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**PhD THESIS**

*Summary*

**THE LAND OF HAȚEG.**  
**STUDY OF REGIONAL GEOGRAPHY**

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## TABLE OF CONTENTS

	Pag.
<b>LIST OF TABLES .....</b>	<b>1</b>
<b>LIST OF FIGURES .....</b>	<b>2</b>
<b>INTRODUCTION .....</b>	<b>4</b>
<b>CHAPTER 1. THEORETICAL AND METHODOLOGICAL ASPECTS .....</b>	<b>5</b>
<b>1.1. Objectives and hypotheses of the research .....</b>	<b>5</b>
<b>1.2. Theoretical aspects .....</b>	<b>6</b>
1.2.1. The Romanian mental space under research .....	6
1.2.2. The Land of Hațeg in literature .....	10
<b>1.3. Methodological aspects .....</b>	<b>11</b>
1.3.1. Methodological aspects in the study of the “land”-type mental space .....	11
1.3.2. Methodological aspects applied to the Land of Hațeg region .....	12
<b>CHAPTER 2. THE ROLE OF HISTORICAL EVOLUTION IN DEFINING THE LAND OF HAȚEG .....</b>	<b>17</b>
<b>2.1. Objectives and methodological aspects .....</b>	<b>17</b>
<b>2.2. Historical evidences of the spatial and temporal continuity of habitation .....</b>	<b>18</b>
<b>2.3. The impact of history on the planning and management of a “land”-type geographical region .....</b>	<b>21</b>
2.3.1. Archeological sites – evidences of Daco-Roman civilization .....	22
2.3.2. The Romanian principalities – administrative models of the Land of Hațeg .....	26
2.3.3. Hațeg Citadel – historical brand of the Land of Hațeg .....	29
2.3.4. The border settlements in the Land of Hațeg during the Habsburg period .....	33
2.3.5. The noble residences in the Land of Hațeg – particularity elements of the built heritag...	34
2.3.6. Aspects of the physiognomy of the Land of Hațeg during the socialist period .....	36
2.3.7. The Land of Hațeg – territory for a legislated project? .....	37
<b>2.4. Conclusions .....</b>	<b>38</b>
<b>CHAPTER 3. DESCRIPTION OF THE NATURAL ENVIRONMENT AND FUNCTIONAL INTERDEPENDENCIES OF THE LAND OF HAȚEG .....</b>	<b>41</b>
<b>3.1. Objectives and methodological aspects .....</b>	<b>41</b>
<b>3.2. Implications of the paleogeographic evolution to the past and the present of the Land of Hațeg .....</b>	<b>43</b>
3.2.1. The paleogeographic evolution .....	43
3.2.2. The geology – relief morphometry relationship .....	46
3.2.3. The geology – geomorphological risk phenomena relationship .....	48
3.2.4. The geology – pedological resources relationship .....	49
3.2.5. The geology – mineral and paleontological resources relationship .....	49
<b>3.3. Characteristics and implications of the present relief .....</b>	<b>50</b>
3.3.1. The geographical location .....	51
3.3.2. The role of the relief in delimiting the Land of Hațeg .....	51
3.3.3. Landform units and subunits .....	51

3.3.4. The relief – climate-influencing factor .....	59
3.3.5. The role of relief in determining the run-off characteristics .....	63
3.3.6. The implications of relief on the biopedogeographic characteristics .....	64
3.3.7. The implications of relief on the distribution of the built space .....	65
3.3.8. The implications of relief on the marking of the communication lines .....	68
3.3.9. The role of relief in the historical evolution of the Land of Hațeg .....	73
<b>3.4. The climate implications in the Land of Hațeg .....</b>	<b>74</b>
3.4.1. The climate regional context .....	74
3.4.2. Temperature .....	77
3.4.3. Precipitation .....	77
3.4.4. The role of climate in the run-off characteristics in the river bed .....	78
3.4.5. Climatic ecometric indices – correlations between climate and the biopedological cover .....	79
3.4.6. Implication on the leisure activities .....	81
<b>3.5. The representativeness of the hydrological elements for the Land of Hațeg .....</b>	<b>82</b>
3.5.1. Potamology and hydrogeology .....	82
3.5.2. Potamologic characteristics .....	85
3.5.3. Limnologic characteristics .....	85
3.5.4. Hydrogeologic characteristics .....	86
3.5.5. Hydrographic elements significant in the biopedological diversification .....	86
3.5.6. Hydrologic elements and the distribution of settlements .....	89
3.5.7. Implications of the hydrologic elements for the marking of the access routes .....	90
3.5.8. The use of water resources .....	90
<b>3.6. Biopedological elements .....</b>	<b>93</b>
3.6.1. The pedological cover characteristics .....	93
3.6.2. The pedologic cover – vegetation – anthropogenic factor relationship .....	97
3.6.3. The role plaid by biopedological elements in the agriculture of the Land of Hațeg .....	99
3.6.4. Fauna .....	102
<b>3.7. The efficient use of the natural environment and the protection of its elements .....</b>	<b>103</b>
<b>3.8. Conclusions .....</b>	<b>106</b>
<b>CHAPTER 4. GEODEMOGRAPHIC AND HABITAT-RELATED SPECIFICITIES .....</b>	<b>109</b>
<b>4.1. Objectives and methodological aspects .....</b>	<b>109</b>
<b>4.2. The time of habitation .....</b>	<b>110</b>
<b>4.3. The geodemographic evolution .....</b>	<b>111</b>
4.3.1. The geodemographic potential .....	111
4.3.2. The natural balance .....	114
4.3.3. The periodical migration .....	115
<b>4.4. Geodemographic structures .....</b>	<b>119</b>
4.4.1. The structure of population by age and sex .....	119
4.4.2. The ethnic structure of population .....	120
4.4.3. The confessional structure of population .....	120
4.4.4. The evolution of scholar population and educational establishments – result of the regional demographic involution .....	120
<b>4.5. Specificity of habitats .....</b>	<b>126</b>

4.5.1. The first documented mention .....	126
4.5.2. The evolution of the dwelling areas .....	127
4.5.3. The evolution of the vernacular heritage .....	130
4.5.4. Specificity of the Hațeg village .....	135
<b>4.6. Popular culture and mentalities in the Hațeg area .....</b>	<b>136</b>
4.6.1. Identity of the people in the Hațeg area .....	136
4.6.2. The regional identity manifested by costumes, dances and customs .....	138
<b>4.7. Traditional occupations .....</b>	<b>145</b>
4.7.1. Traditional agriculture .....	145
4.7.2. Grazing .....	146
4.7.3. Cultivation of fruits .....	146
4.7.4. Milling .....	146
4.7.5. Crafts .....	150
4.7.5.1. Woodworking .....	151
4.7.5.2. Stone working .....	152
4.7.5.3. Metal working .....	153
4.7.5.4. Clay working .....	153
4.7.5.5. Processing of fibers and yarns .....	153
4.7.5.6. Leather and fur processing .....	154
<b>4.8. Conclusions .....</b>	<b>154</b>
<b>CHAPTER 5. ECONOMIC-GEOGRAPHICAL CHARACTERISTICS OF THE LAND OF HAȚEG .....</b>	<b>157</b>
<b>5.1. Objectives and methodological aspects .....</b>	<b>157</b>
<b>5.2. The primary sector activities .....</b>	<b>159</b>
5.2.1. Forest harvesting .....	159
5.2.2. The evolution of agricultural activities .....	162
5.2.3. Present forms of agricultural exploitation .....	164
5.2.3.1. Natural pastures – between intensive grazing and ecological agriculture .....	165
5.2.3.2. Fruit-growing – representative crop for the Land of Hațeg .....	168
5.2.3.3. The agricultural potential of the Land of Hațeg reflected in the agricultural crops .....	171
5.2.3.4. Individualization of the zootechnical sector in the Land of Hațeg .....	174
<b>5.3. The secondary sector activities .....</b>	<b>176</b>
5.3.1. The evolution of the industrial activities inside the region and in its vicinity .....	176
5.3.2. Present forms of industrial exploitation .....	177
5.3.2.1. The extractive industry – result of the underground resources in the Land of Hațeg .....	180
5.3.2.2. The construction materials industry in the Land of Hațeg .....	180
5.3.2.3. The food and textile industry – long-established industry branches in the Land of Hațeg .....	181
<b>5.4. The tertiary sector activities .....</b>	<b>187</b>
5.4.1. Trade and services .....	187
5.4.2. Tourism .....	189
5.4.2.1. The natural heritage and its impact on the touristic assertion of the Land of Hațeg .....	189

5.4.2.2. <i>The visibility areas in the Land of Hațeg</i> .....	191
5.4.2.3. <i>The built heritage and its touristic usage. Regional tourist particularities</i> .....	192
5.4.2.4. <i>The Land of Hațeg – Romanian spiritual pole. Case study: the Prislop Monastery</i> .....	197
5.4.2.5. <i>The existing tourism infrastructure in the Land of Hațeg</i> .....	199
<b>5.5. The access infrastructure of the Land of Hațeg</b> .....	<b>201</b>
5.5.1. The intra- and extra-regional interconnectivity .....	201
5.5.2. The viability of the access infrastructure .....	203
5.5.3. Intervention actions in terms of access infrastructure .....	204
<b>5.6. Conclusions</b> .....	<b>208</b>
<b>CHAPTER 6. THE FUNCTIONALITY OF THE LAND OF HAȚEG TERRITORIAL SYSTEM</b> .....	<b>212</b>
<b>6.1. Validation of the 1<sup>st</sup> hypothesis</b> .....	<b>212</b>
<b>6.2. Validation of the 2<sup>nd</sup> hypothesis</b> .....	<b>219</b>
<b>REFERENCES</b> .....	<b>220</b>

**KEYWORDS:** The Land of Hațeg, functional region, Hațeg mental space, project territory, gravity axis, polarization center

## **CHAPTER 1. THEORETICAL AND METHODOLOGICAL ASPECTS**

### **1.1. Objectives and hypotheses of the research**

*The Land of Hațeg. Regional geography study* represents a study of wide applicability in the planning and management of a territory. It belongs to a collection of regional studies on the “land”-type mental spaces, a step undertaken more than one decade ago by professor dr. Cocean P.

The main objectives of this study were focused on studying and implementing the concepts commonly used in a “land”-type regional system, demarcation of the present boundaries of the Land of Hațeg based on complex criteria, the integrated analysis of the components of the territorial system in such a manner to ensure its operation as a project territory and the development of research skills. The two work hypotheses which were the starting point for demonstrating the functionality of the Land of Hațeg as a project territory and the transformation of a regional geography study into a work tool for the stakeholders responsible with the spatial planning.

### **1.2. Theoretical aspects**

From a conceptual point of view, the meanings of political-administrative entity conferred during the Middle Ages to the concept of “land” have evolved over time to its perception as mental space. In the 21<sup>st</sup> century, there was a rediscovery of the notion as a geographic region of Romania, whose specificity is given by its historical origin (originally, a medieval pre-state territorial form), geographic location, physiognomy, human element and regional cohesion. With the reinvention of the concept, the Land of Hațeg now meets the attributes of a mental space and research territory, as the theoretical analysis accounts for potential stakeholders responsible for or involved in decision-making regarding the use of the natural, socio-economic and human potential of this territory.

The Land of Hațeg has always been an area that has drawn the attention of many researchers, either due to its historical load or due to geology, adjacent mountainous relief or ethnographic aspect, which is the reason for focusing on the way it was perceived in the scientific literature. In addition to literature references, particular attention was paid to cartographic materials that served as sources for the identification of the existing situation in the territory, but also of the diachronic evolution of some phenomena occurred in the area.

### **1.3. Methodological aspects**

Starting from identifying the methodological aspects that have been used so far in the other research works of the “land”-type, the principles, means and methods used were highlighted, which also revealed that most of them were less using a methodological approach, although some of the applied indicators and the obtained results were inserted throughout the works. Particular attention was paid by some of the authors of regional geography studies of the “land”-type to the demarcation criteria of the mental space.

Responding also to the two proposed hypotheses, the necessary steps to prepare a regional geography study were highlighted in this methodology chapter, while mentioning the fact that methodological aspects were also included, punctually, in the other chapters. The three stages of work – creation of the database, field research, development of drawings and interpretation of results – included different methods, techniques and means. On the one hand, the reference *micro-regional* scale was considered, the data being processed at local level and summarized at regional level. On the other hand, the *decision-makers* involved were not omitted, as these were the direct beneficiaries of this study. A greater degree of responsiveness from local authorities was noticed regarding the provision of data or information, as well as a necessity of involving the national and regional policy makers with a higher implementation capacity.

## **CHAPTER 2. THE ROLE OF HISTORICAL EVOLUTION IN DEFINING THE LAND OF HAȚEG**

### **2.1. Objectives and methodological aspects**

Assuming that any element of a territory may be included in a land-use planning study, due to its impact on the entire region, we consider that history has also an impact, as time influences the development of the region. The pursued objectives include: certification of age and continuity of dwelling in the Land of Hațeg, analysis of the visibility area of the Hațeg Citadel, analysis of noble residences in the Land of Hațeg and identification of their conservation /degradation state, identification of dysfunctions in the territory and launching of proposals for the efficient use and promotion of the existing historic monuments, etc.

### **2.2. Historical evidences of the spatial and temporal continuity of habitation**

Based on archaeological discoveries, written documents and toponymy, it was demonstrated that the Land of Hațeg region is one of the most humanized Romanian spaces, with a continuity of habitation proven over time. The proofs include the traces discovered since Paleolithic times in the caves from the Șureanu Mountains, the archaeological sites from Neolithic (predominant Criș culture) and Bronze age (the cultures Coțofeni, Balta Sărată, Wietenberg), the fortified settlements specific to the

Hallstatt and La Tène cultures (Dacian period), the multitude of Roman artifacts (be they *villae rusticae*, resource exploitations, infrastructure elements, etc.), and the buildings specific for the feudal period (especially ecclesiastical units), all found in the region.

### **2.3. The impact of history on the planning and management of a “land”-type geographical region**

Starting from the historical analysis in terms of the elements left in the territory (built heritage), a series of legislative documents were mentioned to be taken into account when planning a territory.

The first important historical period in the evolution of the Land of Hațeg was the Daco-Roman period, which is proven by the archaeological discoveries. Without an analysis of the entire territorial context, it is hard to render the historical implication for the evolution of the region, which is why a review was done to highlight the impact of the Dacian fortresses in the Șureanu Mountains, located close to the eastern border of the analyzed area. Included in the Roman province of Dacia, the Hațeg Depression underwent a significant development, especially since the Emperor Trajan founded here the town of *Colonia Ulpia Traiana Augusta Dacica Sarmizegetusa* (Sarmizegetusa today). To demonstrate even more thoroughly the Roman presence in the territory, a series of specific structures of Roman civilization were brought to the surface as a result of archaeological campaigns (amphitheatres, aqueducts, mines, forums), spread in most of the current settlements in the region. The most frequent were the *villae rusticae* from Ostrovu Mic, Hațeg, Clopotiva, Râu Mare, Râu de Mori, Peșteana, Peștenița, Densuș, Hățăgel, Tuștea, General Berthelot, Crăguiș, Cârnești, Păclișa, Reea, Râu, Alb, Sânpetru, Valea Dâljii, Nălațvad, Silvașu de Jos, Ruși, Ciopeia, Râu Bărbat, Sălașu de Sus, Valea Lupului, Pui, Livadia.

The feudal period, characterized by the presence of specific administrative institutions of the central power (Hunedoara county for this region) is defined by the existence of local voivodeships and principalities, incorporated for a while in the name of district (the Hațeg district), which is an administrative form recognized by the Hungarian royalty. The presence of stone churches, nobility courts and citadels certifies the presence of a territory occupied by Romanians, but also the presence of some Romanian nobility. We note the presence of principalities of Râu Mare, Densuș, Râu Bărbat, Râu Alb, Britonia, Sălașurilor, Vadu and Silvaș, which included several villages. The most important buildings of the Romanian lords include the church of Densuș, Mălăiești Fortress, Colț Fortress and Răchitovei Fortress.

Hațeg Citadel, one of the illustrative historical monuments of the region, may be invested as a historical brand of the region due to its military importance (the role of



controlling the access routes to Transylvania), even if, currently, the only fragment of wall remained visible until today is the keep (fortified tower). In the process of transforming the Hațeg Citadel in a historical identity of the Land of Hațeg region, two important variables were analyzed: degree of accessibility and visibility area. The current situation recorded was supplemented by the proposal of some initiatives for further planning.

A significant phase in the historical evolution of the Land of Hațeg was represented by the creation of the Romanian border regiments and the transition of the Romanian peasants to the category of free peasants. It was noted that two companies of the 1<sup>st</sup> Regiment from Orlat were also found on the territory of the Land of Hațeg: the 2<sup>nd</sup> company, headquartered in Hațeg, which included the settlements of Cârnești, Clopotiva, Farcadin, Peștișu Mare, Silivașu de Jos, Silivașu de Sus, Totești, Zeicani and the 3<sup>rd</sup> company, based at Râu Alb, which included the settlements of Baru Mare, Băiești, Coroiești, Galați, Livadia, Paroș, Săcel, Sălașu de Sus and Zăvoi. The advantages that the border guardians were enjoying include: allocation of land and exemption from paying almost any taxes, access to schools, construction of roads and planting of fruit gardens in the border villages or encouragement by the Habsburg Empire to practice crafts.

In addition to historic monuments of archaeological, historical or religious nature, the Land of Hațeg has a priceless heritage of buildings established as properties of some noble families, poorly promoted and little known monuments even to current generations who live in their immediate vicinity. Analyzing the List of Historic Monuments (2010) and the situation identified in the field, 19 such buildings could be identified, but the list is not exhaustive, precisely because of the advanced degradation of these buildings. Besides the residential function they held in the past, the common elements defining the residences of nobility today are the diverse heritage and the high degree of accessibility. Most of these have been returned to descendants of former owners and have not been recognized as historic monuments, while they incorporated outbuildings and landscape elements (parks) in addition to the main building and they are in an advanced state of decay. The historical parks and gardens which accompanied the castles/lordly houses were in turn a reflection of social status held by the owner and illustrated the trend of the times when they were created. Of the 14 parks identified in the field, four received recognition as a historic monument (Pogany castle park - HD-II-m-A-03402.02, Kendeffy castle park - HD-II-m-A-03446.03, Nopçsa castle park - HD-II-m-B-03439.02, Nalatzî castle park - HD-II-m-A-03369.02), while the others are not ranked. Partially or completely destroyed, not taken care of, the parks can be invested with the identity cultural aspects of the analyzed area. For this, awareness campaigns regarding their existence are needed. The need for setting up these residences aims to increase the touristic attractiveness of the rural communities, individualization of typical

cultural landscapes, restoration of a particular lifestyle and, hence, of the material culture of the region, bringing added value to the socio-economic development of the area.

The socialist period imprinted two important aspects in the analyzed region: a) the land reform and community land ownership (there was no commune that did not have at least one CAP – Agricultural Production Cooperative) and b) the nationalization of the Baru refractories factory and of the small industrial units in Hațeg, followed by the emergence of handicraft cooperatives.

Considering the existence of a strongly connected human community and a strong attachment of the inhabitants to a mental space (the Land of Hațeg), the presence of a self-sustaining natural and man-made basis for the region, the existence of a legal framework that encourages the creation of partnerships, and the joint initiatives of the decision-makers that have already been set up in the region (for example, the activities proposed and implemented by the administration of the Dinosaur Geopark), one may conclude that the Land of Hațeg meets the criteria of a project area and can be a model of sustainable and functional regional planning.

#### **2.4. Conclusions**

Widely acknowledged because of its historical importance, the Land of Hațeg is defined also by certain dysfunctions, among which the most important are the low degree of preservation of historic monuments in the territory, the low degree of accessibility to the elements of historic cultural heritage, the lack of a marketing strategy in terms of promoting the historical heritage and the high costs and lack of initiative on behalf of the authorities or owners of historic monuments to restore the cultural heritage. On the other hand, the complexity and wealth of archaeological remains discovered in the area, the presence of historic monuments and their typological diversity (archaeological sites, churches, courts, citadels, lordly houses, castles etc.), the existence of some monuments of national and universal importance in the proximity of the region (the Hunyadi Castle, the Dacian fortresses in the Orăștie Mountains), the presence of Romanian medieval stone fortifications, they all represent strengths that help individualize the Land of Hațeg from the historical point of view.

Our recommendations to leverage the cultural and historical heritage focus on: ► the development of activities to communicate the historical importance among local communities, ► the preservation of existing historic monuments, ► the leverage of historic monuments through restoration/reconstruction works, ► the establishment of some protection areas around the historic monuments according to the legal provisions which apply to immovable heritage, ► the creation of thematic tourist cycling or equestrian routes between the archaeological sites in the Land of Hațeg and in the

immediate proximity of the Șureanu Mountains (the Dacian fortresses of Sarmizegetusa Regia, Blidaru, Luncași, Costești) or ► the creation of thematic tourist routes reflecting significant historic periods in the evolution of the Land of Hațeg.

## **CHAPTER 3. DESCRIPTION OF THE NATURAL ENVIRONMENT AND FUNCTIONAL INTERDEPENDENCIES OF THE LAND OF HAȚEG**

### **3.1. Objectives and methodological aspects**

To identify the favorable or restrictive effects of the natural environment perceived not only as a support for the deployment of processes and phenomena, but also as an active component in a territory, the analysis focused on the following objectives: identification of implications of relief for the other natural and anthropogenic components (hydrography, built spaces, transport infrastructure, economic activities, etc.), determination of the regional geological evolution and identification of the types of existing underground resources, the analysis of the protection status of natural habitats in the Land of Hațeg and the identification of the current dysfunctions in the territory, as well as the suggestion of some concluding recommendations. The specific cartographic sources and data, supplemented by observations in the field, have led to some tangible results.

### **3.2. Implications of the paleogeographic evolution for the past and the present of the Land of Hațeg**

In addition to the real support of human activities and of the other natural elements, the paleogeographical evolution determines the existing resources in a favorable or inhibitory manner, the production of certain risk phenomena or potential facilities within the territory. The most significant impact left in the territory is reflected today by the existing geological formations (sedimentary – 42%, metamorphic and magmatic – 52%), and the resulting landforms represent other effects of the geological activity over time. A characteristic mountainous relief was developed on the metamorphic and magmatic rocks, while the presence of sedimentary deposits resulted in favorable conditions for habitation and diverse economic activities in the Hațeg Depression area. The paleontological resources, the fossils of the 12 dinosaur species and other vertebrate species add to those mentioned above, but with better focus of the scientists' attention. The field campaigns in the study area and the analysis of the orthophotos contradict the results of several studies on landslides (Gotiu Dana, Surdeanu V., 2006 Ștefania Manea, 2011; Manea Ștefania, Surdeanu V., 2012), demonstrating that these geomorphological risk phenomena are not specific to the Land of Hațeg. In the mountain areas, rock falls frequently occur, which are directly conditioned by the climatic parameters and by slope.

Demonstrating the inverse correlation between the size of the soil profile and the elevation, the interdependence between geology and the edaphic resources was highlighted. Another correlation dictated by geology is that which highlights the scarcity of mineral resources, on the one hand, and the complex richness of the paleontological resources, of international importance, on the other hand. These are associated, as a result of petrographic conditions, with the existence of the northeastern karst topography or of the glacial relief in the Retezat, Godeanu and/or Țarcu Mountains. Except the mountain area, on the outskirts of the Hațeg Depression one can find areas of prominent elevation, which recommends them as lookout points.

### **3.3. Characteristics and implications of the present relief**

The role of the relief regional layout was a decisive factor for the other elements of the natural environment (climate, hydrographic, bio-pedosphere cover), and more. The first impact of the relief resides in delimiting the region, as the watersheds, saddles and valleys represent the limit of the region, while the Strei River and its tributaries have the strongest influence.

A series of analyzed morphological parameters (slope, drainage density, altitude, depth of fragmentation) are reflected in the identification of two major landforms - mountain and depression -, but also in the favorable degree of relief for habitation and/or performance of various economic activities.

The altitude, landforms and their horizontal extension, orientation and slope of surfaces and the layout of the mountain ranges are the main features of the relief, which play a role in shaping climate, namely in identifying a moderate climate, as the mountain chains act as orographic barrier. Here we mention that thermal inversions are insignificant in the region. Due to the 142 km<sup>2</sup> located at over 1800 m, a spectacular mountain landscape occurred, represented by cirques, valleys and a significant number of glacial lakes. Another specific indicator calculated was insolation, its values being inversely proportional to the slope, the weight of the mountain units showing that 32% of the surfaces are semi-sunny (25.3%), semi-shady, shady or excessively shady.

Another direct consequence of the relief is felt in the drainage level, the existing mountain chains causing the formation of a rich hydrographic network with high flow in the river bed, which resulted in the presence of large hydropower facilities. At the quantitative level, the water bodies which mainly overlap the southern mountainous unit (Strei) have significant values.

The zonality of the relief - soil, vegetation, fauna - is also proven in the case of the Land of Hațeg. The luvisols (luvisols, preluvisols), hidrisols (luvosols and stagnosols), and Protisols (alluvial soils) are specific to the lowland area, while Cambisols are present in

the hills and hillocks in northeastern depression (Eutricambosols) and in the surrounding mountain area, usually at an altitude of 1500 m, in some cases up to 1700 m (districambosols). From the Spodosols class, the Prepodzols develop from 950-1000 m up to 1800 m (in Retezat and Țarcu) or 2000 m (in Godeanu), while Podzols from 1400 - 1600 m to 2200 m. Another type of undeveloped soil is present on the crests: Lithosol. In terms of vegetation distribution, we find forest associations in the floodplain, in the high and low plain units, continued with beech forests, with no association with coniferous forests, up to an altitude of 1200 m. From this altitude up to 1800 - 1900 m, the coniferous forests prevail, followed by the presence of subalpine vegetation at high altitudes, alpine meadows and surfaces quasi-uncovered with vegetation.

The distribution of the built space, in turn, is a consequence of morphometric characteristics of the relief, as the preferred landforms for housing are in the meadow (54.7%), high plain (15%), low plain (11.9%) and hills (11.6 %). The structure of the inhabited areas of the settlements undergoes changes with the increase of the altitude, with intermediate forms from compact (Hațeg) to spread (Peștenița, Râu de Mori, Șerel etc.) and scattered (Fizești, Federi). Most localities are included at least at the contact of two morphological units, benefiting from the available resource complementarity.

The relief also plays a significant role in shaping communication arteries, used since the Roman period (see the following roads: *Dierna-Tibiscum* (along the Timiș-Cerna corridor), *Tibiscum - Ulpia Traiana Sarmizegetusa - Apulum - Salinae - Potaissa - Napoca - Porolissum*, *Drobeta - Bumbești - Pasul Vâlcan - Sarmizegetusa*). The main roads prefer meadows, high or low plain units and only in special cases, they cross hills or hillocks. However, in terms of infrastructure, it has been proven that straight sectors are the most favorable in accidents occurrence, while curves are less significant.

The first human footprints discovered in the caves in the Șureanu Mountains, the archaeological discoveries confirming the location of the province capital in the southwestern part of the depression unit, the location of the Hațeg District at the intersection of three Romanian historical provinces (Banat, Oltenia, Transylvania), are all arguments for the impact of the relief on the historical evolution of this region.

### **3.4. The climate implications in the Land of Hațeg**

Based on the analysis of the grid data, average monthly values for the 1961-2010 period, received from the National Meteorological Administration, it was demonstrated the existence of a depression climate, with average annual temperatures between 12-13°C (lowland area) and -1.3°C on the highest peaks of Retezat and rainfall between 678-700 mm/year in the floodplain area and 800-1000 mm/year in the bottom of the depression and on the neighboring mountain levels. Resulting from a maximum amount

of rainfall in a short interval (72, 48 or 24 h), flash floods are hydric risk phenomena that meet the most favorable conditions for hydrographic manifestation on the water courses with springs in the mountainous areas.

To highlight the correlation between climate and the biopedological cover, three climatic ecometric indices were calculated: de Martonne aridity index (I), the continentality index of Gams ( $I_{cont}$ ) and the Angot precipitation index (K). The individualization of the Râușor mountain resort and of the accommodation units in the Râului Mare Valley and the Sibișel River Valley denotes an interconnection between the relief and the existing tourism activities.

### **3.5. The representativeness of the hydrological elements for the Land of Hațeg**

The hydrological elements represent the third category of elements of the natural environment (along with paleontological evolution and relief) that gives a specific character to the region, as a crucial role is played by the potamological and limnological characteristics. In terms of interrelation with the other physico-geographical and anthropogenic elements, hydrography influences the formation of certain types and subtypes of soils (alluvial soils, Hidrisols, alluvial Districambosols), it affects the land use due to the water excess and becomes the primary factor in choosing the location of settlements and, by means of the valleys, sets out the main communication axes.

In terms of using the water resources, both traditional uses (rafting, sawmilling, whirlpooling, milling) and the current uses (the existing hydropower facilities) have been highlighted. After analyzing old cartographic materials (the 3 topographic surveys of the Habsburg Empire, Soviet maps) and new (orthophotos, 2013), the diachronic evolution of traditional hydraulically-operated facilities in the Land of Hațeg was presented.

### **3.6. Biopedological elements**

In addition to the brief presentation of the typology of soils spread throughout the Land of Hațeg, and hence their characteristics, the petrography-altitude (landform unit) - soils - vegetation correlation was highlighted by means of the profiles. Another aspect highlighted in this subchapter is the emphasis of changes induced by the edaphic component on the land use, the correlations drafted in 1965 by Vuia R. being currently confirmed at spatial level. In terms of fauna, the vertebrates and invertebrates found in regional protected areas, the following are of particular importance: bisons (released free in the Țarcu Mountains), butterflies (see the Berhina Meadow European Lepidopterological Area), bats (Șura Mare Cave) and the bearded vulture (extinct).

### **3.7. The efficient use of the natural environment and the protection of its elements**

Included almost entirely in some national protected areas (Retezat National Park, Domogled-Cerna Valley National Park, Dinosaur Geopark-Land of Hațeg), doubled by the recognition of 47% of the area as a SCI site and 30.05% of the area as SPA, the Land of Hațeg brings together a significant number of habitats and species of interest, recommending the Dinosaur Geopark as model for training and building awareness of residents and tourists on the need for the conservation of landscape elements.

### **3.8. Conclusions**

The attributes of a project territory are met in terms of interrelationships between the physico-geographical elements and the other components (habitat, infrastructure, economic activities etc.), the high degree of accessibility, dictated by the layout of the amphitheater depression, the high degree of depression residential areas, and not only, the depression climate, the complex use of water resources, soil fertility, combined with individualization of spectacular scenery, acknowledged by declaring them as protected areas, all contribute to the assertion of a truly functional region. The results of the SWOT analysis and the identified conclusions in each analyzed component confirm once again the active role of the natural component in the assertion of the Hațeg region.

## **CHAPTER 4. GEODEMOGRAPHIC AND HABITAT-RELATED SPECIFICITIES**

### **4.1. Objectives and methodological aspects**

The main objectives of this chapter include: the analysis of the demographic potential and population geodemographic structures in the Land of Hațeg; the analysis of the natural and migration demographic balance in the region and the determination of external migration flows; the assessment of the evolution of rural and urban residential areas but also of the traditional specificity of the Hațeg village, supplemented by the identification of the current territorial dysfunctions and suggestion of recommendations to eliminate them.

The use of direct field observations (by photographing, mapping and discussions with local people) highlighted the specificities of rural universe, which is a consistent part of the inhabitants' material and spiritual heritage, added together in an exceptional vernacular heritage. Indirect observations by means of data analysis, assessment and interpretation were based on public databases (ETNOMON, the Ethnographic Atlas of Romania, the List of Historic Monuments, INSSE) or on cartographic documents (the Josephine survey maps, the Soviet military map, shooting plans, topographic maps, orthophotos), the end result being implemented in the form of cartographic representations.

#### **4.2. The time of habitation**

The diversity and complexity of archaeological records claim the seniority and continuity of the regional humanization, as demonstrated by processing and interpretation of data included in the National Archaeological Record of Romania.

#### **4.3. The geodemographic evolution**

Known as one of the most intensively humanized areas of the intra-Carpathian region, the Land of Hațeg underwent a differentiated demographic evolution, following an upward trend until 1977. After this year, the numerical evolution of the population has experienced an accelerating and permanent decline process. Starting with the period before the 1930 census (the years 1786-1930), the Land of Hațeg was defined by a regular process of population growth, influenced by the inhabitants' behavior and mentalities, especially in the rural area. The next phase was characterized by a clear downward trend of the number of inhabitants, closely connected with the economic metamorphoses of society. One should note that, in this region, the outside urban localities (Hunedoara, Călan, Deva, Petroșani) have exerted a much stronger polarization on the settlements within the region. This was much more accentuated than the rural-urban polarization inside the region, representing the main cause of population decline in the Land of Hațeg.

Considering the demographic size of the settlements, 4 categories of settlements were identified in the Land of Hațeg: very small villages (which include localities that are still listed as settlements, but these have no longer any permanent human inhabitants – Gotești, Mesteacăn, Copaci), small-size villages (characterized by a trend of population decline for 29 localities in the region), middle-size villages and very small towns (Hațeg, the only urban locality as a matter of fact).

Although its values are below the national or county average, the total demographic balance imprints an upward trend in the Land of Hațeg, with Hațeg, Sântămăria Orlea, Totești, Baru and Râu de Mori recording the lowest values of the total balance (Hațeg is the only administrative-territorial unit with positive values), while communes like Răchitova, Densuș and Sălașu de Sus face a massive demographic aging phenomenon (with values exceeding -12 ‰). The localities in Hațeg underwent a strong rural exodus in the context of industrial development in the region neighboring area (Hunedoara, Călan, Deva, Petroșani Depression), a phenomenon accelerated in the current transition period. Commuting - an intense phenomenon during the socialist period - is practiced today on a small scale, the polarization of the labor force being registered in Hațeg as internal urban center, but also in the external urban centers (especially Petroșani).



#### 4.4. Geodemographic structures

The structure of population by age and sex, ethnic and confessional structure was analyzed also in light of the human resources, emphasizing a process of demographic aging in the rural areas, an ethnic homogeneity and a slight religious diversity at regional level, which is not outside the pattern of inhabitants' affiliation to the Orthodox-Christian cult (80.39%).

#### 4.5. Specificity of habitats

Although some forms of organization have been shown even before the dawn of the Middle Ages, based on archaeological remains, the first documented mention of most of today's settlements was recorded in the feudal period.

Depending on how households were located in the street network and how the population has managed the land for a specific, predominantly agricultural use in case of rural areas, several types of settlements can be foreseen: gathered villages, spread villages and scattered villages, each type being cartographically presented by an illustrative model. By interpreting several cartographic materials, the evolution of the town of Hațeg was displayed, while illustrating the temporal evolution of certain phenomena that have shaped its current physiognomy (e.g., the emergence of industrial activities).

Another specific element of rural environment this time was the vernacular heritage in the Land of Hațeg, a detailed and updated analysis of the repertoire of traditional component being carried out as a result of field research (through mapping, photography) and examination of older cartographic materials (the topographic survey of the Habsburg Empire). Considering the use of wood, stone and bricks as building materials for foundation, walls and roof, a series of traditional households were individualized, as the identified types took into account the criteria of continuity and functionality of the households or the planimetric evolution of the house. Two types of archaic houses (main and secondary) were identified at the level of households and their characteristics: the main archaic type A. House with pantry and short stoop (*Sarmizegetusa, Federi*); the main archaic type B. House pantry/double rooms and long porch (*Șerel, Zeicani*); the secondary archaic type D. Two-room house with long porch (*Ohaba Ponor, Gotești, Petros, Peșteana, Săcel, Zeicani, Mesteacăn, Răchitova, Ștei, Petros, Pui, Boița*); and type E. Two-room house, long porch, basement and pavilion (*Tuștea, Zăvoi, Zeicani, Ponor, Săcel*), each with its related subtypes. In addition, the outbuildings have other features (double gates, the bench in front of the gate, the wattles or granite fences), which are also identified in the region, along with certain pieces and objects decorating the interior of the houses. Beside the existence of traditional households, other highly specific vernacular elements were highlighted at regional level, such as wayside crosses made of stone (Hățăgel) or wood (Ștei-Răchitova area,

Păucinești, Breazova, Livezi, Mesteacăn), traditional facilities (Cârnești, Totești, Suseni, Ohaba-Sibișel, Peștera, Galați, Șerel, Petros, Suseni, Paroș, Coroiștei, Râu Mic, Râu Alb) and granite fences, on the valleys of Sibișel and Râu Alb.

Although endowed with impressive material heritage, the Land of Hațeg preserves records of archaic village only in the Hațeg Village Museum in Peșteana and in the Land of Hațeg Museum, at local level or within some national museums (“Dimitrie Gusti” National Village Museum in Bucharest or ASTRA National Museum Complex, Sibiu). The number of households that preserve the authenticity of the place is smaller and smaller, with some priority recommendations of *in situ* preventive conservation as compared to them being kept in museums.

#### **4.6. Popular culture and mentalities in the Hațeg area**

Individualized as a distinctive ethnographic region at national level, the Land of Hațeg is characterized by certain identity aspects (mentalities, costume, customs or traditions, dances). Based on semi-structured interviews applied in the region and on the examination of monographic studies (literature records no other information in this regard), one can say that at individual level, the features that characterize the people in the Hațeg area are broadly in line with the Romanian general characteristics. Concurrently, the research addresses also the manner in which these people stand out from the residents in the neighboring areas, focusing on traditions, costumes, behavior and traditional architecture.

Simplicity and archaic character are two attributes that define the popular costumes of the Hațeg area, together with the strong influence of Banat, while the folklore from Hațeg is defined by “hațegane” (Romanian folk dances, in pairs).

In terms of customs practiced in the Land of Hațeg, this component underwent a noticeable decline. While the evening sittings of village women and bees or “nedeile” were representative in the past, they gradually dissolved. At present, some holidays habits throughout the year were preserved in a quite general form.

#### **4.7. Traditional occupations**

Based on the interpretation of old cartographic materials (the Josephine survey maps, the sheets of the *Ethnographic Atlas of Romania*, vol. I-IV), overlapping recent orthophotos (2013), a radiography of the traditional occupations in the Land of Hațeg (traditional agriculture, grazing, cultivation of fruits, crafts, milling) was carried out.

Animal husbandry was for a long period of time (antiquity-nineteenth century) the main occupation of inhabitants of settlements in the Land of Hațeg, along with the cultivation of plants in the alternative. A special role was played by activities which made use of the

existing resources in the territory. A prime representative example was milling, which was more broadly addressed in this study, practiced on all water courses in the area. In addition, based on our interpretation of cartographic documents, and more, we obtained a diachronic evolution of traditional hydraulically-operated facilities (watermills); the maximum recorded number was reached in the nineteenth century, when we identified 49 watermills. Their number has now been reduced to 10, very few of which are functional. With the local community as direct beneficiary, several recommendations have been proposed for the leverage of pre-industrial heritage of the Land of Hațeg, the most important being the preventive conservation works of the existing traditional hydraulic systems, namely in situ conservation and restoration to operation conditions of the existing ones, development of traditional related activities (growing of hemp and sunflower) and of some processing plants, etc.

Developed early in the Land of Hațeg, the crafts that were practiced refer to the type of resources that were used, among which we mention woodworking, stone working, metalworking, clay working, processing of fibers and yarns, leather and fur processing.

#### **4.8. Conclusions**

The main dysfunctions in the region, in terms of demographic component, refer to the following aspects: weak polarization of the town of Hațeg, exacerbation of territorial dynamics and residents' predilection for travelling abroad, the high degree of depopulation of villages in the Land of Hațeg in conjunction with an intense demographic aging and migration of young people phenomenon or the fragility of vernacular heritage and loss of traditional original elements in the rural world. In order to ensure social cohesion of the region, some recommendations were proposed, such as:

- investment in local jobs and increase of the polarization exerted by Hațeg,
- perpetuating popular culture by organizing specific events (festivals, bees),
- photographic exhibitions, ethnographic works, workshops and preventive and in situ actions conservation of existing folk architecture monuments,
- development and implementation of regional planning documents that focus on compliance with the traditional local specific elements and transformation of rural localities in local polarization centers which exert gravity on the ethnographic component, which would strengthen the Hațeg mental space (Clopotiva, Coroiștei, Densuș, Mesteacăn, etc.).

## **CHAPTER 5. ECONOMIC-GEOGRAPHICAL CHARACTERISTICS OF THE LAND OF HAȚEG**

### **5.1. Objectives and methodological aspects**

The main objectives proposed in the economic analysis of the Land of Hațeg covered the analysis of the agricultural and industrial potential of the region, the analysis of tertiary activities, identification of natural and man-made tourism resources, identification of the visibility areas, identification of the built heritage, analysis of the tourist traffic and infrastructure, analysis of access infrastructure and its quality and identification of dysfunctions. To achieve all these, the field mapping and the reference of cartographic materials and statistical data provided by the specialized institutions have been employed.

### **5.2. The primary sector activities**

The first activity included in the primary sector is forest harvesting, which is not recent. Examining old and more recent cartographic materials, the current situation of forests was highlighted (a deforestation phenomenon less emphasized in the territory, with respect to the national scale) and older logging through a case study (Baru).

Knowing the main changes that agriculture has undergone over time, situation outlined by the sequencing of the key moments for agricultural activities in the territory, the current forms of farming were examined. It can be stated that the Land of Hațeg individuates from the economic point of view, by the practiced farming activities, crop cultivation and animal husbandry which play an important role in the functionality of the analyzed region. Additionally, fruit-growing and wine-growing were analyzed separately, their diachronic evolution currently pointing a significant decline (with respect to the socialist period), many of the areas occupied by fruit trees and vines being abandoned.

### **5.3. The secondary sector activities**

The industrial evolution of the Land of Hațeg cannot be perceived in the absence of an overview of the territorial context, as the attraction exerted by the cities located outside the region is a defining feature in human resources employment. Mining has contributed to the development of localities on the Jiu Valley in the Petroșani Depression, which attracted commuters from the predominantly central-eastern villages of the Hațeg Depression. Iron ore processing has determined the industrialization of the towns Călan, Hunedoara and the rural settlements Ghelari and Teliuc in the Poiana Ruscă Mountains, which attracted the workforce of the region. During the industrialization period, Hațeg was notable for the refractories factory (Baru) and for several industrial units specific to the food and textile industry.

The Land of Hațeg was not known at regional level by the secondary sector activities, but, nevertheless, one can identify some peculiarities: specialization in several sub-industries, location of industrial units in the town of Hațeg and in the areas located near the primary resources and the tradition existing in some industries (food, textile or wood).

Based on field research and mapping of all economic entities in the region, combined with the information achieved from the orthophotos, according to the CAEN Rev. 2 classification of activities, the most important economic units in Hațeg and the localities with representative industrial activity were spatially represented. In this regard, several case studies were highlighted: the pyrite and bauxite mines from Boița and Federi for the extractive industry, the refractory bricks factory in Baru and the gravel plant on the Strei Valley and Râul Mare Valley for construction materials industry, the industrial units in Sălașu de Sus, Hațeg in the food and textile industry.

#### **5.4. The tertiary sector activities**

The trading and service activities imprint the following features to the region: an internal polarization exerted by the town of Hațeg, where most of the services are concentrated and a commercial polarization outside the region exerted by the larger urban centers (Petroșani, Călan, Hunedoara), where the service offer is much more diverse and complex.

With a diversity of complex natural and cultural resources, the Land of Hațeg meets all the individualization criteria of a touristic region, but the shortcomings of its assertion to its true potential are represented by the direct result of a weak individualization of the package tours, poor promotion of available tourism resources and underrepresented partnerships between the public and private sectors. Besides the identification and mapping of existing tourist routes, special attention was paid to establishing the visibility areas of the Land of Hațeg calculated by Viewshed Analysis function (Arc Gis 10.1). The cultural heritage passed on as built heritage, was, in turn, analyzed in terms of monument types (archaeological, secular or religious). Perceived at national level as a center of Romanian spirituality, the Prislop Monastery represents a central point of touristic polarization, as highlighted by the analysis of road traffic and the associated service offer.

Closely related to seasonality, the existing tourism offer, tourism promotion, quality of tourism services, infrastructure and tourist traffic are deficient at regional level, except the established tourist areas of the region (Prislop Monastery, Sarmizegetusa, Retezat Mountains).

### **5.5. The access infrastructure of the Land of Hațeg**

The road and rail access infrastructure was analyzed by means of 3 variables: interconnectivity (which revealed good connection between settlements), quality of roads and intervention works required for the infrastructure.

### **5.6. Conclusions**

The agricultural specific of the Land of Hațeg is undeniable, given the extensive areas of pasture and arable land. However, vegetal and animal sector productivity is deficient. Forest harvesting or industrial exploitations underwent a significant decline after the 1989 revolution. Currently, the secondary sector is represented predominantly by economic facilities in the food and textile industry. Whether we are talking about the natural or built heritage, the lack of tourism promotion, state of intense degradation of many tourist attractions and the lack of local package tours are just some of the problems faced by tourism in Hațeg. With a spatially well represented access infrastructure (except the aerial infrastructure), the Land of Hațeg underwent a substantial loss last year in terms of number of railway passengers. This loss is caused both by decommissioning of the Sarmizegetusa Subcetate railway sector, and by the present restructurings in the rail passenger and freight transport at national level.

The SWOT analysis of the economic features of the Land of Hațeg highlighted the need to reconsider the economic activities at regional level, not local, to relaunch long-established activities, to launch marketing strategies for local products and services, and a territorial marketing within the regional and local associations (GAL Land of Hațeg Micro-region - Ținutul Pădurenilor, dinosaur Geopark, municipalities, etc.) by creating and promoting a regional brand of the Land of Hațeg.

## **CHAPTER 6. THE FUNCTIONALITY OF THE LAND OF HAȚEG TERRITORIAL SYSTEM**

By all its features, the Land of Hațeg is a functional region with a partially preserved mental space, with real investment possibilities within a project area. The research findings confirm the two initial hypotheses, namely:

- a) **The Land of Hațeg meets the attributes for a viable project territory**, as shown by synthesis of 4 development models (which use all the long-established elements of the region and the strengths of the current situation) – *1) the conservation of Hațeg identity elements, 2) efficient use of historical heritage, 3) the focus on the agricultural specificity of the Land of Hațeg and 4) the conservation of its natural heritage by encouraging sustainable economic activities;*
- b) The resulting analyses and drawings may constitute useful materials for the decision-makers (public institutions, NGOs, spatial planning experts).