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PERSPECTIVES ON THE TERRITORIAL SYSTEM DEVELOPMENT OF VILLAGES IN THE REPUBLIC OF MOLDOVA

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Abstract

The present paper analyses the information database for the villages in the Republic of Moldova. It also describes the study results of the information use by the local public authorities. The analysis has included the activity of seven village halls in the Republic of Moldova. The paper proposes the development of an information system model aimed to correspond to the complex needs of the villages.

Key words*: GIS, THE LOCAL PUBLIC ADMINISTRATION (local public administration), cadaster, registers.*

INTRODUCTION

As local public administration did not understand and supported it, transition to market economy had a negative influence on the villages in the Republic of Moldova that face a series of economic, social and environmental problems. According to the local autonomy principles [1], the republic of Moldova is determined to increase the importance of the local public administration in independent decision making and long-term planning development. In this context, the whole responsibility of administration organization, leadership, management and control belongs to local public authorities that are also the owners of the public patrimony. Local public authorities can mobilize and manage the land, material, human, etc. resources more efficiently, establishing priorities, levels and measures for their achievement. In order to find solutions to the everyday problems faced by the local public administration, it is necessary to create some conditions regarding the information collection and administration, specialist training, equipment and software provision [2], [3].

The local public administration activity should be directed towards the citizens and, together with them, it should ensure sustainable development and spatial land use, thus providing the transition to information society. For this, it is necessary to integrate knowledge and experience in order to understand and manage the climate and social changes, ensuring welfare and prosperity for each town, city or village.

MATERIAL AND METHOD

The reform period can be limited by valorizing the potential of the information and technological transfer, and studying the experience of the collectivities that have completed these processes.

The elaboration of the information systems is a time and resource consuming process and planning must be based on a clearly defined vision [5]. Any modern urban community should know its natural economic resources and promote a strategic vision regarding its future development. The lack of such a vision leads to inefficient administrative activity as both financial and material resources are wasted. Literature [5] shows that each town, city or village in the economically developed countries has its own development and management plan for the urban and unincorporated lands for a time period that is longer than 20-25 years. Development measures are correlated with the requirements related to sustainable development and have an

innovative nature. GIS or LIS are the analysis tools based on which optimization can be made and new knowledge can be generated for the solutions to be adopted.

Although the GIS technologies are used for several decades, we have decided to analyze thestatus of geoinformation technology application in the Republic of Moldova, including its twons, citties and villages. the concept of information system has been elaborated for the whole country [2]. According to the normative act, GIS is aimed to offer operative spatial information to the users as information basis for decision-making, in order to increase efficiency in providing solutions for the rational use of the natural and technical solutions, economicc and regional administration, social and cultural development. It also identifies the responsible institutions. The elaboration of the above mentioned document relied on the principle according to which information society is based on information dissemination and equal participation of all society components (government, civil society, private sector, scientific communities, etc.). The concept elaborated in the Republic of Moldova stipulates that an information system should be created for the whole country, consisting in territorial subsystems concerning the administrative units; however, it does not specify which is the smallest territorial unit. In our opinion, the elaboration of an upstanding information system should be based on the territorial systems belonging either to the towns, cities and villages or to the hydrographic basins, vineyards, etc. The components of the information system should be designed according to the expected purpose, i.e. for the development of thr city, town or village, the corresponding database should comply with the territory of the administrative unit where the respective city, town or village is located. For the development of agriculture, it is very important to know the conditions of the vineyard since the basic unit is the territory that provides the best conditions for vine growing.

Literature demonstrated that information has become an important factor for development [5], which can ensure the modelling of various processes, thus facilitating their in-depth knowledge. For the local public administration, the information system has become a valuable tool that can influence decision-making. In this context a new notion is created in relation to virtual locality which means reunited advanced technologies, planning methodologies for its activity and management functions. Technologies include telecommunications, architecture design, etc. The highlighted benefits of elaborating this model consist in the possibility to model solutions to the complex social, economic and politicaal rural problems regarding the trends in sustainable development.

Virtual locality comprises all the fields and sectors of activity, from the local public administration to education, health, culture, tourism, economic and industrial activities, agriculture and even the personal life of its inhabitants. It includes the Territorial Information System with a wider scope which for the Republic of Moldova should be an essential objective that needs to be implemented.

By the data and information it gives to the local public administrations, the Territorial Information System not only provides the registry of the various resources and ownership types but also plays an important part in establishing a correct tax system, developing the housing market, environmental protection, urban planning, etc. Also, it is possible for the citizens to access the system.

Analyzing the current status of this issue, we should say that, unfortunately, there is no multifunctional GIS in the Republic of Moldova, although 10 years have passed since the concept was approved. There are numerous causes, among which the fact that the local public administration are not aware of the GIS functional possibilities. Several actions have been initiated, especially in the field, with a particular focus on the cadaster institution. Local public administration approves the final materials without being involved in developing them and turning the results into good account.

The urge to implement the information technologies in the Republic of Moldova requires the correct identification of the starting point and the clear identification of the final purpose. If the purpose can be achieved based on the worldwide experience, then the starting

point is determined by the local conditions and the development level of the towns, cities and villages, as well as the whole country.

Table 1 Simplified characteristic of studied villages

THE LOCAL PUBLIC ADMINISTRATION Name	Geographic location	Total area, ha	Agricultural land area, ha	Population number (inhabitaants)	Main economic activity	Number of economic agents with more than 10 employees
Caracui village hall	Latitude 46.6986ºN Longitude 28.5419 ºE	5297,44	2277,8	2581	Vine growing	10
Buţeni village hall	Latitude 46.8241 ºN Longitude 28.6749 ºE	4918,27	1541	3512	Land working	17
Horodişte village hall	Latitude 47.2086 ºN Longitude 28.2519 ºE	2602,34	951,5	2794	Vine growing	3
Hogineşti village hall	Latitude 47.3733 ºN Longitude 28.3208 ºE	2510,01	1072,8	1830	Crop production	3
Cărpineni village hall	Latitude 46.7597 ºN Longitude 28.3530 ºE	13613,75	7945,26	9954	Various	34
Corjeuţi village hall	Latitude 48.2227 ºN Longitude 27.0422 ºE	5250,86	3270,81	7570	Vegetable growing	39
Pogăneşti village hall	Latitude 46.6927 ºN Longitude 28.2330 ºE	2041,88	1267,56	1462	Hoed crop growing	14

The situation needs to be clarified and changed in order to speed up the GIS implementation in a certain locality. The present study focuses only on the territorial administrative unit, although it is clear that division is abstract. Therefore, we will examine the situation for the territorial unit and then will integrate it into a unique system with multi-purpose requirements. This system can be developed in parallel in different town or village halls throughout the years, according to a unique methodology. The central institutions will develop the methodology, coordinate the results and acquaint all users with the system.

In order to examine thr current situation referring to the GIS development, we carried out studies in seven village halls. Our choice was based on the most recent cartographic materials and the open wish to collaborate of the local specialists. In spring 2011, these village halls performed aerial levelling in order to identify and record the real estate by using the orthophotoplan. The cartographic materials had a 10 cm resolution and could be used as basic information support in GIS elaboration, being supplemented by the graphic representation of the identified and recorded real estate.

A multifunctional GIS for the rural area involves the need to be able to include the relief issues in the analysis. For this purpose, the digital model of the territory can be used, as it is generated after processing the data resulted from the laser scanning of the area, simultaneously performed with the aerial levelling. These materials were left unused. Based on the digital model, point positioning can be performed with a precision of 30 cm, which ensure the quality of the required solutions. Table 1 presents the general information on the villages under study.

Table 2 Results of investigations performed in Caracui village, Republic of Moldova

Type of studied material	Year of writing and update period	Format	Use
Topographic and cartographic materials			
1.1 Pedological plan	1996	Traditional, on paper.	Not in use
1.2 Land management plan	1996-1998	Traditional, on paper.	Rarely used
1.3 Graphic records of the area	1996	Traditional, on paper.	Not in use
1.4 Cadastral plans	1999-2002	Traditional, on paper.	Used for area and size verification
1.5 Topographic plan	1984	Traditional, on paper.	Not in use
Registers			
2.1 Household registers	1992-1993	Traditional, on paper.	Record update
2.2 House registers	2006	Traditional, on paper.	Rarely used
2.3 Population records	-	Traditional, on paper.	Rarely used
2.4 Cadastral records	2002	Traditional, on paper.	Rarely used
Urbans development plans – absent			
Software used			
Map Info	Microsoft Office Access	Autocad	Microsoft Office Excel

*part of the information was taken from source [4].

RESULTS AND DISCUSSION

During our studies, we wanted to establish the preparation level for the development and implementation of the territorial information systems in one village in particular and in all

the towns, cities and villages of the Republic of Moldova in general. We studied: the existence and use of the cartographic materials on which village halls and their updating. It is worth mentioning that most employees of the village halls in the Republic of Moldova fill in the jobs of cadastral engineers without having the necessary quualification and sometimes occupy 2-3 jobs. Most materials exsting in the village halls are printed and are rarely used. Also, we should mention the importance of permanent training of the system users (civil servants), as well as their motivation (financially or by professional advancement), in order top revent the migration of specialist staff Analyzing the existing materials, we noticed that their printed form prevented their updating for 20-30 years. The cadastral materials developed during the massive registration were somewhat more updated, but only in records and based on the information presented by the new owners. The information owned by the local public administration requires periodical updating financed by the village hall budget. Unfortunately, the village halls performed no updating, due to the lack of financial resources.
The studies prove that, although there are cadastral cartographic materials in digital format, they are not used as there is no licensed software and trained specialists in the village halls. The reports submitted to the higher public authorities are written in the traditional manner and sent without any higher authorities verifying whether they reflect the real situation, as no district has specialists who use verification materials and equipment.

CONCLUSIONS

The locality development strategy is the framework for its evolution during the next few years in order to improve the quality of its inhabitants' life. GIS is an information support serving both public and private interests, owing to the preservation and improvement of the economic, social and environmental elements that are essential for the long-term welfare of the citizens and trading companies.
Considering the long period of time required for the GIS elaboration and use, and the upstanding nature of the information included in the database, the proposed priority refers to the information system is based, the specialists' level of trening, the existence and use of the hardware components, the registers of the the action directions and investments that have a significant impact on the economic and social development, either from internal sources (local budget, public-private partnerships) or external sources (state budget, structural funds, external credits, etc.). These sources are aimed at providing the basic conditions (infrastructure, environmental protection, community services and local management) which the town, city or village can develop in the future.
At present, there is no GIS model for any locality. It is, however, necessary to elaborate this model and verify its operation, since there are trening courses for the specialists in charge of the GIS implementation and use.
GIS elaboration should be initiated starting from the current situation by updating and systematizing the cartographic materials, creating databases about localities, identifying the future users and establishing the form of future reports.
The activity of the local public authorities concerning tthe organization of the future development measures should be regarded as a joint activity of the local council and the mayor. Each local public authority has to play a well-determineed part so that the whole society could benefit from their work.
Information society will have a positive impact on local economy by the contribution brouhgt to increasing productivity, decreasing gaps, inequity and unemployment, increasing the quality of the education system and using innovation in production activities.
Communities should invest in their future, in their next generations, and use their competitive advantages: their natural resources, the increasing international demand for ecological products, the use of their area for local development.

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