

# **GIS FOR THE VALORIZATION OF HARDLY ACCESSIBLE ALPINE AREAS WITH COMPLEX POTENTIALS FOR TOURISM, WITH A VIEW TO THEIR INCLUSION IN TOURIST ROUTES. DEVELOPMENT OF THE VALLEYS OF LOTRU AND OLTEȚ**

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**ABSTRACT** - VALOT originates in the experience of European countries from the Alpine Space that succeeded to establish three top priorities for hardly accessible mountain areas based on communitarian programs (Natura 2000, Interreg IIIB – AlpNa Tour, VIADVENTURE, RegioMarket, etc.): competitiveness and attractiveness of the Alpine Space, accessibility and connectivity between high altitude settlements, environmental protection and prevention of natural hazards and disasters (snow falls, land slides, etc.). Starting from the project of Law on Approving the National Spatial Plan – Section VI – Tourism, the project aims at evaluating the current resources of hardly accessible mountain areas with complex potentials for tourism according to the experience of the European Union. GIS analysis will underline national/regional disparities of these areas, leading to conclusions on their typology and intervention proposals. The second part will focus on a case study of a hardly accessible area with a high landscape value and still un-valorized potentials for tourism. The existing situation of the area between the Lotru and Parâng mountains, consisting of the territories of four communes and a city, belonging to the counties of Vâlcea and Gorj, will be analyzed. Based on a spatial development scenario using selected statistical and geographic indicators, intervention priorities will be analyzed with the SPATIAL ANALYST, as well as funding possibilities for the creation of a cluster of mountain resorts (Rânca, Vidra, Voineasa) in order to valorize the recreational and balneary patrimony of the area, observing principles and objectives of sustainable development in mountain areas. The project will create a methodology for diagnosing problems and dysfunctions of such areas, development possibilities based on the experience of the pilot study, proposals for improving the institutional framework for implementing, monitoring and evaluating the results and (last but not least) funding sources.

**Keywords:** spatial planning, instruments and techniques, spatial scenarios, GIS, mountain areas

## **1. Background**

The Fundament Note of the Decision of the Government of Romania on the **approval of the sustainable development strategy for mountain areas** shows that “mountain areas differ from other regions by natural disadvantages – altitude, climate, slopes, low soil fertility, isolation from communication routes and markets, by structural disadvantages – ageing of population and exodus trends, restrictive occupations, distance from decisional centres, insufficiently developed infrastructures”. Due to deforestations and low investments in the latest years, hardly accessible mountain areas with complex potentials for tourism are in socio-economic decline and confront serious problems due to natural hazards.

This is a case where a scientific approach to the revival of these areas is needed in accordance with national regional policies:

- Develop advanced techniques and instruments for national, urban and rural spatial planning;
- Use of IT in monitoring the level of development in Romania, according to the new directions established in the European Union by Lisbon and Göteborg Strategies.

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The objective is to produce a spatial development model based on advanced spatial planning techniques and instruments for hardly accessible and valuable mountain areas in order to valorize their cultural and tourism potential, useful for local authorities (especially County Councils) in the resolution of complex problems, in a multidisciplinary public-private partnership: the National Institute for Research and Development in Urbanism and Spatial Planning URBANPROIECT, Bucharest, the National Institute for Research and Development in Tourism, Electrovâlcea Râmnicu Vâlcea, and the Geography Institute of the Romanian Academy, Bucharest. The spatial development model will be a Spatial Plan of the Zonal Territory (PATZ) produced using GIS and the SPATIAL ANALYST.

The 2<sup>nd</sup> European Cohesion Report includes mountain areas in the **priority regional policy** of the EU. The June 2004 proposal for a European Constitution adopted by the Convention for a Future of Europe connects mountain areas tightly with the concept of **territorial socio-economic cohesion**, as main objectives of European regional development. Regional European policies address the majority of the mountain areas (95% receive development support – Objective 1 – or socio-economic re-conversion support – Objective 2).

There are European associations for cooperation between mountain territories (e.g., EUROMONTANA) – networks of regional organizations including multi-sector socio-professional organizations promoting economic, social, cultural, and environmental interests of mountain areas. Some INTERREG programs (ex. Interreg IIIB: Carpathian Project, Parks&Economy, Ruraltour, Shining Mountains, Development of a Sustainable Tourism or Alpine Space Program) also target the development of mountain areas in member states of the EU.

The **Program of Government 2005-2008** provides that “National tourism shall be oriented and integrated in regional and worldwide trends”, and the Government proposes the following objectives for tourism “increase Romanian tourism through a diverse offer and increased quality of services”. Spatial planning strategies provide that “spatial development policies contribute to socio-economic cohesion of settlements and regions, increase competitiveness and conserve cultural diversity and natural capital.”

The Law project on **Approving the National Spatial Plan – Section VI – Tourism** shows that “according to the European documents, sustainable tourism, based on a profound knowledge of ecosystems and environmental support capacity with respect to tourism activities.” Among others, “zones with complex and high potentials” have been identified. Numerous such zones lie in mountain areas in Romania and are targeted by this project.

Romanian legislation in this domain consists of the **Law of the mountain** no. 347/2004, Decision of the Government no. 949/2002 on **approving criteria of delimiting mountain areas**, and the **Sustainable development strategy for the mountain zone**, Decision of the Government no. 1779/2004.

Structures aiming at the rural development of mountain areas are specialized governmental organisms (National Agency of Mountain Zones, CEFIDEC Vatra Dornei, etc.), non-governmental (ROMONTANA, other members of EUROMONTANA), other specific organizations (Institute for Research and Development in Mountain Sciences – Sibiu, committees of mountain zones).

Programs on sustainable development of Romanian mountain areas are: PHARE, programs of the government, FIDA Programme, SAPARD of the EU. Romania is part of Interreg IIIB CADSES România, with numerous programs promoting mountain areas (Carpathian Project), sustainable tourism (Development of Sustainable Tourism), Cultural Thematic Route Development in Rural Areas (HERITOUR).

The project aims at implementing the regional policy of PND 2007-2013 on creating adequate infrastructures for tourism in mountain areas by creating an advanced spatial planning instrument for mountain territories with complex and high potentials, in order to increase the administrative capacity of accessing European funds.

The project proposes an evaluation of mountain zones and regions part of regional European policies, mentioning official documents, resulting actions and policies to study the typology of mountain areas.

Starting from these documents, the project will compare Romanian legislation and documents referring to mountain areas. Based on PATN, Section IV – Tourism, mountain areas with complex and high potentials will be chosen, especially those hardly accessible, requiring investments for

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development. Development opportunities and threats to development will be indicated (NATURA 2000 includes numerous natural sites in these zones). Analyses based on statistical and geographic data, using a set of indicators representative for these zones, will strengthen the results. The technical solution consists of a GIS representation of mountain areas with complex and high potentials, allowing for data entry. Data consists of spatial indicators and statistical analyses of regional development. Resulting database is the **novel element** of the project, since such GIS databases (real STEREO70 location and complex alphanumeric database) are not available for the Romanian mountain areas with complex and high potentials.

The second part of the project is an application, as a case study for the area of Lotru-Parâng mountains, with a very complex potential for tourism, still not valorized, partly because it is even nowadays hardly accessible. Another **novel element** of the project (due to the utilization of GIS – Spatial Analyst) is that analyses will demonstrate the usefulness of creating a cluster of mountain resorts in this area (Voineasa, Vidra and Rânca), which could help the area by new forms of tourism (sports, balneary, business).

From a methodological perspective, the project develops PATZ analyses (Spatial Plan of the Zonal Territory) in conjunction with GIS instruments for an exact evaluation of existing problems and in order to underline priority interventions. Arguments will be provided and extended as a methodology for all hardly accessible Romanian mountain areas with a high potential for tourism.

The project has a high **degree of complexity**, using advanced techniques and instruments for national, urban and rural spatial planning to create a spatial development model based on the professional experience of the partners and analytical abilities of GIS – Spatial Analyst. The methodology of creating a spatial model for hardly accessible mountain areas with complex and high potentials will be presented in an international conference on Interreg IIIB - Carpathian Project.

The **general objective** of the project is to establish a public-private partnership (IMM type) to develop an advanced spatial planning instrument by elaborating a spatial development model for mountain territories with complex and high potentials, in order to valorize their tourism and cultural potential. This advanced spatial planning instrument is very useful for the local public administrations (ADRs, County Councils) for establishing intervention priorities (projects for accessing European funds) in developing hardly accessible mountain areas with complex and high potentials.

**The main result** of the project is an integrated system, model for development and European integration of Romanian hardly accessible mountain areas with complex potentials for tourism, and a possible base for the scientific fundament of investments on developing the balneary, tourism and agro-tourism functions of the pilot area, as well as the protection and conservation of resources. All actions and investments must be subordinated to one of the fundamental objectives of community policies, i.e. conservation of natural and cultural heritage.

The **benefits** of the project are:

- Obtain a spatial development model for mountain areas with very high potentials for tourism, according to the regulations of the European Union, and aligned to regional policies of the EU;
- It is an instrument for accessing European funds for regional development in Romania, through the methodology and results;
- Creation of a database with complex statistical and geographic information, according to the European standards, for Romanian mountain areas with very high potentials for tourism;
- Improve knowledge on integrated GIS, create strong partnerships between participating institutions in order to access specific European funds;
- Information from the database could be used by other fields: tourism, agriculture, spatial planning, transport, etc.

The relevance of the project is strengthened by the major interest of County Councils Gorj and Vâlcea in models for their territories, to be used as a Master Plan for phrasing projects for accessing European structural funds. Young researchers and doctoral students are part of the team.

## 2. Preliminary results

European mountain areas were described starting with official definitions (art. 18 of the Regulation of the European Council no. 1257/1999) and other programs and studies on policies for the mountain areas. The following presents the connection between mountain areas and sustainable development, according to the provisions of Agenda 21, chap. 13 (fragile ecosystems – sustainable development of the mountain areas). The role of using GIS systems to assess the potential of hardly accessible mountain areas in all domains had also been underlined.

Romanian mountain areas were presented starting with current legislation with reference to it: Governmental Decision no. 949/2005 on approving criteria for delineating the Romanian mountain areas, Governmental Decision on approving the Strategy for the sustainable development of the Romanian mountain areas, Law of the mountain, Law no. 389/2006 on ratifying the Framework Convention on the protection and sustainable development of the Carpathians (the Carpathian Convention).

In order to identify the Romanian mountain areas studied by the project, the delineation was attempted at the level of administrative-territorial units situated at altitudes of 600 m and above (as in Governmental Decision no. 949/2005), over 800 m and over 1000 m. The resulted maps are presented in the following and are produced using the 3-D Analyst extension. For each case, the number of administrative-territorial units was 1 045, 701 and 532, respectively. The following phases will analyze each of the three situations. Partners will decide which case will be thoroughly analyzed, i.e. transformed in a database used to analyze the typology of Romanian mountain areas, their potential and development problems.

The following chapters describe problems of the European and Romanian Carpathians: conventions, accords, waters, forests, biodiversity, environmental protection, challenges (tourism), industry, power plants, dams, transportation, natural and energy resources.

Finally, the typology of European and Romanian mountain areas is presented. Analyses look at the demographic typology and developmental trends of mountain areas, economic characterization of mountain areas (primary, secondary and tertiary sectors, accessibility and infrastructure (transportation, medical services, education, health, tourism, provision of electrical power and density of all aforementioned facilities) in Europe. Based on the results of previous studies (NORDREGIO – Mountain Areas in Europe), 3 types were identified with respect to 1. Socio-economic capital, 2. Transportation infrastructure, local and regional accessibility and services, and 3. Land use and cover. Starting from these typologies, mountain areas can be characterized based on their contrasts between different averages. For instance, with respect to the first typology – socio-economic capital – derived from indicators such as population density, population growth and access to markets, Romanian massifs can be included in the fourth typology, namely “far zones with low population density”.

The last chapter presents a comparative analysis of Romanian and European mountain areas with respect to their typology. The chapter presents the offer of Romanian mountain tourism, the tourist potential offered by the pilot area of the study: Parâng-Lotru Mountains, as well as the strategies and objectives of development in Romanian mountain areas.

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