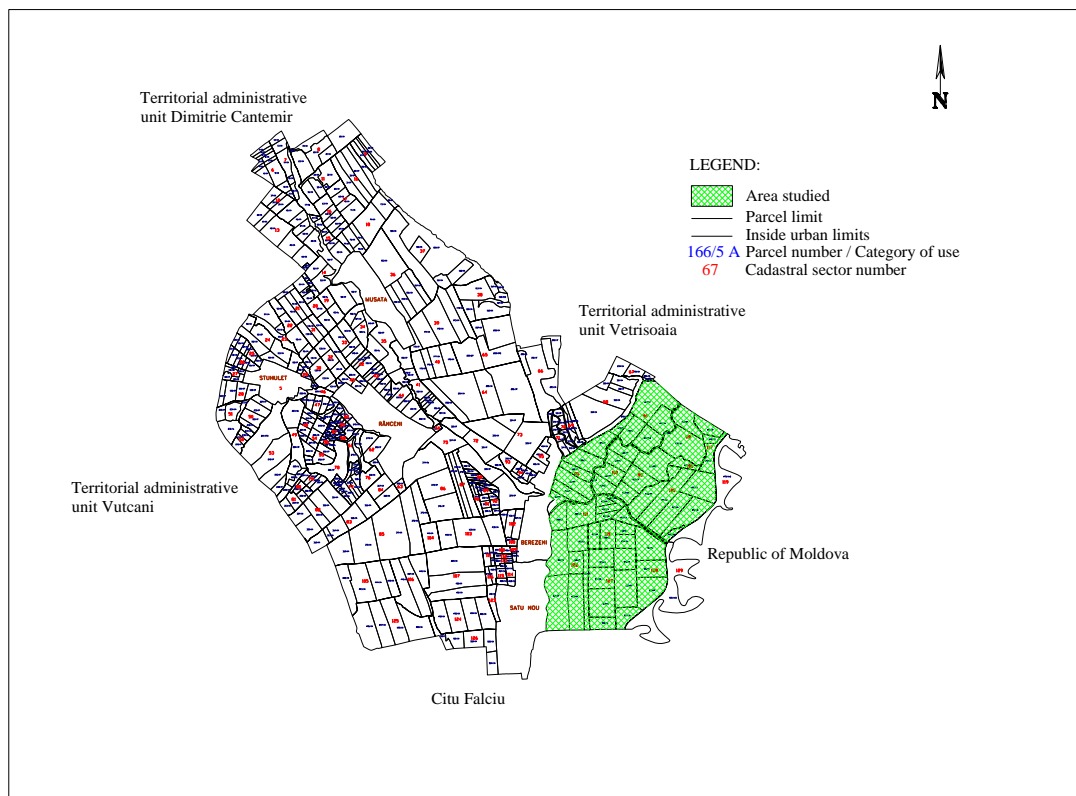


Fig.4. The overall cadastral plan with the framing of the study area by parcels

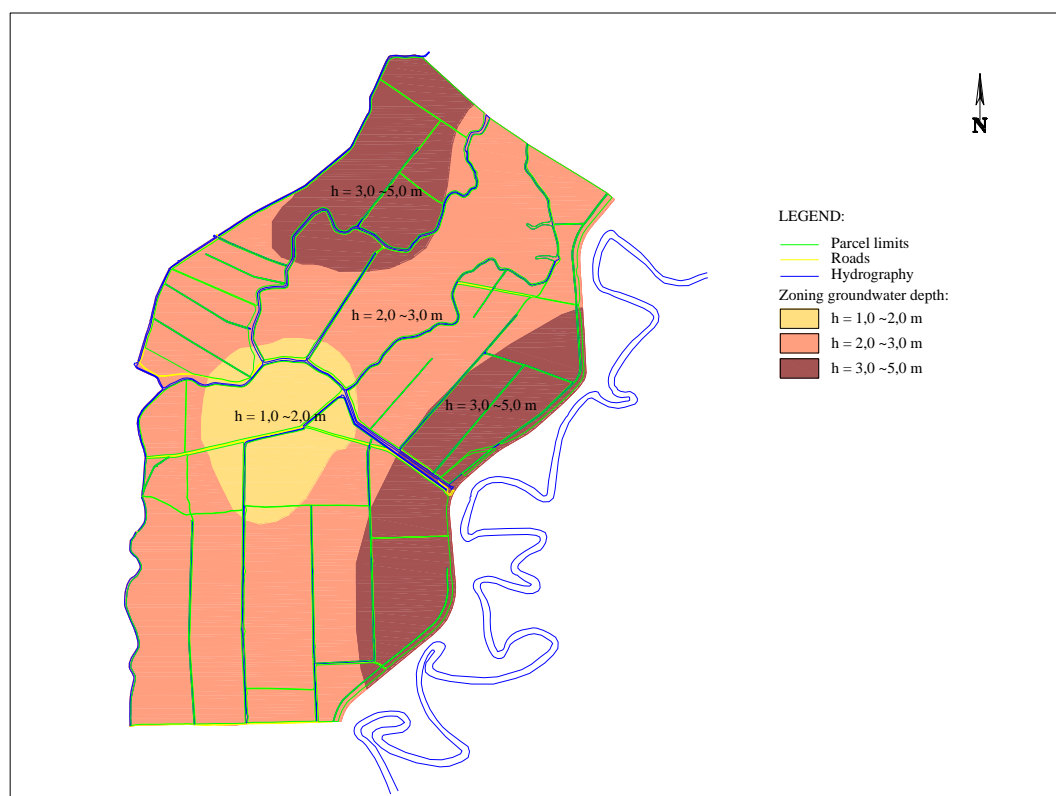


Fig.5. Thematic plan zoning groundwater depth

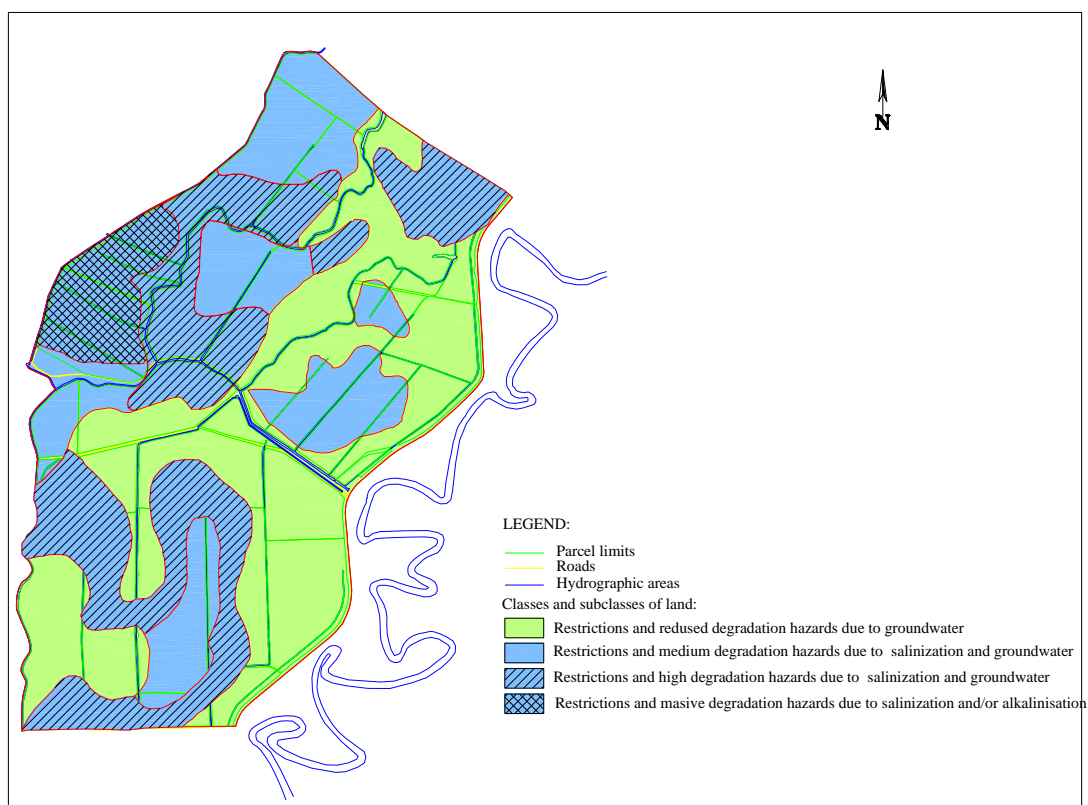


Fig.6. Thematic plan with the pedo - ameliorative zoning

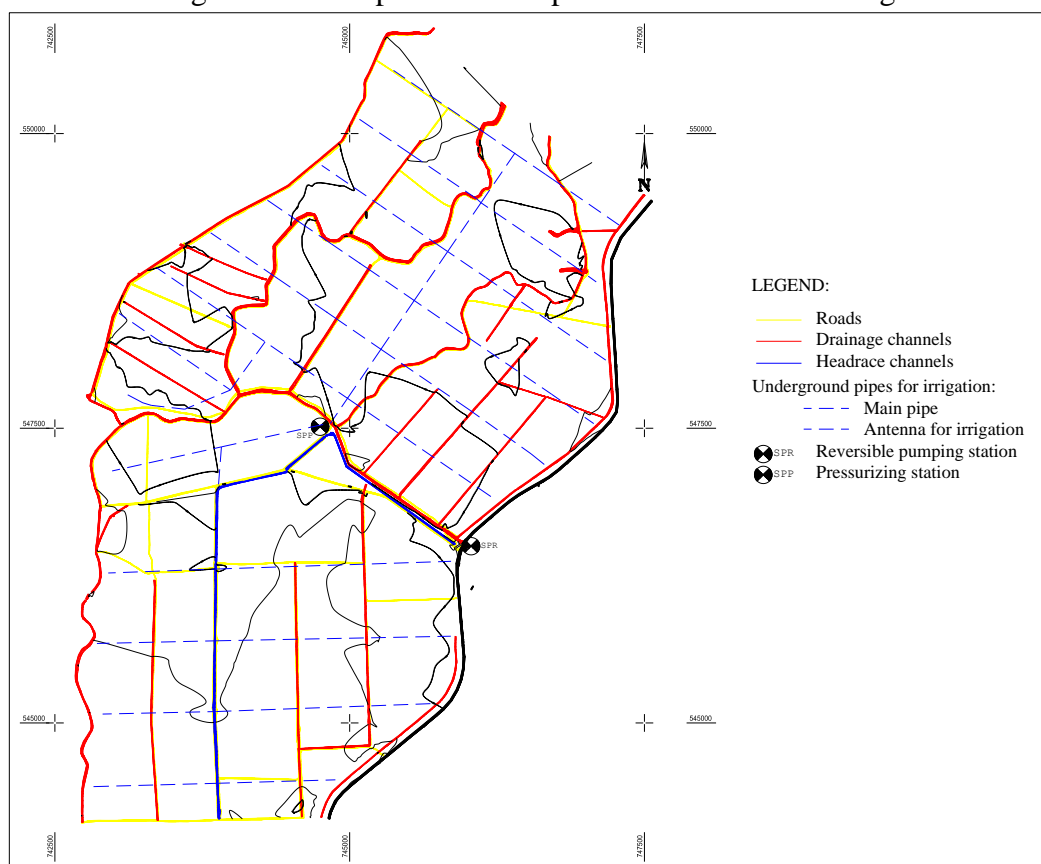


Fig.7. Topographical plan

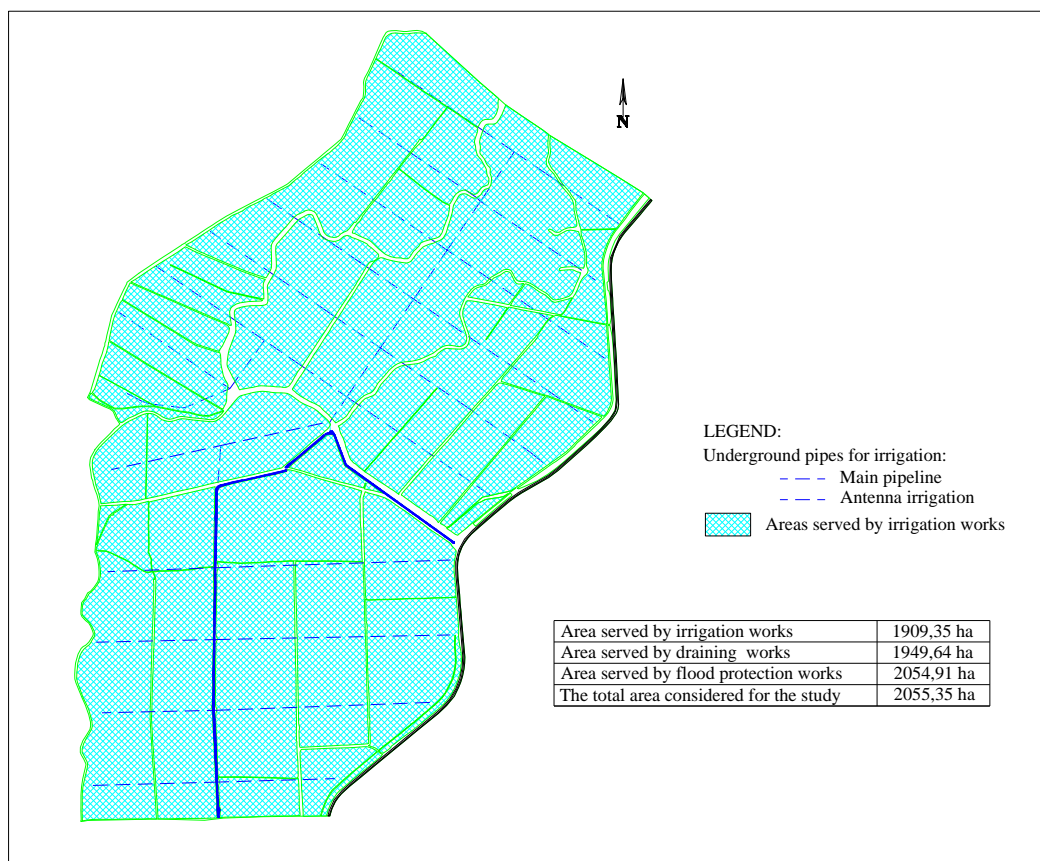


Fig.8. Thematic plan with the areas served by land improvement works

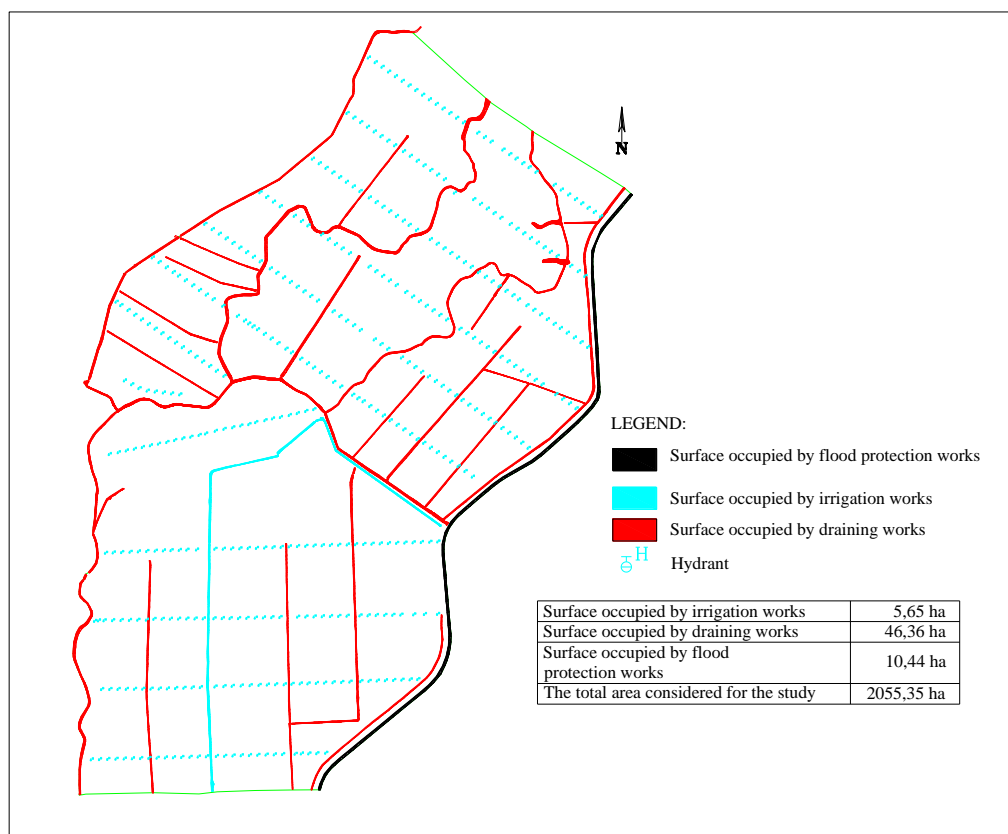


Fig. 9. Thematic plan with the areas occupied by land improvement works

### 3. Conclusions

The study made the following conclusions :

1. Achieving a specific informational system in the field of land improvement offers a very useful tool in improving works in this kind of important activity domain.
2. The informational system's graphic and alphanumeric databases must be designed and structured in such manner to meet all the requirements of the beneficiaries, administrators or owners of land improvement areas.

### 4. Bibliography

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