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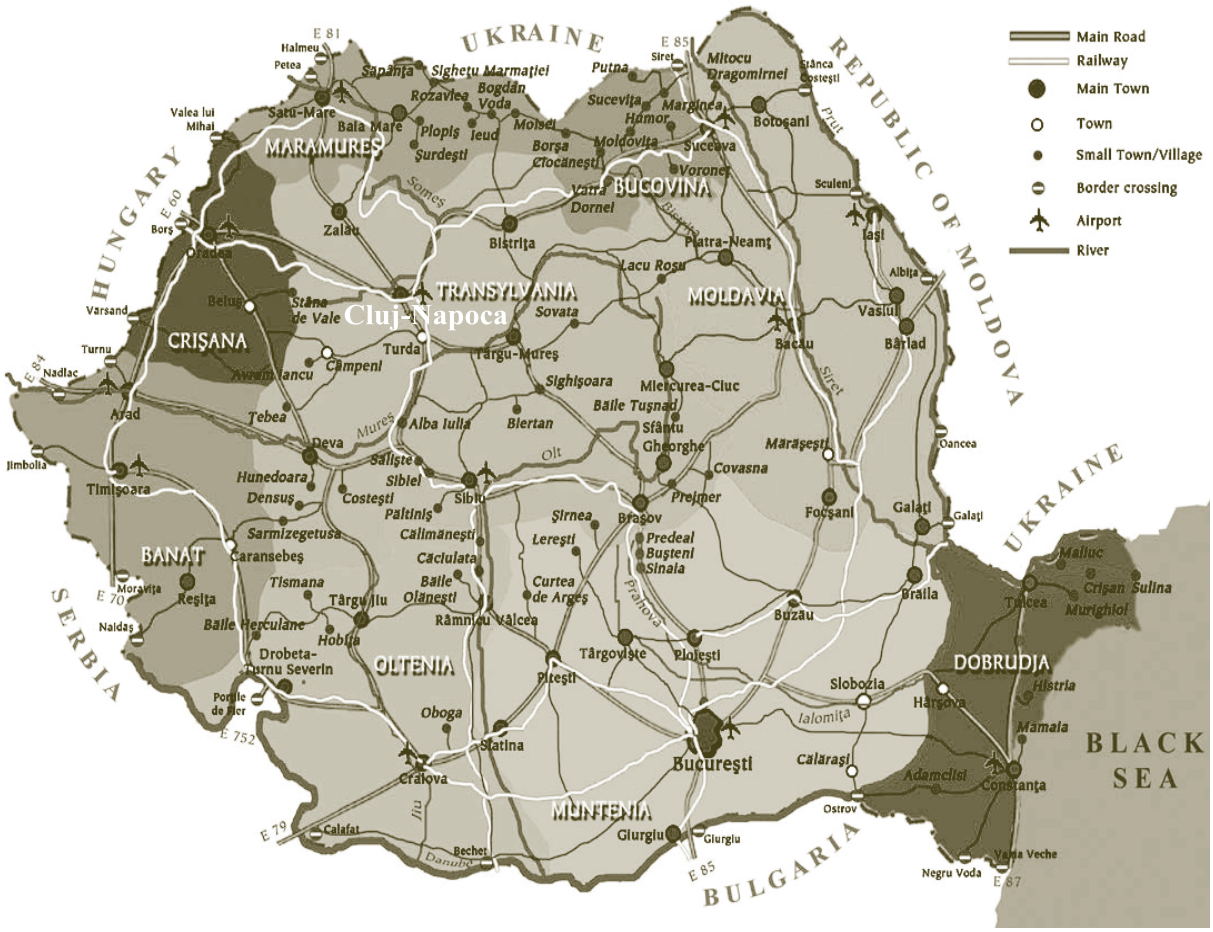

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GEOGRAPHIC MONITORING AND MANAGEMENT. A PARADIGMATIC APPROACH

I. MAC[1], MARIA HOSU[1]

ABSTRACT. - Geographic Monitoring and Management. A Paradigmatic Approach. We generally consider that we operate with "present"; in fact, we are analyzing and forecasting future. Our possibilities to analyze future are restricted and we do not know how to think rationally and productively about it, because we are not accustomed to analyze it integratively and holistic. This is the reason why geography, a predictive science par excellence, is required to shift from the incipient phase of things observation to a further step of analyzing geographic facts' structure, function and role within geosystems. The number of possible succession ways implies a process of carefully monitoring the events, while the determination of the geographic facts value requires both an integrative and a specific management. From this point of view, an important discrepancy is set between the ancestral practices to follow up "the sky and the earth" and the needs for exactness of nowadays phenomenology imposed by modern technologies. Thus, interpreting space, time, processes, phenomena or places, necessitates a monitoring process based on models and on performance techniques. The operational-realistic geography turns into a prospective-forecasting one, with increased efficiency in fitting to society needs. The reflexive monitoring of human actions within communities may constitute an important element in discerning or interpreting aim hitting ways.

Keywords*: change, monitoring, management, geographic trend.*

1. THE NEED TO UNDERSTAND CHANGE

"To have the eyes glued to something" may be an answer to a determination. Wide eyes opening to everything surrounding us characterized human beings from their very beginning. This action, defficitary analyzed from the scientific point of view, became a necessity of the human existence. Unfortunately, geographers were unable to capitalize this aspect to their benefit. In the chapter entitled "Geographic Imagistics", it was underlined the compulsoriness of answering to a necessity. The processes of assessing, optimizing or amending the geographic facts could not be completed without passing from the empirical observation of change to the penetration into its very essence. Perceiving and understanding the environmental trend become landmarks of the elaborated strategies with the purpose to avoid the negative effects of natural and human extreme events.

The geographic dynamics is in fact geography itself, because in the same world or reality we discover new facets or images, new states or situations.

The need for prediction gives rise to some questions about dynamics and transformations: a) which are the further implications of actual geographic situations, of actual environmental problems related to resource consumption and development? This

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aspect demands an explanation of the past events as well as a prediction of their future evolution. (postdictum); b) which is the rate of the actual geographic changes? This aspect supposes a good understanding of the actual processes as well as the geographic systems dynamic state; c) what could happen from the geographic point of view in an area or another, what if places are unequally developed and induce territorial conflicts? Prediction becomes an imperative in such a situation; d) could human intervention consequences act in a positive manner in controlling geographic states dynamics and if yes, where could they?

Such questions prove that we have to shift emphasis from understanding past changes to analyzing present and predicting future. An adequate management and monitoring is required in order to control, even if only relatively, change's sense and movement.

2. GEOGRAPHIC MONITORING

Among the reasons that determine the difficulty in understanding, monitoring or managing geographic changes, we could mention: geosystems' complexity and complex and multiple possible responses; geographic systems' uniqueness, implying singular manifesting ways and effects; systems' sensitivity to change; convergence and divergence as change aspects; space and time scales, influencing in a negative way the monitorization process, because different time intervals require different methods and techniques, and obviously, different results.

The methods and instruments used in change assessing are strongly related to the application field: geomorphology, hydrology, meteorology, landscape analysis, demology, tourism, economy etc. An integrated monitoring is but required in nowadays geographic investigation.

There are both common and specific monitorization methods. The repetitive topographic surveys are frequently used and applied with significant results in various geographic fields (geomorphology, hydrology, sedimentology).

Reference markers are largely used in order to monitor the change rate (example: soil erosion, rivers' channel transversal profile).

Monitoring equipments (extensometer, piezometer, hydrographic level gauge, meteorological stations etc.) that are necessary in analyzing various processes of the geographic dynamics.

A monitorization process based on markers and places, with special equipments installed in experimental fields.

Repetitive satellite images, used when referring to large areas and complex issues (desert dunes' movement, wild animals' spreading, continental glaciers' movement etc.). Through these images, world could be taken integrative, as a whole, or on separate sequences (Cosgrove, D., 2003).

Not pretending to exhaust this technical issue, we have just intended to stir further detailed elaborations and syntheses that would constitute the foundation of the specific and integrated geographic management.

The projects gather all the sequences in any situation evolution, helping the social actor to fulfill his purposes. In this way, a project is "an objective construction of human mind" (Hagerstrand, 1982).

3. THE GEOGRAPHIC MANAGEMENT

The need to arrange the surrounding territory determined men to act as managers from their very beginning. The sense of this notion has gradually changed from the "art or science to conduct", implying ideas, theses, objectives, methods and practices to a strictly economic meaning, that of business administration. This notion is arrogated to the engineers Fr. Taylor (1856 – 1915) and H. Fayol (1841 – 1925) and belongs to the organization of the economic environment (controlling and directing work in order to get maximal efficiency).

P. Gâștescu (2000) stipulates two meanings for the term "management": "in a restricted way, management is reduced to current and operating leading in which subalternates accomplish the manager's intentions. To a larger extent, the term management refers to conducting as a complex human activity that implies conduct, administration and managership". Details about management content and significance are given with prevalence in economics papers, other aspects being also set as the relation between management, administration and arrangement, management principles or management application fields. The systems theory is usually evoked when trying to explain the managerial act.

The second chapter of the present work focuses on systems' nature and functioning. Abbreviating, the advantages of a systemic approach are: allows interrogatory considerations; facilitates the determination of territorial realities functions and relations at various scalar levels; offers the possibility to dimension the natural and socio-economic processes according to the followed purposes; facilitates identification of the geographic states (equilibrium, disequilibrium, homeostate, homeoretic) and of possible tendencies; provide managers with an integrative thinking that would help them in elaborating plans and projects based on connections and synergism by using unitary and specific criteria.

In the above mentioned papers, especially in those of H. Fayol (1841 – 1925), the process of management is stipulated to have five important functions: **planning, organizing** (institutional and operative), **command**, through which the objective is put into action, **coordination,** through adjustments, connections and common efforts, **control**, the action being supervised and directed according the established conditions and orders. The management attributes (figure 1) dimension and regulate the whole planning assessment process at various organizatorical levels (knowing, processing, controlling, decision-making etc.).

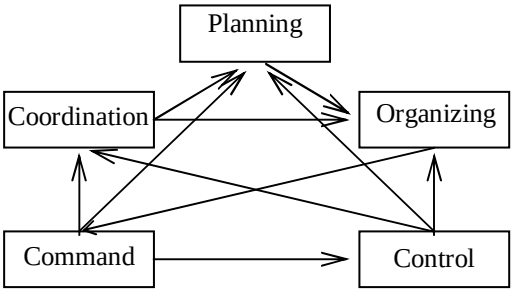

Fig. 1. Management's Attributes.

It is rather difficult to set the geographic management features because of the complexity of issues, responsibilities or factors it implies. As a general consideration, we could assert that four major phases are included into the environmental management process: problem's **identification**, planning project **formulation**, **implementation** of the proposed project and project **assessment** through specific methods.

Politics or projects could be applied at different spatial or time scales; they could imply different organisms and agencies, and also different interests.

The managerial responsibilities depend on the approached temporal or spatial scales, as well as on the complexity of the focused issue. A hierarchy could be established as regarding the actions and the implied actors (organizations, agencies, social groups). The management process is not an isolated action, but an interdependent one, a central society's function.

The management process can be approached from various points of view: structuralistically, organistically, logistically, historically, chronologically, globalistically, on the one hand, and integratively, on the other hand – morphologically, typologically, functionally, interdisciplinary and systemical.

The main role of geographers in the territorial management is to provide various users with scientific information. In many cases, geographers can consistently contribute to the database elaboration, the gathered data being not only numerical (statistical), but processed (cartographical materials) and elaborated (descriptive). Geographers could also participate, in a direct way, through the actions they initiate, through well prepared researchers or through the promoted ideas.

The geographic managerial field, no matter where it manifests, is polifunctional and comprises: administration of various states, sustainable administration of resources in correlation with future generations' needs (sustainable development), elimination of material and energetic waste, development prediction at various levels, individual, local, regional or global.

Through this paper, we have intended to determine a shift on emphasis from a "manufactured" management (enterprise management) to an "integrative" one at all approaching levels (individual, local, regional, global). We hope that new studies will arise in order to put the foundations of a solid and complex geographic management.

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CLIMATIC AND ANTHROPOGENIC CONDITIONS IN THE TRANSYLVANIAN DYNAMICS OF THE LANDSCAPES

I. IRIMUŞ[1], V. SURDEANU[1], D. PETREA[1], I. RUS[1], P. COCEAN[1], O. POP[1]

ABSTRACT. – Climatic and Anthropogenic Conditions in the Transylvanian Dynamics of the Landscapes. The reconstruction of the geographical landscape and of its spatial functions requires, on the behalf of the scientist, an inventory of all the factors with impact in structuring the landscape: geological, geomorphologic, climatic, hydrologic, biopedogeographic, human-made, geopolitical, cultural-historical, etc. The impact of the climatic and human-made factors is relevant for the Transylvanian factors through a substitution of the landscape functions during the last century. From a predominantly agrarian exploitation of the Transylvanian space (cultivation of cereals, technical plants, vegetables, pasturage, fishing), it turned to an increasing exploitation of construction rocks (lime stones, tuffs, sands and gravels) and wood (deciduous in particular), and also to a touristic development of the salty regions (balneal, climatic, cultural-historic and sport tourism). The methodology used in elaborating this paper comprises: an analysis of the climatic data on time series; reconstruction of the land usage systems; an analysis of the river beds dynamics as a result of the increasing exploitation of gravels and sands; an analysis of the human impact territorial models. The correlation between these precipitation values and the geomorphic processes in the Transylvanian environment, arguments the changes in the flowing regime of the rivers, the activation of some old landslides or generation of new ones, the elimination from the productive circuit of large agricultural and forested territories. The increasing of the primary resources exploitation especially that of wood and gravels, led to a major destabilization of the river-slope system, with long-term consequences. The materialization of impact is felt in the plane spatial dynamics of the Transylvanian river channels, in the mobilization on slopes of the deluvial materials, in the intensification of the linear erosion, in a decrease of the agricultural and forested areas, in a ruderalization of vegetation etc.

Keywords: *climatic conditions, geomorphological processes, anthropogenic impact, environment, Transylvania.*

1. INTRODUCTION

The Transylvanian space is temporarily articulated through three sets of components: ***the substrate, the hydro-atmospheric environment and the biotic component.*** The substrate is the product of a complex paleogeographic evolution. The structure of the fundament is a result of the Paleozoic and Mesozoic tectonic processes, while the morphology is given by the Neogene's deposits (clays, gyps, salt, tuffs, lime stones), that, through their physical, mechanical and chemical conditions give hints about the sedimentation regime. The tectonics and neotectonics has bothered these deposits, imposing a relief of domes and salt pleats, with the interfluves corresponding to the anticlines and to the diapiric brachianticlines. The valleys, the corridors and the depressions are located within the diapiric synclinals or

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within the intradome or interdome cuvettes. The subsidiary areas suggest an unfinished morphogenetic cycle, reflected in the morphodynamics of the slopes, of the river channels and of the quaternary lakes.

The contemporary modeling corresponds to the Pleistocene-Holocene sculptural matrix, taking the climatic influences and the plane spatial changes induced by the human factor, mirrored in new relations between the components of the geographic landscape.

The Transylvanian geographic landscape is today defined by resilience to the local regional and global climatic changes, and also by a vulnerability to the geomorphic, hydrologic and human-made processes.

The analysis of the geographic landscape, especially of its spatial functions, requires on the behalf of the scientist to *diagnose* all the factors with impact in structuring the landscape (geologic, geomorphologic, climatic, hydrologic, biotic, pedogeographic, human-made, geopolitical, cultural-historic) and to long term *predict* the evolution of the geographic landscape, that strongly depends on the way of relationing between the geosystemic and sociogeosystemic components. The changes that have occurred during the last 100 years in the Romanian land usage system reflects, on the one hand, the modification of the human communities request towards the environmental offer, and, on the other hand, the climatic evolution.

The impact of the climatic and human-made factors is relevant for the Transylvanian factors through a substitution of the landscape functions during the last century. From a predominantly agrarian exploitation of the Transylvanian space (cultivation of cereals, technical plants, vegetables, pasturage, fishing), it turned to an increasing exploitation of construction rocks (lime stones, tuffs, sands and gravels) and wood (deciduous in particular), and also to a touristic development of the salty regions (balneal, climatic, cultural-historic and sport tourism).

2. METHODOLOGY

The methodology used in elaborating this paper comprises: an analysis of the climatic conditions and of the vulnerability of the Transylvanian Depression; an analysis of the river channels dynamics as a result of the increasing exploitation of gravels and sands; an analysis of the slope morphodynamics (the deforestation effect and the torrential character of the slope flowing); reconfiguration of the Transylvanian human habitats (including also the reconstruction of the land usage systems) based on significant case studies.

3. CLIMATIC ASPECTS AND TERRITORIAL VULNERABILITY IN THE TRANSYLVANIAN DEPRESSION

The geographic location of the Transylvanian space (Fig. 1), as an intra-Carpathian area, at the shelter of the Apuseni Mountains (acting as an orographic barrier for the western circulation) and of the Eastern and Southern Carpathians (the first moderating the penetration of the continental air masses coming from East and North- East, while the second ones, also called the Transylvanian Alps by Emmanuel de Martonne, limit the penetration of the Mediteranean circulation from South-West), defines the main characteristics of weather and climate in the Transylvanian Depression and determines a shelter topoclimate.

The average temperatures of the extreme months are quite uniform throughout the depression. *January* presents average values of the of -3 - -4 degrees C in the Western half and along valleys, and -4 - -6 degrees C in the Eastern and Northern part

and *July*, the warmest month, has average temperatures of 18-20 degrees C, with some exceptions in the submountaineous depressions from East and South, with an average of 16-18 degrees C.

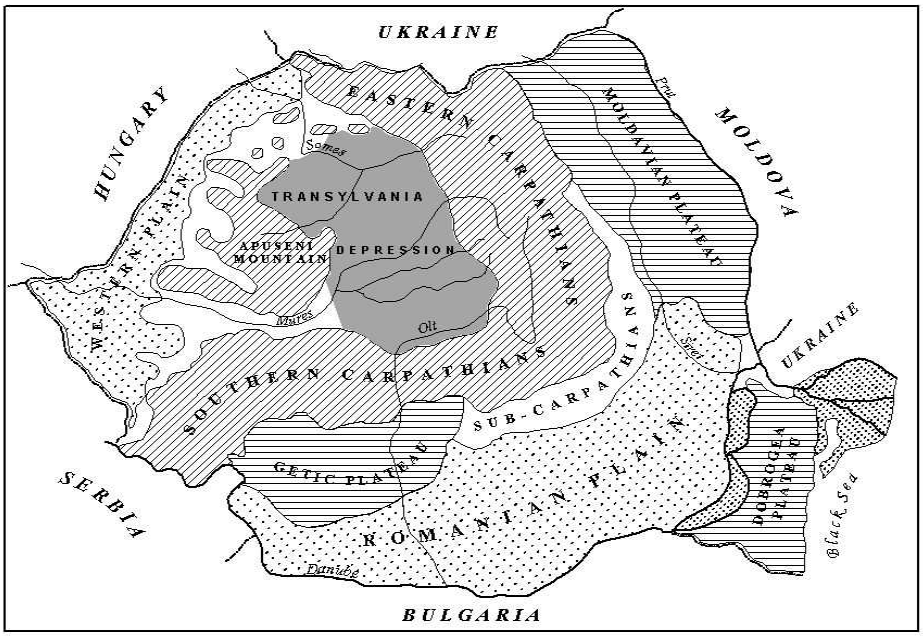

Fig. 1. Geographical position of the Transylvanian Depression.

The shelter topoclimate is indicated by the predominance of the atmospheric calm (> 50% from the total observations made between 1961 and 2000) and the generally decreased wind speed (1. 6 – 2. 0 m/s), higher values being registered only in the Southern and Southwestern parts (2. 1- 2. 6 m/s).

The atmospheric precipitations (daily, monthly, semestrial or annual), through their regime, articulate the morphodynamics of the landscape. The average multiannual amounts of precipitations vary between 500 and 700 mm/year; values of 500 mm/year and even lower were registered in the Southwest, West and center of the depression, and 700 mm/year in the Northeastern part of the region. The average annual sums of precipitations confirm the same tendency, respectively a growth of the amount of precipitations from West to East and from North to South, process related to the possibility of reformation of the atmospheric fronts in the center, after the descendance on the eastern side of the Apuseni Mountains. The weather observations made between 1961 and 2000 confirm strong deviations referred both to the surplus or deficit of precipitations. The highest registered values have frequently surpassed 800 mm/year and even 900 mm/year in the eastern and Southern part of the depression, while the lowest values decreased much under 500 mm/year, regional values of 250-260 mm/year being registered in the center and Southwest of the depression.

The average values (monthly, semestrial, annual) of temperature and precipitations, could not offer a complete image of the changes induced in the regime of the slope or channel flowing, or of those that affected the ecosystems and the pedosystems, respectively, it couldn't surprise the vulnerable aspects of the Transylvanian territory to the manifestation of the climatic factors. The deviations from average n-periodical variations confer specificity to the evolution of the goemorphosystems and ecosystems.

The analysis of the variation of the precipitations amounts (1961-2000), done with the help of the *cumulative curve for weighted anomaly standardized precipitation* (WASP) (Fig. 2) that is used for determining the fluctuations, respectively the excess or deficit of precipitations (in air or soil), highlighted that the analyzed spell started with a deficitary period generalized on the entire Transylvania (1961-1965), being followed by an accumulation period (1967-1985).

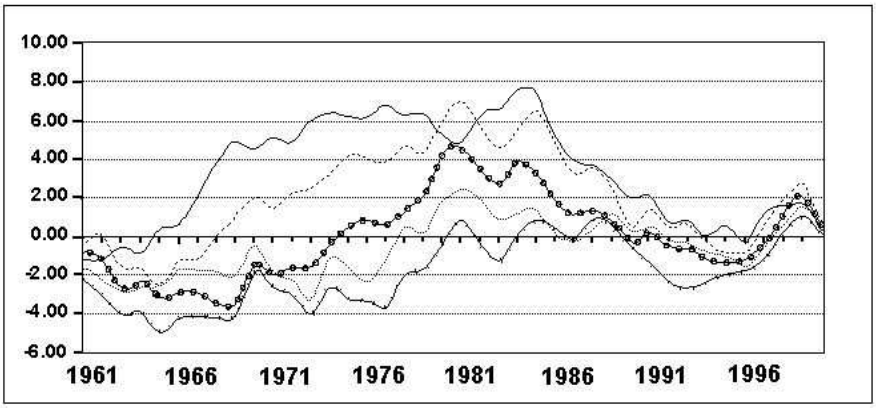

Fig. 2. Cumulative curve for weighted anomaly standardized precipitation (WASP) for the values registerd at the meteorological stations in the Transylvanian Depression (after Croitoru, 2006).

The curves have started their descendance (decrease of the precipitations exceeding) since 1986 (Fig. 2), maintained their tendency between 1986-1996, then following a short spell of growth (1996-1999). Starting April 2000 the exceeding precipitations start to decrease, for the installation of a dry period, whilst by the end of 2000, the values are close enough by the threshold of 0. 00. The WASP values highlighted various climatic annual spells on the point of view of the precipitations inputs: years with pluviometric redundancy (30. 4%), with curve values of more than 0. 99 and which imply a certain level of risk due to the surplus; droughty years (30. 2%), that implies a risk due to the deficit, their corresponding curve values being less than -0. 99; years without a pluviometric risk (39. 4%), when the curve values vary between -1. 0 and 1. 0. In the analyzed period, the frequency of the risk due to surplus is much higher than the one due to deficit. Even if with lower incidence, the risk implied by the rainy periods (June, summer or spring in the semestrial analysis), could determine important damages. The analysis of the maximal intensity of the rainy periods points out the Northern, Eastern and Southeastern parts of the depression as reaching the highest values.

The analysis of *the maximum amount of precipitations in 24 hours* emphasizes that the highest frequency is registered during summer (June, July, and August). If the analysis is extended to longer periods (1851-1997), we observed that the amounts and frequency of the fallen precipitations in 24 h were much higher than in the case of shorter periods (less than 40 years)(Fig. 3). The probability under which the maximum amount of precipitations in 24 h could be reached shows that for a recurrence period of one year the probability for precipitations under 21 mm/24h is of 99. 9%, while for one of two years the probable amount of precipitations is 5. 7 times higher. For return periods of 10 to 200 years, or even longer (1000 years), the values lie between 52. 9- 86. 6 mm/24h, these data being registered at the Turda weather station, in the Western Transylvanian Depression.

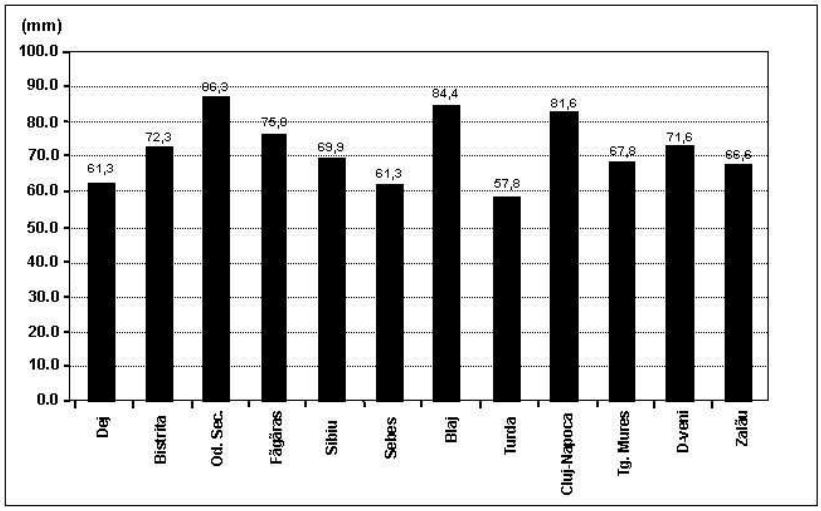

Fig. 3. Amount of fallen precipitations in 24 de ore (1961-2000, after Croitoru,2006).

The Transylvanian depression area is *vulnerable to the manifestation of the weather and geomorphic processes,* through the favor of some torrential rains with high intensities and short length and through the brittleness of the deposits. The shaping of the hillsides through the linear erosion (rain-wash**,** gully erosion, torrents) and area (landslides, landfall) forming flash-floods represents direct or indirect consequences of the manifestations of the torrential raining. The depression joins the steps (Fig. 4) of low vulnerability, in the center, average vulnerability in the north west and south east of the depression and on a narrow strip of the western marginal region, whilst in the southern regions, eastern and north eastern present an average to high vulnerability, according to the exposal of the hillsides remaking the fronts and the orographic convection.

The contemporary modeling corresponds to the Pleistocene-Holocene sculptural matrix, taking the climatic influences and the plane spatial changes induced by the human factor, mirrored in new relations between the components of the geographic landscape.

The methodology used in elaborating this paper comprises: an analysis of the climatic conditions and of the vulnerability of the Transylvanian Depression; an analysis of the river channels dynamics as a result of the increasing exploitation of gravels and sands; an analysis of

the slope morphodynamics (the deforestation effect and the torrential character of the slope flowing); reconfiguration of the Transylvanian human habitats (including also the reconstruction of the land usage systems) based on significant case studies.

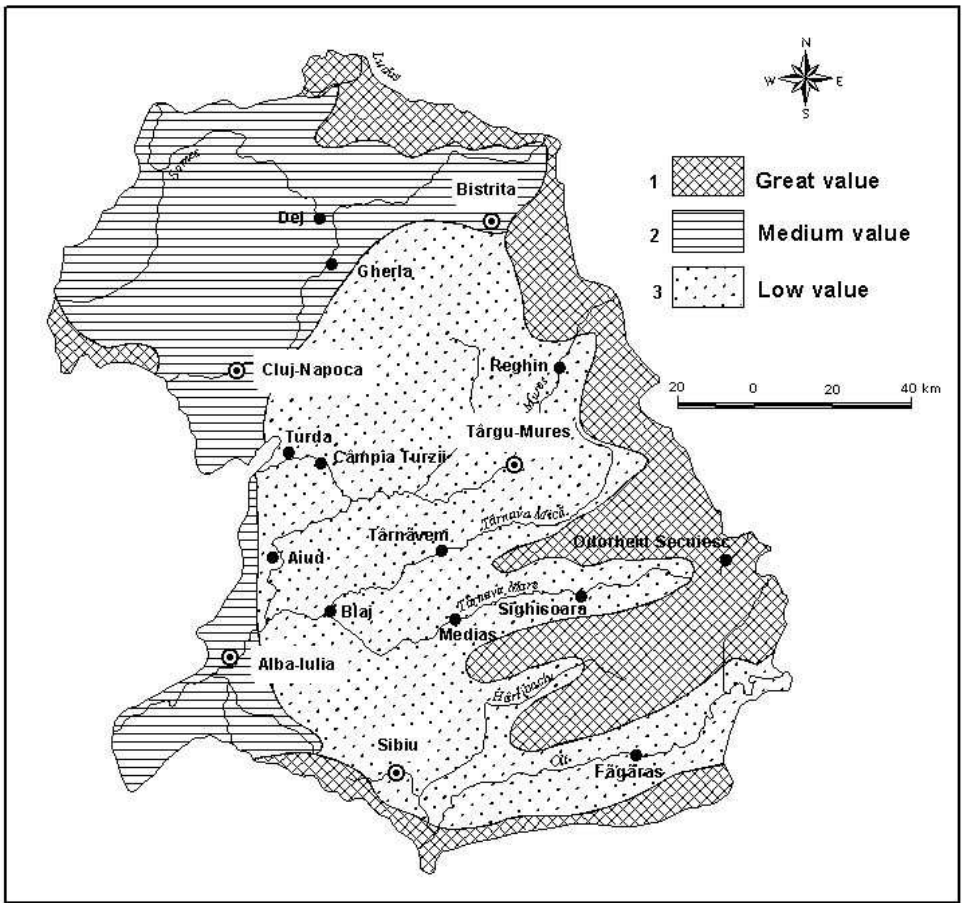

Fig. 4. Landscape vulnerability induced by meteorological and geomorphical processes.

4. RIVER CHANNELS MORPHODYNAMICS AND THE EXPLOITATION OF THE RIVER AGGREGATES

The plane-spatial rivers channels dynamics has been analyzed with the help of some satellite images, while the transversal sections morphodynamics was analyzed through topometric. The assessment of the solid discharge is reflected on the *river aggregates reserves and renewal conditions up to 2000* (fig. 5).

The reconstruction after the Second World War and the electrification process of our country coincided with the Romanian socialist years. The energetic plans included the hydro-technical arrangements in the morphohydrographic basins of Somesul Mare and

Somesul Mic, Mures and Olt, while those for the reconstruction implied an increasing in the exploitation of soil and subsoil resources. The ballast-pits the river aggregates necessary in the construction of dams and inhabiting buildings. The dams stored the alluvionary materials transported by rivers and torrents, regulated the downstream alluvial charge, the result being a new configuration of river channels induced by a reduction or sectioning of the meanders, by the modification of the individual properties natural limits, or sometimes

Fig. 5. Beclean. Exploitation of the river aggregates.

of the border lines separating regions or countries. Nowadays we are facing an intensification of the processes within which the natural factors interfere with the human-made ones, especially when referring to river aggregates exploitations. An argument in this respect is the tripling of the ballast pits functioning in the depression, within a context of deficitary environmental regulations that do not stipulate the rapport between the in situ natural resources and the environmental stability.

An analysis of the regional "market" of river aggregates indirectly led to a hierarchy of the impact of these resources on the economical evolution of the counties and regions (North-Western and Central ones). The Bistrita-Nasaud, Maramures and Satu-Mare counties benefit from extra amounts of river aggregates, while Cluj, Harghita and Covasna are deficitary from this point of view.

While the hydrotechnical dams segmented the longitudinal river's profile, the aggregates exploitations modified the transversal one and the flowing regime, being considered as birth points for local erosion and also modifying the flowing on the upstream tributaries. Stimulated by increases of the torrentiality precipitations index, of the acid rains chemical aggression, of the forest exploitation correlated with an agricultural abandon, the changes in the channel flowing regime were transmitted to the slope flowing.

The enhancement of the erosional processes within the hydrological basins of the rivers of order I and II (Horton-Strahler) was correlated with the increase of the forest exploitations, deforestations or abandon of the fruit-trees and grapes plantations.

5. THE MORPHODYNAMICS OF SLOPES AND THE RECONFIGURATION OF THE HUMAN HABITATS AREA. STUDY CASE: LUPENI - SIMONEŞTI, 23-25 AUGUST 2005; TÂRLIŞUA, 20 JUNE, 2006

On the basis of a droughty period installed at the end of year 2000 (the ASPP values got very close to the 0,0 threshold), between 2000 and 2007 the Transylvanian geographical space was affected by a serial of extreme processes and phenomena, the freshets and the earth flows causing the greatest material damages and human losses.

The report of the Ministry of the Environment and of Water Administration confirm that the freshets that took place in 2005 had surpass- regarding the interval of happening (February-September) and the affected areas- the ones recorded in the last 100 years. The freshets produced in 2005 affected 1734 localities, and the total value of the damages was estimated at 6 milliard lei (1,796. 407. 100 Euro). The analyzed cases from Transylvania area confirm the cumulated effects of the exceptional climatic manifestations and of the uncontrolled human interventions in the morph-hydrographical basins affected by freshets, running mud and earth flows.

5. 1. Lupeni- Simoneşti, 23-25 August 2005

Lupeni and Simonești towns are located in the Basin of Feernic (Pârâul Alb or White River), second degree Horton- Strahler subunit in the morph hydrographical Basin of Târnava Mare. This presents the following average, climatic and morph hydrographic parameters:

- average multi annual precipitations: 550-560 mm in the inferior and middle basin (Simonesti 568 mm) and 750- 900 mm in the superior basin;
- average multi annual precipitations in August: 72 mm;
- the surface of the hydrographic basin: 199 sq km; the length of the river: 33 km; the altitude of the springs: 901 m; the altitude of the confluence with Târnava Mare: 385 m; average slope: 15. 3 m/km; the slope of the superior course: 40-50 m/km; the slope of the inferior course: 5-10 m/km;
- the average multi annual trickling: 198 mm (48 mm represent the underground trickling);
- average multi annual Q: 0. 909 m3/s.

The freshet produced in the basin of Pâraul Alb or Feernic, because of the precipitations from 23 August 2005, has been configured by the following climatic and an tropic conditions:

- the precipitations were determined by the cyclic genesis that started on the 21st of August 2005, confirming a turbulence field and high humidity, from a preexistent cyclone; the cyclic genesis has been caused by the sum of two turbulence centers of the air, well underlined at the level of the surface of 500 hPa (Fig. 6 a,b);.
- the forming anticyclones from the east stopped the movement of the cyclone to the east, conditioning in the stopped cyclone, the occlusion of the systems of fronts and the forming of some convergent lines and ways for movement with high humidity;

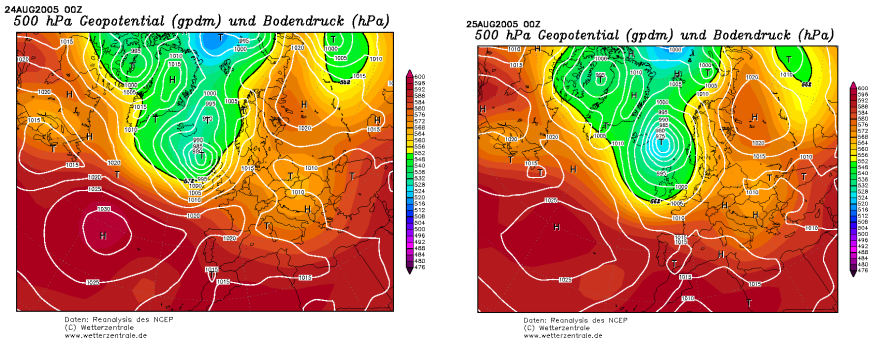

Fig. 6. a,b. The 500 hPa baric field evolution above Europe in august, 24 and 25, 2006.

- the precipitations fields acted through storms and hail in the Basin of Feernic; between 16:30 and 18:30, the precipitations had the value of 201 mm /24. 08. 2005, at Odorheiu Secuiesc, overtaking 3 times the multi annual value.

- the Qmed of August registered at Simonesti hydrometric station was 5. 99 m3/s, 13 times larger then the multi annual Qmed of August (0. 455 m3/s)

- the deposit of the wood material for fire on the superior course of Feernic river during the summer and the under gauging of the bridges lead to the rise of the level of the shock freshet (Lupeni, h=7. 6 m) (Fig. 7).

Fig. 7. Flood wave level in the Feernic River basin at Lupeni.

The freshet affected 1388 buildings from Lupeni, Şimoneşti, Şicasău, Zetea on the superior course of Feernic and registered the following losses: 3 deaths (Lupeni); the destruction of about 40% from the buildings in Lupeni, Şimoneşti, Şicasău; the entire destruction of 21 bridges and 109 footbridges.

5. 2. Târlişua, the 20th of June 2006

Târlişua town is situated in the morpho- hydrographic basin of Ilişua Valley, right tributary river of Someşul Mare, with its springs on the southern hillside of Ţibleş Mountains, at 1200 m altitude. Ilişua is a second degree on the Horton- Strahler scale river, with a morpho-hydrographic basin opened in the north east of the Transylvanian Depression.

Fig. 8. Torrents developed on steep cuestas at Târlişua, 2006.

The parameters that define the morph hydrographic character of the basin confirm a network of dentritic type with low drainage, the torrential organisms belonging to the first degree on the Horton- Strahler scale, that are engraphed on fronts of cuesta (Fig. 8) and present medium slopes of 15-35 m/km and their length is under 10 km. Between their springs, located on the southern hillsides of Paltinis Mountains, at 1200 m altitude and the confluence with Somesul Mare at 378 m, on a way of 52 km, there is a registered average slope of the trickling of 15. 38 m/km. The freshet from June 20th 2006 started on a synoptic configuration (Fig. 9) defined by a field of cyclonic turbulence, with a remnant character, very wet. The quantities of precipitations were appreciated (in the absence of a weather station in the basin of Ilişua) at over 280 mm, in less than 2 hours.

The absence of the compact grass and the presence of some areas with massive deforestations, following the intensive exploitation of the wood (which trained by the freshet functioned as genuine skull crackers (Fig. 10) in destroying the buildings), themselves in the main causes of the losses made by the freshet: 10 deaths, 3 missing, 23 households totally wrecked, 480 partially wrecked; the serious destruction of the roads, of the special infrastructure (electricity, telephone), flooding and clogging fountains, flooding and destroying the agro cultures; activating or starting some terrain slides (684 ha affected); the sentiment of insecure through the people and starting the state of psychosis vis-à-vis the myth about "The Apocalypse".

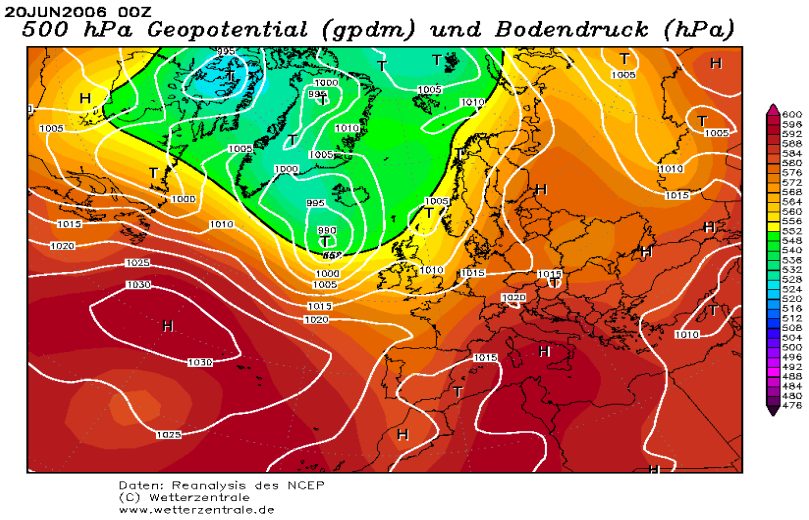

Fig. 9. The Cyclonic turbulence field that determined the flood that occured at Târlişua in 20 June, 2006.

Fig. 10. Tree trunks river-borned by the flood at Târlişua.

6. CONCLUSIONS

The climatic manifestations perceived through the context of the modifications or changes in the world's climate, spreads energy capable to irreversibly affect the equilibrium between the landscape components on the regional, local, but also global scale. To the climatic conditionings join the an tropic ones, that can sustain the developing of some risk processes or phenomena, very dangerous, in the absence of some correct measurements taken in the arrangement and administration of the territory resources, in the way of durable development.

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GEOGRAPHICAL ANALYSIS OF THE HIGHER EDUCATION INFRASTRUCTURE IN ROMANIA

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ABSTRACT. – Geographical Analysis of the Higher Education Infrastructure in Romania. **A**ny inhabitant of Romania, according to the Constitution, must get equal access to any form of higher education, without very high cost discrepancies. It's about not only an equilibrated distribution of universities, but also their similar distribution according to the science fundamental fields. The analysis made on territorial distribution evidences a first distortion factor: the particular concentration of the university infrastructure in 9 centers, representing more than 3/4 of the total number of students and of the teaching staff. At the same time, a more detailed study leads to the idea of individualizing two important inequities in the medical and, respectively, agricultural field. The analysis of the higher education infrastructure at the level of the university centers has focused on the number of students per a building, the ratio between the general surface area and the useful area per student, the oldness of the university space and the structure of the university spaces (education, auxiliary, technical and administration, and spaces with other destinations). A deeper view on the education infrastructure of the university level is made by using the number of students per seminar room or laboratory, the number of students per computer and number of INTERNET-connected computers. The last part of the paper is dedicated to the social infrastructure analysis. The conclusion is that despite all efforts made by universities, the level of the social infrastructure is less adequate: accommodation, reading rooms in hostels, students' canteens. The genuine problems at the level of the social infrastructure and cannot be solved by universities themselves, with their resources only, but by an adequate government policy in this direction. The attraction power of a university center is directly proportional to its size and implies a similar social infrastructure basis. According to the accommodation places, the national hierarchy evidences Bucharest – Romania's largest university center – by far the leader, with 32 632 places in 102 student hostels, representing 31.83% of the whole accommodation capacity at national level, for example.

Keywords: *higher education infrastructure, state and private universities, territorial differentiations, Romania.*

1. INTRODUCTION

The students' instruction level depends both on the training of the teaching staff and on the university structure. We used "infrastructure" in its somehow richer meaning and considered it from several viewpoints as related to the analysis scale. Thus, the following could be distinguished: a macro-spatial level, i.e. the endowment degree of the national territory with higher education institutions; a mezzo-level – pre-presented by each university center – that has a specific infrastructural structure depending on its respective place in the national hierarchy; and, obviously, a micro-level, i.e. university.

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2. CHARACTERISTICS OF THE UNIVERSITY STRUCTURE AT A MACRO-SPATIAL LEVEL

In our analysis, the macro-spatial level and the national one are synonymous. From the viewpoint of the university infrastructure, the former level considers the endowment degree with such institutions, taking into account the human potential to be educated and the regional requirements, as a function of the specific of these entities. Therefore, general elements, mainly represented by the number of inhabitants, are dealt with. According to the Constitution, any inhabitant of Romania must get equal access to any form of higher education, at a quantum of costs without very high discrepancies. Theoretically, that supposes not only an equilibrated distribution of universities, judged as an endowment element of the urban centers having a certain level or tradition in the field, but also their similar distribution according to the science fundamental fields.

The diagnosis made evidences a first distortion factor: the particular concentration of the university infrastructure in 9 centers, representing more than 3/4 of the total number of students and of the teaching staff. The Capital city holds three times more students than its due share, taking into account that it concentrates less than 10% of the country population. As Bucharest focuses a very high instruction potential and, as a rule, the representation functions of the Capital cities exceed the national limits even in the research or academic fields, such a share does not seem extremely high. However, in the latest 15 years the share has had a decreasing trend, from about 38% down to about 32%.

Besides Bucharest, other three centers concentrate a strong university infrastructure: Cluj-Napoca, Iaşi, and Timişoara gather more than ¼ of the total number of students. In those centers, the university structure is complex and includes several science fundamental fields: university, technical, medical, agricultural, and artistic. An analysis of the theoretical spaces of the above university centers indicates extremely high expenses for the accessibility of their potential students. In order to diminish such a concentration of the university institutions, some other centers have appeared and they are likely to become regional centers, in distinct historical areas (Craiova in Oltenia, Constanța in Dobrogea, Oradea in Crişana) or at the interference of the regional influences of other centers belonging to the former category (Braşov, Sibiu or Galați).

A more detailed study on the territory endowment with university institutions in specialized fields leads to the idea of individualizing two important inequities:

a) in the **medical field:** the extremely unequal endowment of the territory with such institutions or faculties is rather surprising. At the institution level, there exist three universities in the intra-Carpathian area (Cluj-Napoca, Timişoara, and Târgu Mureş), and two others outside it (Bucharest and Craiova). This discrepancy is even higher since other four medical faculties exist in other four university centers, all in the same intra-Carpathian area (Oradea, Braşov, Sibiu, and Arad – the last one private) whereas there is only one (Constanța) in the extra-Carpathian area. We can thus have a real image of the discrepancies in the access of the potential students to medical education. As the number of students in medical universities and faculties is constant from one year to another, we can estimate the real costs for a student in the Moldova area versus one in the center of Transylvania. The one in Moldova should have to go to Bucharest or to Cluj-Napoca (since the competition in Iaşi is very high), whereas that in the center of Transylvania has at least four options within a radius of less than 100 km (Cluj-Napoca, Sibiu, Braşov or Târgu Mureş);

b) in the **agricultural field**, the situation is slightly different, but the same discrepancies exist between the intra-Carpathian and extra-Carpathian areas, although in the latter the share of the active population employed in agriculture is much higher. The parity system defined by **two institutions of the same type in both areas** (intra-Carpathian – Timişoara and Cluj-Napoca; extra-Carpathian – Bucharest and Iaşi) **is not equitable** for at least two reasons: the population and the extra-Carpathian area are at least twice larger whereas the agricultural area has the same disproportion.

Conclusion: the state public education network has to be **optimized** in relation to **the population number and the need of the equitable access to university services.** Since, for the time being, the poorest historical areas are most disadvantaged (mainly Moldova), a coherent state policy should be applied for an equilibrated territorial endowment in the field of tertiary education. At least in the medical field a first step has been made: a Medical Faculty was set up in Galaţi, but it should be supported. Likewise, a third one should be established in the same area.

The existence of private universities has not diminished the gap; quite the opposite. On the one hand, the private universities were set up in great university centers, and on the other, they are more frequent in Bucharest and in the intra-Carpathian area. Likewise, they are quite numerous in the Iaşi university center, thus exploiting the unfavorable situation in Moldova: three state universities only. After a "flourishing" interval of the private education in that center, a declining one followed, generated by some private universities having serious problems before and after their accreditation and part of them having lost their credibility as well.

3. ANALYSIS OF THE HIGHER EDUCATION INFRASTRUCTURE AT THE LEVEL OF THE UNIVERSITY CENTERS

The town-university centers have at least one institution of higher education. The university infrastructure at the community level should be considered unitarily from several points of view. However, the high fragmentation degree in certain situations led to divergent interests and to creation of a nonfunctional infrastructure, implicitly. Hence, serious problems for local councils and for the management at the level of higher education, as well.

Since the idea of a unitary management at the locality level also involves a very clear image of the university structure, **the opportunity of establishing powerful institutions by merging some of the existing ones** is worth analyzing. However, such a fusion should not be formal, by the small, specialized universities shading into a larger one, but it should have a functional reason as well. Thus, mention should be made that important scientific progress was achieved in inter-disciplinary fields and such an institutional framework could create genuine conditions for bridging direct communication among research centers and professors in rather varied fields.

An analysis of the present infrastructure level in the university centers shows important differences as concerns the center dominant profile, but also the existence or non-existence of private universities. The state universities in Romania own 887 buildings with a total area of 2 300 685 square meters; their useful area is of 1 421 586 square meters. Considering the differentiated number of students, and also the spaces belonging to universities in the university centers, some differences appear. Thus, a more focused analysis on their causes should be made. Anyhow, **the average number of students per a building belonging to state universities is of about 310.** The indicator might be inoperable for a more detailed analysis, but it offers an image of the concentration degree of the students. Obviously, the number of the teaching staff and of the technical-administration one should be added so that one can have a fair picture of the crowd in those buildings (table 1).

Average number of students per building and the latter average areas per physical student

Table 1

University centre	Total no. students	Total no. buildings	Students/ building	General surface area	General surface area/ student	Useful area	Useful area/ student
Total	**274,905**	**887**	**310**	**2,300,685**	**8.4**	**1,421,586**	**5.2**
Bucharest	**76,764**	221	**347**	754,169	**9.8**	424,269	5.5
Alba Iulia	**2,038**	4	**510**	12,877	**6.3**	6,654	3.3
Arad	**1,705**	6	**284**	9,796	**5.7**	6,494	3.8
Bacău	**2,207**	6	**368**	12,848	**5.8**	8,110	3.7
Baia Mare	**2,477**	5	**495**	17,658	**7.1**	10,033	4.1
Braşov	**11,758**	25	**470**	84,917	**7.2**	50,632	4.3
Cluj-Napoca	**35,489**	192	**185**	335,823	**9.5**	210,344	5.9
Constanța	**6,396**	8	**800**	29,529	**4.6**	17,968	2.8
Craiova	**15,212**	24	**634**	86,978	**5.7**	62,444	4.1
Galați	**10,265**	28	**367**	85,840	**8.4**	51,352	5.0
Iaşi	**32,382**	129	**251**	325,150	**10.0**	201,403	6.2
Petroşani	**2,952**	11	**268**	31,093	**10.5**	20,941	7.1
Piteşti	**3,953**	10	**295**	39,025	**9.6**	33,636	8.5
Reşița	**1,157**	4	**289**	20,534	**17.7**	8,938	7.7
Sibiu	**6,844**	13	**526**	40,174	**5.9**	24,131	3.5
Suceava	**3,260**	7	**466**	17,818	**5.5**	11,896	3.6
Târgovişte	**4,171**	4	**1,043**	2,195	**0.5**	1,710	0.4
Tg. Jiu	**1,298**	7	**185**	11,126	**8.6**	4,774	3.7
Tg. Mureş	**4,988**	43	**116**	43,970	**8.8**	31,597	6.3
Timişoara	**27,076**	96	**282**	248,106	**9.2**	175,278	6.5

Source: Ministry of Education and Research; National Institute of Statistics.

Given the average number – 310 students/1 building – that seems rather exaggerated, the difference between the minimum and the maximum values is more than 900 students. In other words, the highest value, recorded in Târgovişte, exceeds almost 10 times the lower one in Târgu Mureş. It is worth emphasizing that all the big university centers, having a complex profile (Cluj-Napoca, Iaşi and Timişoara), have lower values than the national average. Bucharest university center slightly exceeds that average. Even a rough analysis of the row of values per university centers shows that the new ones, established following 1990, have recorded the highest values (Târgovişte, Constanța, Oradea, Sibiu, Alba Iulia etc.). Craiova university center, set up before 1990, is an exception since there are 634 students/ 1 building; another one is Târgu Jiu, established after 1990, with less than 200 students/ 1 building.

Much more correct information on the space allotted to one student is given by the ratio between the general surface area and the **useful area per student,** respectively. From this point of view, the best situation is met in the university centers Reşiţa (17.7 and 7.7 sq. m/1 student, respectively) and Petroşani (10.5 and 7.1) – both of them ex-university centers specialized in machine building and mining industry, respectively. The decrease of the students' share in the traditional fields, corroborated with the space excess – the former laboratories and experimental spaces – has led to such a high value. Close values appear for the Iaşi university center, where the Technical University, with its excess space, has contributed significantly.

Târgovişte university center is placed at the other pole with 0.5 sq. m/1 student, respectively 0.4. The value is so unbelievably small, that the source might have transmitted the data erroneously. Other small values: Oradea (3 sq. m/1 student), Constanţa (4.6. and 2.8) and Suceava (5.5 and 3.6). Lately, Oradea University has succeeded in taking over several buildings from ex-military units, has restored them and uses them as education spaces.

Oldness of university spaces. According to the total number of buildings, Bucharest occupies the first place with about one quarter of the total number of buildings at national level (24.92%). It is followed by the other university centers: Cluj-Napoca (21.65%), Iaşi (14.54), and Timişoara (10.82%). All of them have a long tradition. Almost all the other university centers have between 5 and 20 buildings. There are only three centers with less than 5 buildings: Alba Iulia, Târgovişte, and Reşiţa, with 4 buildings each, i.e. 0.45% of the total number of buildings.

Although the age of the buildings is often of no importance, for a better estimation of the present state of infrastructure it has to be revealed nonetheless. The data we were provided with show 5 construction intervals, with varied shares both at national level and per university centers (Table 2). At national level, the buildings erected in 1971–1990 represent the greatest share, followed by those from 1901–1950. Although a relatively long time has elapsed since 1990, only 6.9% of the area belonging to universities has been built on during this interval. The share of about 14% of the university buildings erected before 1900 is rather interesting as well.

The space fund older than 100 years predominates in the most recent university centers, mainly mediaeval towns having an important empty space reserve in their central areas, i.e. Alba Iulia and Arad, with a share higher than 3/4 and 2/3, respectively. The buildings erected in 1901–1950 are a characteristic of university centers from quite different geographical areas: Târgu Mureş (almost 80%), Craiova and Oradea (both with about 60%). All the spaces of the three universities in Târgu Mureş were built before the Second World War (the area built after the War represents 1% only).

The spaces built in 1951–1970 are dominant in four university centers, all small and only one with tradition: Petroşani. The others are Bacău, Târgovişte, and Reşiţa. The spaces built in 1971–1990 prevail in three university centers – generally small and relatively new. The city of Ploieşti belongs to the specialized university centers, being famous for its specialists in the field of oil industry. The buildings erected after 1990 prevail in the case of the Piteşti university center.

The great university centers having complex profiles own buildings from all the time intervals, but with differences in their shares. Thus, if 1971–1990 dominates in the case of Bucharest (when the Polytechnic extended its built space with about 63%), Cluj-Napoca is still dominated by buildings erected before 1900 (45% of the "Babeş-Bolyai" University buildings belong to that period). Iaşi university center developed mainly in 1971–1990 and

more than 41% of its buildings belong to those times. This share is given by "Gh. Asachi" Technical University – 75% of its buildings belong to that interval. Mention should be made that Iaşi technical university owns almost a half of the spaces belonging to the five state universities in that city. The 1971–1990 buildings in the Timişoara university center represent the same share (University of Agricultural Sciences and Veterinary Medicine holds the first place with about 93% such buildings).

Share of the spaces belonging to universities per building intervals

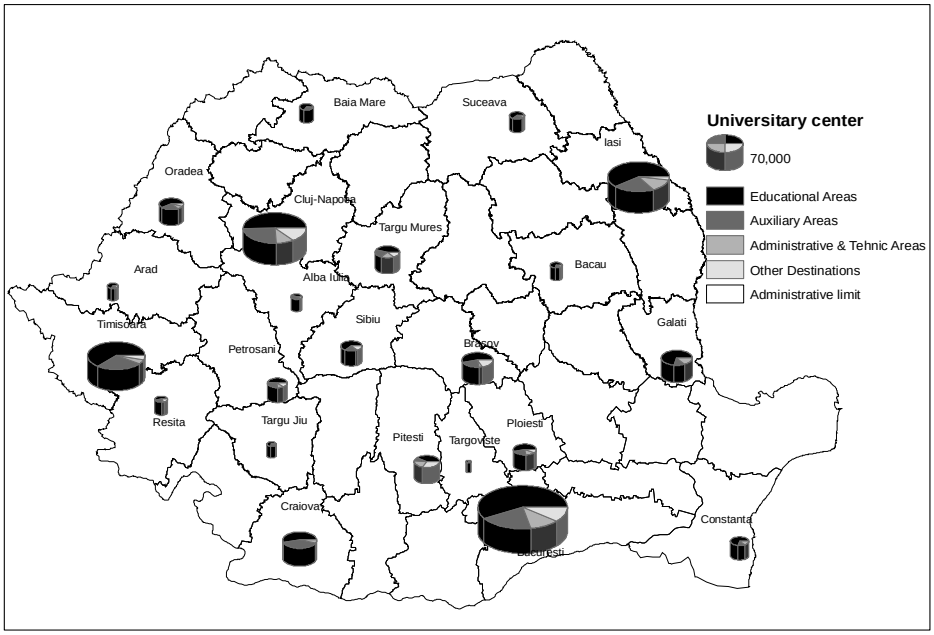
Table 2

University centre	Total area (sq. m)	Before 1900 (%)	1901-1950 (%)	1951-1970 (%)	1971-1990 (%)	After 1990 (%)
Bucharest	754,169	9.8	36.8	18.5	30.6	4.3
Alba Iulia	12,877	**76.5**		13.5		
Arad	9,796	**66.2**			33.8	
Bacău	12,848		33.5	**58.3**	8.2	
Baia Mare	17,658			25.0	**75.0**	
Braşov	84,917	9.7	13.0	31.6	45.7	
Cluj-Napoca	335,823	28.4	21.3	15.3	27.1	7.9
Constanţa	29,529		6.4	18.8	39.3	35.4
Craiova	86,978	12.5	**59.8**	13.4	14.2	
Galaţi	85,840	14.7	25.4	3.8	38.1	18.0
Iaşi	325,150	19.6	11.5	21.5	41.5	5.8
Oradea	55,158	21.7	**57.5**	5.8	5.0	10.0
Petroşani	31,093			**56.4**	32.5	11.1
Piteşti	39,025		22.6	10.5	16.3	**50.6**
Ploieşti	35,901			16.5	**83.5**	
Reşiţa	20,534			**100**		
Sibiu	40,174	14.5	38.2	6.9	10.3	30.1
Suceava	17,818			28.6	32.2	39.2
Târgovişte	2,195			**52.4**	24.1	23.6
Tg. Jiu	11,126		33.3		**60.3**	6.4
Tg. Mureş	43,970	19.1	**79.7**	0.4	0.8	
Timişoara	248,106	5.2	24.4	26.0	41.9	2.4
Romania	2,300,685	13.9	27.5	19.5	32.2	6.9

Source: Ministry of Education and Research.

Structure of university spaces. University spaces have relatively few destinations, namely four main categories: education, auxiliary, technical and administration, and spaces with other destinations. At national level the education spaces have the greatest share (56.6%); they are followed by the auxiliary ones (25.3), technical-administration and those having other destinations (Figure 3). The education process needs research spaces, didactical-scientific spaces – belonging to the education auxiliary sector – and, obviously, spaces for technical and administration services. The column "Other destinations" includes premises in course of erection, unfinished or rented to commercial societies, etc.

The structure of the spaces, per university centers, reveals different shares of the four categories in relation to the structure of the respective center, but also to the fragmentation degree or to the construction stage of different infrastructure units. The share of education spaces ranges between 41.9% for the Pitești university center and 71.7 for Bacău. Generally, the great university centers range between 50 and 60%, having Cluj-Napoca at their lower limit. In the structure of Babeș-Bolyai University, the education spaces occupy 46.4% only, a fact influencing the general value. The situation is generated by the high fragmentation degree (83 buildings, the greatest number in the whole Romania), that requires separate technical services, other spaces, etc. At an equal number of students, the Bucharest University has 30 buildings only, and the education spaces represent 57.6%.



Source: Ministry of Education and Research.

Fig. 3. Structure of the built spaces owned by universities (%), per university centers.

The auxiliary spaces have generally the lowest percent in small universities. However, in some cases – Alba Iulia University – they occupy more than 40% of the total space. Since history, mainly archeology has an important place in the university profile, a large part of those spaces shelter archeological artifacts. But the exception that proves the rule is Craiova university center where the auxiliary spaces occupy almost 43%: both the Craiova University (42.1% auxiliary spaces), with many buildings used as libraries and research, and the Medical and Pharmacy School (44.1%).

The technical-administration spaces are relatively well correlated with the number of buildings in the university administration. The highest values are met with the university centers Pitești, Galați, Petroșani and Bucharest (12.3%). The National Academy of Physical Education and Sports in Bucharest, for instance, owns about 26% of those spaces, meaning 12 buildings.

The spaces having other destinations are the most numerous in the case of the Piteşti University – one third exactly. They are generally spaces in course of erection, and represent future education and auxiliary spaces. In the other university centers, the share of the spaces having other destinations ranges within almost normal limits (with slight exceptions for the university centers Braşov, Reşiţa and Târgu Mureş).

These structures were correlated with the number of students, using synthetic indices, calculated by relating the values of the four categories to the main beneficiaries. Thus, in many cases, the universities do not observe the minimum legal standard – both for the education space itself, and for laboratories. The variation of the education space per student is between 0.25 sq. m and more than 11 sq. m. Mention should be made here that the variation of the education space/student depends on the institution profile as well. University of Theatrical and Cinematographic Arts records the highest value (11.08) and is followed by other artistic universities (table 3).

The ratio of students and university premises

Table 3

Universities	Education space/student (sq. m)	Auxiliary space/ student (sq. m)	Technical and administration space/student (sq. m)	Other destinations/student (sq. m)
U01- Polytechnic University - Bucharest	4,35	1,15	0,82	0,53
U02- University of Constructions - Bucharest	2,46	2,39	1,05	0,00
U04- University of Agricultural Sciences and Veterinary Medicine - Bucharest	4,95	2,30	1,41	0,83
U05- University of Bucharest	1,82	0,78	0,39	0,16
U06- University of Medicine and Pharmacy - Bucharest	3,83	1,73	0,35	0,25
U07- Academy of Economic Studies - Bucharest	1,24	0,73	0,25	0,57
U08- University of Music - Bucharest	4,93	2,26	2,44	0,28
U09- National University of Arts - Bucharest	6,63	1,29	0,53	0,00
U10- University of Theatrical and Cinematographic Arts - Bucharest	11,08	4,57	1,89	6,29
U11- National Academy of Physical Education and Sports - Bucharest	5,51	3,11	3,51	1,41
U12- National School of Political and Administration Studies - Bucharest	1,90	0,20	0,52	1,49
TOTAL Bucharest	3,09	1,25	0,68	0,46
U13- University of Alba Iulia	1,38	1,41	0,15	0,20
TOTAL Alba Iulia	1,38	1,41	0,15	0,20
U14- University of Arad	2,43	0,63	0,20	0,35
TOTAL Arad	2,43	0,63	0,20	0,35
U15- University of Bacău	2,67	0,65	0,13	0,28

Universities	Education space/student (sq. m)	Auxiliary space/ student (sq. m)	Technical and administration space/student (sq. m)	Other destinations/student (sq. m)
TOTAL Bacău	2,67	0,65	0,13	0,28
U16- University of Baia Mare	2,71	1,19	0,11	0,00
TOTAL Baia Mare	2,71	1,19	0,11	0,00
U17- University of Braşov	2,41	1,09	0,20	0,80
TOTAL Brşsov	2,41	1,09	0,20	0,80
U18- Technical University – Cluj	3,96	1,76	0,71	1,09
U19- University of Agricultural Sciences and Veterinary Medicine - Cluj	3,28	3,03	1,47	0,35
U20- University "Babes-Bolyai" of Cluj	2,22	1,14	0,60	0,83
U21- University of Medicine and Pharmacy – Cluj	4,43	1,92	0,56	0,24
U22- Academy of Music - Cluj	2,58	1,95	0,98	0,11
U23- University of Art and Design - Cluj	5,79	1,21	0,74	0,15
TOTAL Cluj-Napoca	3,05	1,54	0,70	0,75
U24- Ovidius University –Constanța	1,76	0,36	0,08	0,01
U25- Maritime University – Constanța	4,88	1,39	3,13	0,07
TOTAL Constanța	2,05	0,45	0,00	0,00
U26- University of Craiova	2,14	1,61	0,05	0,03
U27- University of Medicine and Pharmacy - Craiova	2,19	2,39	0,84	0,00
TOTAL Craiova	2,15	1,72	0,17	0,02
U28- University of Galați	3,92	0,86	0,75	0,01
TOTAL Galati	3,92	0,86	0,75	0,01
U29- Technical University Iași	6,52	1,89	1,01	0,18
U30- University of Agricultural Sciences and Veterinary Medicine - Iași	3,91	4,82	1,40	0,53
U31- University of Iasi	1,47	1,40	0,60	0,14
U32- University of Medicine and Pharmacy – Iasi	3,18	0,91	0,39	0,00
U33- University of Arts - Iasi	7,57	0,95	0,46	0,00
TOTAL Iasi	3,75	1,70	0,76	0,16
U34- University of Oradea	0,93	0,49	0,13	0,07
TOTAL Oradea	0,93	0,49	0,13	0,07
U35- University of Petroşani	3,47	1,96	0,91	0,83
TOTAL Petrosani	3,47	1,96	0,91	0,83
U36- University of Piteşti	3,49	0,58	1,51	2,75

Universities	Education space/student (sq. m)	Auxiliary space/ student (sq. m)	Technical and administration space/student (sq. m)	Other destinations/student (sq. m)
TOTAL Piteşti	3,49	0,58	1,51	2,75
U37- University of Ploieşti	4,17	1,76	1,24	0,52
TOTAL Ploieşti	4,17	1,76	1,24	0,52
U38- University of Reşita	3,70	1,75	0,53	1,06
TOTAL Reşita	3,70	1,75	0,53	1,06
U39- University of Sib	2,25	0,80	0,16	0,43
TOTAL Sibiu	2,25	0,80	0,16	0,43
U40- University of Suceava	2,30	0,98	0,20	0,18
TOTAL Suceava	2,30	0,98	0,20	0,18
U41- University of Târgovişte	0,25	0,12	0,01	0,00
TOTAL Targovişte	0,25	0,12	0,01	0,00
U42- University of Tg. Jiu	2,59	0,91	0,15	0,08
TOTAL Tg. Jiu	2,59	0,91	0,15	0,08
U43- University of Tg. Mureş	2,34	0,67	0,34	0,00
U44- University of Medicine and Pharmacy - Tg. Mureş	2,94	1,27	1,81	1,44
U45- Theater Art - Tg. Mureş	6,61	2,18	3,34	0,04
TOTAL Tg. Mureş	2,85	1,09	1,35	0,89
U46- Polytechnic University - Timişoara	4,54	2,34	0,37	0,51
U47- University of Agricultural Sciences and Veterinary Medicine - Timişoara	4,54	0,96	0,37	0,06
U48- University of West - Timişoara	3,43	2,77	0,09	0,07
U49- University of Medicine and Pharmacy - Timişoara	4,17	0,87	0,21	0,02
TOTAL Timişoara	4,11	2,13	0,25	0,24

Sursa: CICADIT.

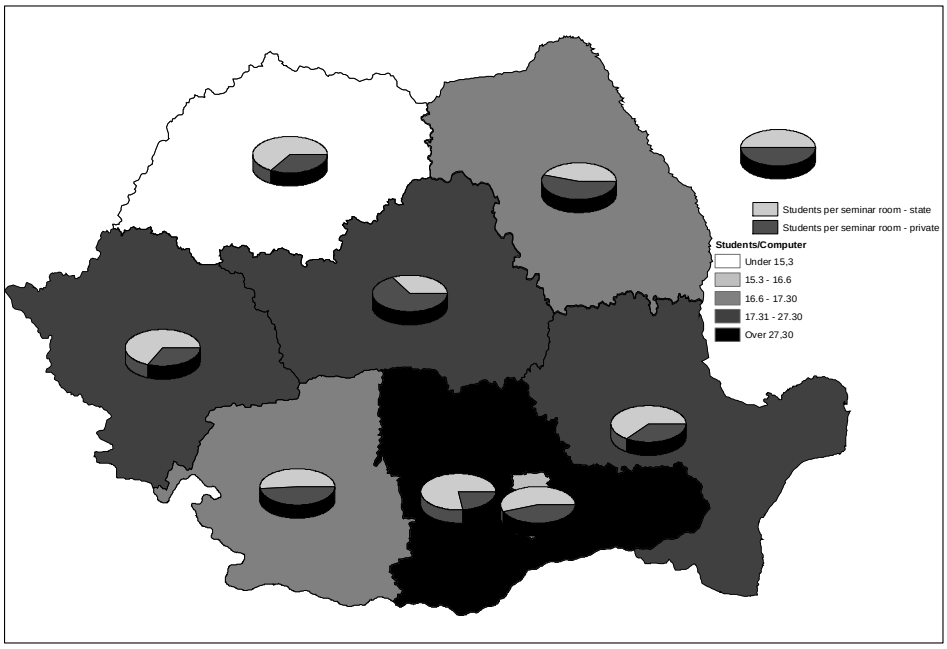
Technical universities have 4–6 sq. m/1 student – surplus of space – but they have also numerous laboratories. The universities with a dominant pedagogical profile offer 2 sq. m/1 student, i.e. below the legal standard. It happens with some of the most important universities in Romania (Bucharest University, "Al. I. Cuza" University in Iaşi) that are below that limit, or with some others, at the limit.

The lowest values are found in three centers established after 1990: Târgovişte, Oradea, and Alba Iulia, but also in some older university centers: Craiova. As a whole, Bucharest university center has a good position, but the component structures of three of its universities do not meet the accreditation criteria: Bucharest University, Academy of Economic Sciences and National School of Political and Administration Studies.

4. STRUCTURE OF THE EDUCATION SPACES AND THE LEVEL OF UNIVERSITY ENDOWMENT

One of the most important university infrastructure indicators is the variation in the number of seminar rooms and laboratories, and also the number of INTERNET-connected computers. Several indices have been used for a more objective analysis, taking into account the number of students that benefit from such facilities.

A first index is the **number of students per seminar room or laboratory.** Whereas, at national level, the number of students per seminar room is higher in the private education system than in the state one, the situation is quite reverse in the case of the number of students per laboratory (fig. 4).



Source: *National Institute of Statistics, processed data.*

Fig. 4. Number of students per seminar room and laboratory, per regions and education categories (state and private).

The variation of the two indicators as a function of development regions and of the two types of education is explained by the private universities having not included among their curricula technical, agricultural, medical or experimental sciences fields or included them to a very extent only. On the one hand, such an option can be explained by the low number of the possible students interested in those fields, and, on the other hand, by the important investments such fields could involve. That is the reason why the number of laboratories is much lower than with state universities, where the infrastructure has been inherited and where the above-mentioned fields are budget-supported. The different shares of the two types of education – the state one represents 3/4 – explain why the national average in both cases is much closer to the average recorded in the field of the state education.

The endowment of the higher education institutions is very important in the specialists' training. Of the multitude of possible indicators, only that on the **number of students per computer** has been considered. The regional variations are relatively important, even surprising, at a global analysis of the education types (table 4).

Number of students per computer and number of INTERNET-connected computers

Table 4

Region	Students/ Computer/types of education			Share of the INTERNET-connected computers (%)	
	State	Private	Total	State	Private
North-Eastern Region	11.9	29.9	13.3	58.6	67.9
South-Eastern Region	22.2	42.8	25.2	74.0	59.5
Southern Region	28.1	29.1	28.1	61.9	100.0
South-Western Region	15.8	42.4	17.1	57.3	57.1
Western Region	20.0	22.5	19.9	71.2	67.6
North-Western Region	12.0	16.8	12.2	70.0	74.4
Central Region	12.1	47.4	22.4	74.5	64.7
Romania	15.6	36.7	18.0	71.6	77.8

Source: National Institute of Statistics, calculated data.

In comparison with the previous analyses, the position of the North-Eastern Region, among the best endowed, is happily surprising. State education in that area ensures a relatively easy access of less than 12 students/1 computer. It is followed by the North-Western Region, having a similar number, and by Bucharest-Ilfov Region. Whereas at the level of the state education this last area is the third, below the country average, at the private level it exceeds comfortably the national average. As a whole, Bucharest-Ilfov Region with the highest number of students/100 000 inhabitants offers a relatively difficult access to a computer. We mentioned "as a whole" because the private higher education (due to its great number of students) changes fundamentally the position of that that region.

As concerns the degree of the INTERNET-connection, at national level, private education holds the better situation. Both types of institutions demonstrate their interest to ensure an as performing as possible tool for their students' documentation. The average exceeds 70%, i.e. a relatively good one for 2002. The best place is held by the Bucharest-Ilfov Region, where the connection degree is about 86%. It is followed by the Central and South-Eastern Regions that change the usual hierarchy of Romania's regions for other categories of higher education. The connection degree is smaller in the South-Western and North-Eastern Regions.

In the private higher education, the smallest INTERNET-connection degree is recorded in Bucharest-Ilfov, the region with the most numerous computers (about 50% of the total number of computers in this type of education).

However, the above information has to be corrected since an important number of those computers are not used in the process of education, but in administration only.

The relatively recent process of electronic evidence adopted for university activities required an increased share of computers in this field. Analysis of the share of the computers used in administration within the total numbers of computers owned by the institutions of higher education shows important gaps; thus, the initial figures should be corrected (table 5).

The greatest share of the computers used in administration is held by the state higher education institutions in the North-Eastern Region, a fact proving either sudden, maximal endowment of the administrations of the respective universities, or an exaggeration since only 70% of computers are used for the education process itself. Much lower shares are met in the Southern and South-Western Regions where there are rather few computers, as well.

Regional variation of the share of computers used in administration per education categories

Table 5

Region	Share of computers used in administration			Students/computer used in education in state institutions
	State education	Private education	Total	
North-Western Region	30.0	20.0	29.3	17.0
South-Eastern Region	16.0	23.1	17.0	26.4
Southern Region	8.8	42.9	9.2	30.8
South-Western Region	8.3	21.4	8.9	17.3
Western Region	23.9	19.5	25.2	26.3
North-Western Region	21.5	30.6	22.0	15.3
Central Region	22.2	19.0	22.0	27.3
Bucharest-Ilfov Region	12.2	18.4	13.4	16.6
Romania	**19.1**	**20.4**	**19.3**	**19.3**

Source: National Institute of Statistics, calculated data.

Private education is characterized by higher shares of computers used in administration; the general average is also higher, 1.3%. The gaps are lower among regions than in the case of state education (the minimum/maximum ratio is about two times in comparison with the state education – where it is almost four times).

Comparative analysis, in state education, of the overall number of students/ 1 computer and the number of students/1 computer used directly in the education process shows a slight change in hierarchy. For example, the North-Eastern Region, which occupies the first place, falls in position 4 due to the exaggerated number of computers used in administration. The difference between the two values is of about 5 students, i.e. a theoretical figure of 12 students/1 computer versus the real one, of 17 students/1 computer.

5. UNIVERSITY SOCIAL INFRASTRUCTURE

Despite all efforts made by universities, the level of the social infrastructure is inadequate: accommodation, reading rooms in hostels, students' canteens. Under the pressure of the accommodation needs in hostels, one of the first measures taken was to change the previous reading rooms in each hostel into dormitories; at the same time, a great part of the

former canteens received other destinations; the building of new hostels has been delayed for years. These are the genuine problems at the level of the social infrastructure and they cannot be solved by universities themselves, with their resources only, but by an adequate government policy in this direction.

The number of students has increased three times and consequently there exists a similar pressure in their accommodation as well. The attraction power of a university center is directly proportional to its size and implies a similar accommodation basis. According to the accommodation places, the national hierarchy evidences Bucharest – Romania's largest university center – by far the leader, with 32 632 places in 102 student hostels, representing 31.83% of the whole accommodation capacity at national level.

The following positions, with accommodation capacities between 5000 and 20000 places are held by Iaşi (17 277 places – 16.85%); Cluj-Napoca (12 452 places – 12%); Timişoara (12 004 places – 11.71%); Craiova (5192 places – 5.06%). The number of accommodation places in the majority of the universities ranges between 1000 and 5000 in such centers as: Braşov – 4081 places (3.98%); Galaţi – 3139 places (3.06%); Ploieşti – 2130 places (2.08%); Constanţa – 2016 places (1.97%); Târgu Mureş – 1850 places (1.80%); Târgovişte – 1220 places (1.19%); Petroşani – 1206 places (1.18%); Oradea – 1144 places (1.12%); Sibiu – 1109 places (1.08%), etc. The opposite pole is represented by the small university centers, small- or medium-sized provincial towns, with either branches of the universities in the larger cities, or with an independent university, established with private or state capital. Their accommodation capacity is under 1000 places (less than 1%): Bacău – 883 places (0.86%); Baia Mare – 828 places (0.81%); Alba Iulia – 776 places (0.76%); Arad – 508 places (0.50 places); Reşiţa – 312 places (0.30%); Târgu Jiu – 132 places (0.13%).

The largest part of the accommodation places is owned by universities. Eleven university centers (Timişoara, Braşov, Ploieşti, Târgu Mureş, Piteşti, Petroşani, Suceava, Bacău, Baia Mare, Reşiţa, and Târgu Jiu) operate 100% in their own spaces whereas in the rest of them the rented spaces predominate (Târgovişte – 980 places, 29.99% of the total of the rented spaces for students' accommodation at national level; Sibiu – 510 places, 15.61%, respectively; Alba Iulia – 152 places, 4.65%; Galaţi – 300 places, 9.18%). Several universities have accommodation places for determined intervals, given to them by local councils, ministers, or other organizations and institutions. In some university centers, their share is relatively important: Arad (50.5%); Oradea (49.3%); Constanţa (25.3%); Sibiu (10.4%), etc. The University of Theatrical and Cinematographic Arts (Bucharest) has such accommodation spaces only.

In Bucharest, the greatest number of student hostels is held by the Polytechnic (28 hostels – 8. 46%, at national level). It is followed by the Academy of Economic Studies (19 hostels – 5.74%), Bucharest University (17 hostels – 5.14%), "Carol Davila" University of Medicine and Pharmacy (13 hostels – 3.93%). In Iaşi, the first position is held by "Gheorghe Asachi" Technical University with the greatest number of accommodation places (22 hostels – 6.65%), all of them its own. "Al. I. Cuza" University comes next, with 16 hostels, 3 of which in somebody else's property. In Cluj-Napoca, "Babeş-Bolyai University" has the first position, with 15 hostels in its property. The majority of the university centers with long-established higher education institutions have their own accommodation spaces. The accommodation capacity and the property form are also determined by the financial power and by the motivation to invest in the field of each authority with decision power. The greatest the financial power of a university center, the more it can invest in new hostels – the number of the latter thus increases whereas the share of the rented spaces, or occupied in other forms, will decrease. Due to the higher number of high-school graduates wanting to continue their

studies, the great university centers have to face an acute shortage of accommodation spaces. Under the present conditions, these spaces are too few and do not agree with the educational offer of each center.

5. CONCLUSIONS

The university infrastructure faces important problems that can only be solved by a clear policy in the field: accredited state and private universities should be included in endowment programs with education spaces, laboratories, libraries, and computing technique. Otherwise, under the conditions of a unique European space for higher education and scientific research, within a competition among universities, the Romanian universities might fight a lost battle at a continental level.

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CONSIDERATIONS ON FOG PHENOMENON IN THE NORTH-WESTERN ROMANIA

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ABSTRACT. – Considerations on Fog Phenomenon in the North-Western Romania. Considered as a natural hazard whenever it occurs fog phenomenon has a great impact in human activity. Annual and seasonal data were used for analyzing the general trends in the number of days with fog for a period of 46 years (1961-2006) in 8 weather stations from North-Western Romania: Baia Mare, Bistrița, Cluj-Napoca, Dej, Ocna Șugatag, Satu Mare, Sighetu Marmației, Zalău. Except Satu Mare which is located in a plane area, the rest of them are located in hilly areas. For detecting and estimating trends in seasonal and annual values time series, Mann-Kendall test for trend and Sen's slope estimates were used. As main conclusion, only one of the nine locations analyzed (Ocna Șugatag) experienced statistically significant trends (upward) for all the period considered, with a significance level of 0.01 for winter and 0.001 for spring, summer, autumn and annual values. One can also remark that, except Ocna Șugatag, there are only four weather stations that experienced statistically significant trends (Bistrița, Baia Mare, Sighetu Marmației and Zalău) which are specific only for annual and for winter values.

Keywords: *fog, trend, North-Western Romania.*

1. INTRODUCTION

Defined as a stratiform cloud layer on the surface or next to it, fog is one of the most important weather phenomena that influence human activity. Usually, it is considered a natural hazard whenever it occurs and special warnings are issued by forecast centers. Fog as a visibility hazard reduces visibility and its effects range from delays, particularly in aviation, marine, and surface transportation and deliveries to serious accidents caused in part by poor visibility. Ships, trains, cars and planes cannot see each other and collide. Lives and property can be at great risk, when heavy rush hour traffic is combined with dense fog, as evidenced by numerous multi-vehicle collisions.

Although the most part of the ships nowadays can penetrate fog using radar, road vehicles have to travel slowly and use low-beam headlights. Localized fog is especially dangerous, as drivers can be caught by surprise. On average, about 53 fatal vehicle accidents in which fog is a contributing factor occur each year on Canadian highways. In aviation, fog normally prevents aircraft from taking off or landing at airports other than those equipped with an Instrument Landing System. Usually, the pilot lines up for the final approach phase, instead of looking vertically through the fog, he is now looking through it at an angle, which increases the amount of haze he has to see through, often completely obscuring the runway. The worst

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accident in aviation history occurred in the fog when 2 Boeing 747s collided in 1977 in Tenerife. That's why fog phenomenon has become an interesting scientific topic for tens of years.

First important scientific studies on fog were written in the first half of the XXth century. Among them, R. Dec. Ward (1923 in Stone, 1936) and R. Stone (1936) articles, published in the American Geographical Society's review, "Geographical Review", are still very known. Since fog formation and dissipation processes depend entirely on special combination between few parameters such as temperature, humidity, cloud cover, surface conditions and stability of the air mass, it becomes part of the passive phenomena category (Pinheiro et al., 2006).

However, after their formation, fogs become extremely dynamic events (Stull, 1998). Dissipation process is generated by local heating, increasing speed winds, air masses changes or precipitation occurrence due to physical feature of the ground. These local conditions may explain the differences that appear in fog phenomenon short- and long-term evolution (Bogdan and Marinică, 2007).

2. DATA

Data recorded in 8 weather stations from the North-Western Romania were used for this study: Baia Mare, Bistrița, Cluj-Napoca, Dej, Ocna Şugatag, Satu Mare, Sighetu Marmației, Zalău. They are located in the hilly areas as it is presented in table 1.

The geographical coordinates of weather stations in the analyzed area

Table 1

WEATHER STATION[3]	LATITUDE	LONGITUDE	HEIGHT (m)
Baia Mare	47.40	23.30	216
Bistrița	47.09	24.36	366
Cluj-Napoca (a)	46.47	23.42	313
Cluj-Napoca (b)[4]	46.47	23.34	410
Dej	47.08	23.54	236
Ocna Şugatag	47.47	23.57	503
Satu Mare	47.43	22.53	123
Sighetu Marmației	47.56	23.54	275
Zalău	47.12	23.03	295

Cluj-Napoca Weather Station changed its location on 1967, January, 1, and because the new location is completely different from the old one, we considered them as different stations: Cluj-Napoca (a), for the old location and Cluj-Napoca (b), for the new location. The old location was in the bottom of the depression, near Someşul Mic River Valley. The number of days with fog, especially in the cold period of the year, is considerably higher than in the new location, on the top of an hill (Cetățuia Hill), situated sometimes over the inversion layer. The height difference between the two locations is about 100 m (97 m).

[3] Weather stations are mentioned in alphabetical order.

[4] Cluj-Napoca Weather Station changed its location on January, 1, 1967, from coordinates (a) to coordinates (b).

Annual and seasonal data were used for analyzing the general trends in the number of days with fog for a period of 46 years (1961-2006). There are also some lacks of data, and they are mentioned in table 2.

Data series available from weather stations in the analyzed area

Table 2

WEATHER STATION[5]	Period
Baia Mare	1961-2006
Bistrița	1961-1988; 1991-2006
Cluj-Napoca (a)	1961-1966
Cluj-Napoca (b)	1967-2006
Dej	1961-2006
Ocna Șugatag	1961-1981; 1983-1999; 2001-2006
Satu Mare	1961-2006
Sighetu Marmației	1961-2006
Zalău	1961-2006

Because the number of days with fog occurring is very small, especially during summer time, monthly data could not be used to calculate the trend.

3. METHODS

For detecting and estimating trends in the time series of annual values number of fog, days, an Excel template – MAKESENS (Mann-Kendall test for trend and Sen's slope estimates) – developed by Salmi et al. (2002) was used. The procedure is based on the nonparametric Mann-Kendall test for the trend and the nonparametric Sen's method for the magnitude of the trend. The Mann-Kendall test can be used to identify a monotonic trend in a time series. The Sen's method uses a linear model to estimate the slope of the trend and the variance of the residuals should be constant in time.

The MAKESENS soft performs two types of statistical analyses:

- the presence of a monotonic increasing or decreasing trend which is tested with the nonparametric Mann-Kendall test;
- the slope of a linear trend estimated with the nonparametric Sen's method (Gilbert, 1987).

Both methods are here used in their basic forms. At the same time, they offer many advantages: missing values are allowed and the data needed are not conform to any particular distribution; the Sen's method is not greatly affected by single data errors or outliers.

3. 1. Mann-Kendall test

The Mann-Kendall test can be used when the data values *xi* of a time series can be assumed to fit the model

$$x_i = f(t_i) + \varepsilon_i , \quad (1)$$

where: - *f(t)* is a continuous monotonic increasing or decreasing function of time

- the residuals ε_i can be assumed to be from the same distribution with zero mean. It is therefore assumed that the variance of the distribution is constant in time.

[5] Weather stations are mentioned in alphabetical order.

Then the null hypothesis of no trend, H_0, is tested in order to accept or reject it. The observations x_i is randomly ordered chronologically, against the alternative hypothesis, H_1, where there is an increasing or decreasing monotonic trend.

In the computation of this statistical test MAKESENS uses both the so called *S* and *Z* statistics given in Gilbert (1987). For number of days with fog available data we analyzed, we consider that both statistics are necessary because for time series with less than 10 data points the *S* test is used (Cluj-Napoca (a) Weather Station), while the normal approximation (*Z* statistics) is successfully used for time series with 10 or more data points respectively (all the other weather stations). So, both methods will be largely presented below.

Number of values (*n*) can be smaller than the number of years that can appear in the data sets in the studied time series due to missing values.

For analysing data recorded in Cluj-Napoca (a) ***number of data values less than 10*** was considered. In this case the test is based on the ***S*** statistic (Significance) and the smallest significance level with which the test shows that the null hypothesis of no trend should be rejected is shown.

The Mann-Kendall test statistic *S* is calculated using the formula:

$$S=\sum_{k=1}^{n-1}\cdot\sum_{j=k+1}^{n}\cdot \operatorname{sgn}\left(x_j - x_k\right) \tag{2}$$

where x_j and x_k are the annual values in years j and k, $j > k$, respectively, and

$$\operatorname{sgn}\left(x_j - x_k\right)=\begin{cases}1, if\,(x_j - x_k) > 0\\ 0, if\,(x_j - x_k) = 0\\ -1, if\,(x_j - x_k) < 0\end{cases} \tag{3}$$

The absolute value of *S* is compared directly to the theoretical distribution of *S* derived by Mann and Kendall, in case of *n* equal or less than 9 (Gilbert, 1987). In MAKESENS the two-tailed test is used for four different significance levels (**α** : 0.1, 0.05, 0.01, 0.001). At certain probability level H_0 is rejected and H_1 is accepted if the absolute value of *S* equals or exceeds a specified value $S_{\alpha/2}$, where $S_{\alpha/2}$ is the smallest *S*, which has the probability less than α/2 to appear in case of no trend. A positive or negative value of *S* indicates an upward or downward respectively trend (Salmi et al., 2002). The minimum values of *n* with which these four significance levels can be reached, are derived from the probability table for *S* as is specified in table 3.

The minimum values of *n* for four significance levels

Table 3

Significance level (α)	Required number of data (n)
0.1	≥ 4
0.05	≥ 5
0.01	≥ 5
0.001	≥ 7

The significance level 0.001 means that there is a 0.1% probability that the values x_i are from a random distribution and with that probability is possible to make a mistake when rejecting H_0 of no trend. Thus the significance level 0.001 means that the existence of a monotonic trend is very probable. Respectively the significance level 0.1 means that there is a 10% probability that a mistake is done when rejecting H_0.

For data sets recorded in the other weather stations than Cluj-Napoca (a), ***number of data values 10 or more*** are considered and the *Z* test (normal approximation) is computed. The statistic *Z* has a normal distribution. The absolute value of *Z* can be compared to the standard normal cumulative distribution to identify if there is a monotone trend or not at the specified level of significance. An upward (increasing) or downward (decreasing) trend is given by a positive or negative value of *Z*.

For data values close to 10, validity of the normal distribution may be reduced, if there are several tied values (i.e. equal values) in the time series.

First, the variance of *S* is computed using equation (4) which takes into account that ties may be present:

$$VAR(S) = \frac{1}{18}\left[n(n-1)(2n-5) - \sum_{p=1}^{q} t_p (t_p - 1)(2t_p + 5) \right] \tag{4}$$

where:

- q is the number of tied groups;
- t_p is the number of data values in the p^{th} group.

Than the values of *S* and *VAR(S)* are used to compute the test statistic *Z* as is presented in (5):

$$Z = \begin{cases} \dfrac{S-1}{\sqrt{VAR(S)}}, if\ S > 0 \\ 0, if\ S = 0 \\ \dfrac{S+1}{\sqrt{VAR(S)}}, if\ S < 0 \end{cases} \tag{5}$$

In MAKESENS the tested significance levels α are 0.001, 0.01, 0.05 and 0.1.

3.2. Sen's method

To estimate the true slope of an existing trend (as change per year) the Sen's nonparametric method is used. The Sen's method can be used in cases where the trend can be assumed to be linear. This means that *f(t)* in equation (1) is equal to:

$$f(t) = Qt + B \tag{6}$$

where:

- *Q* is the slope
- *B* is a constant.

To get the slope estimate *Q* in equation (6), the slopes of all data value pairs are calculated using the formula:

$$Q_1 = \frac{x_i - x_k}{j - k} \tag{7}$$

where $j>k$.

If there are n values x_j in the time series, we get as many as $N = n(n-1)/2$ slope estimates Qi. The Sen's estimator of slope is the median of these N values of Qi. The N values of Qi are ranked from the lowest to the highest and the Sen's estimator is:

$$Q = Q_{[(N+1)/2]}, \text{ if } N \text{ is odd} \tag{8}$$

$$Q = \frac{1}{2}\left\{Q_{(N/2)} + Q_{[(N+2)/2]}\right\}, \text{ if } N \text{ is even.}$$

Then nonparametric technique based on the normal distribution is used to get a 100(1-α)% two-sided confidence interval about the slope estimate. The method is valid for n as small as 10 unless there are many ties.

The procedure in MAKESENS computes the confidence interval for two different confidence levels: α = 0.01 and α= 0.05.

$$C_\alpha = Z_{1-\alpha/2} \cdot \sqrt{VAR(S)} \tag{9}$$

where: - *VAR(S)* has been defined in equation (4),

- $Z_{1-\alpha/2}$ is obtained from the standard normal distribution.

Next $M_1 = (N - C\alpha)/2$ and $M2 = (N + C\alpha)/2$ are computed. The lower and upper limits of the confidence interval, Q_{min} and Q_{max}, are the M_1^{th} largest and the $(M_{2+1})^{th}$ largest of the N ordered slope estimates Q_i. If M_1 *and* M_2 are not whole numbers, the limit are interpolated.

To obtain an estimate of constant B in equation (6) the n values of differences $x_i - Q_{ti}$ are calculated. The estimate of B is given by the median of these values (Sirois, 1998). The estimates for the constant B of lines of the 99% and 95% confidence intervals are calculated by a similar procedure.

4. RESULTS

For this study, we have computed trends for seasonal and annual data as they are shown in table 4. The number of values in the data sets varies from 39 to 46 for winters and from 40 to 46 for the other seasons and for annual values. Cluj-Napoca (a) is considered as an exception, with 5 values for winter and 6 values for the other seasons and annual, due to modification of location. Values marked in the table are statistically significant with different significance level as is presented in the legend below table.

Trends are computed for all stations both for seasonal and for annual values.

For winter the general trend is a decreasing one in the 7 of the 9 analyzed weather stations with values form -0.18 at Satu Mare to -2.83, at Sighetu Marmației. But, only three of them are characterized by monotone decreasing trends with a significance level of 0.01 (Sighetu Marmației) or 0.05 (Bistrița and Baia Mare). Trend values for these three stations are between -2.41 (Bistrița) and -2.83 (Sighetu Marmației). For the other weather stations (Cluj-Napoca (a), (b), Dej and Satu Mare) the significance level is higher than 0.1, thus the trends can not be consider as real ones.

As exceptions are Ocna Şugatag and Zalău weather stations where the trends are monotone upward with a significance level of 0.01 for Ocna Şugatag and 0.05 for Zalău. The trends values are +3.18 and respectively +2.14, which seem to be high values in the general context of the analyzed region.

In spring, summer and autumn statistically significant trends are characteristic only for Ocna Şugatag Weather Station. It is a monotone upward trend of 4.72, 3.48 and respectively 3.57, all of them with a significance level of 0.001. In all the other locations there were not detected monotone trends, either upward or downward, even if they have values from -0.98 to 1.62. For Cluj-Napoca (a) the values are much different from values computed for the other stations, the most probably, due to the short data series.

Value and statistically significance of the trend in number of days with fog at weather stations in the North-Western Romania

Table 4

Weather station	n	Winter	n	Spring	n	Summer	n	Autumn	n	Annual
Bistriţa	42	-2.41*	44	+0.00	44	-0.83	44	-0.76	43	-1.93+
Baia Mare	45	-2.44*	46	+0.25	46	+0.95	46	-0.93	46	-2.05*
Cluj-Napoca (a)	5	-1.00	6	-6.00	6	-8.00	6	+4.00	6	+5.00
Cluj-Napoca (b)	39	-0.20	40	+1.62	40	+1.06	40	+0.18	40	+0.87
Dej	45	-0.38	46	-0.64	46	+0.41	46	-0.47	46	-0.34
Ocna Şugatag	41	+3.18**	44	+4.72***	44	+3.48***	44	+3.57***	44	+3.98***
Sighetu Marmaţiei	45	-2.83**	46	-0.88	46	-0.57	46	+0.07	46	-2.21
Satu Mare	45	-0.18	46	-1.40	46	-0.98	46	+0.35	46	-0.71
Zalău	45	+2.14*	46	-0.72	46	-0.25	46	+1.11	46	+2.01*

Legend: - n - number of values in the data series
- *** - α= 0.001 significance level
- ** - α= 0.01 significance level
- * - α= 0.05 significance level
- + - α= 0.1 significance level

Annual series allow emphasize statistically significant trends, in four data series, both increasing (Ocna Şugatag, Zalău) and decreasing (Bistriţa, Baia Mare). The significance level is different from one station to another: 0.001 for Ocna Şugatag, 0.05 for Baia Mare and Zalău, 0.1 for Bistriţa. Values also varies very much from -2.05 to 3.98. The rest of the 5 weather stations show also increasing or decreasing trends, but not statistically significant.

Using Sen's nonparametric method, slope for annual values were calculated together with limits of two confidence intervals: α= 0.01 and α=0.05. The results are presented in table 5.

Value of *Q* varies in the studied region from -0.278 days/year to -0.063 days/year for the negative values and from 0.174 days/year to 1.184 days/year.

It worth mention that extreme values (-0.278 and 1.184) were computed for Sighetu Marmaţiei and Ocna Şugatag, both located in a little area called Maramureş Depression. The physical (relief) and urban conditions are not similar. First, the location of Ocna Şugatag Weather Station is 228 m higher than Sighetu Marmaţiei location. Than, in the last 16 years, Sighetu Marmaţiei Weather Station was gradually integrated into the urban area of Sighetu Marmaţiei town and probably the urban heat has an important role in the decreasing trend in number of days with fog.

Values for Sen's slope estimated *Q* and the limits of confidence intervals computed for annual number of days with fog[6]

Table 5

Weather station	Q	Qmin99	Qmax99	Qmin95	Qmax95
Bistrița	-0,179	-0,453	0,053	-0,400	0,000
Baia Mare	-0,200	-0,500	0,043	-0,419	0,000
Cluj-Napoca (b)	0,087	-0,247	0,363	-0,171	0,296
Dej	-0,063	-0,550	0,429	-0,450	0,312
Ocna Şugatag	1,184	0,513	1,813	0,686	1,667
Sighetu Marmației	-0,278	-0,669	0,030	-0,558	0,000
Satu Mare	-0,077	-0,381	0,217	-0,290	0,146
Zalău	0,174	-0,040	0,380	0,000	0,333

Legend:
- **Sen's slope estimate Q**: the Sen's estimator for the true slope of linear trend i.e. change per unit time period (in this case a year);
- **Qmin99**: the lower limit of the 99 % confidence interval of Q ($\alpha = 0.01$);
- **Qmax99**: the upper limit of the 99 % confidence interval of Q ($\alpha = 0.01$);
- **Qmin95**: the lower limit of the 95 % confidence interval of Q ($\alpha = 0.05$);
- **Qmax95**: the upper limit of the 95 % confidence interval of Q ($\alpha = 0.05$).

By the same method, values of *B* constant and the limits of confidence intervals were calculated for annual number of days with fog in the North-Western Romania. The results are presented in table 6.

Values of *B* constant in equation (6) and the limits of confidence intervals computed for annual number of days with fog

Table 6

Weather station	B	Bmin99	Bmax99	Bmin95	Bmax95
Bistrița	32.74	38.25	27.79	37.00	28.00
Baia Mare	41.50	48.75	36.46	47.36	37.00
Cluj-Napoca (b)	35.26	41.17	29.75	40.03	30.00
Dej	85.38	92.57	74.14	91.40	76.23
Ocna Şugatag	18.67	35.57	6.65	30.81	11.50
Sighetu Marmației	43.39	55.38	34.98	51.53	36.00
Satu Mare	49.35	55.76	42.09	53.09	44.87
Zalău	13.80	17.57	9.40	16.50	10.50

Legend:

- **B**: estimate of the constant B in equation (6)
- **Bmin99**: estimate of the constant Bmin99 in equation (6) for 99% confidence level of linear trend;
- **Bmax99**: estimate of the constant Bmax99 in equation (6) for 99% confidence level of linear trend;
- **Bmin95**: estimate of the constant Bmin95 in equation (6) for 95% confidence level of a linear trend;
- **Bmax95**: estimate of the constant Bmax95 in equation (6) for 95% confidence level of a linear trend.

[6] Due to short time series, the limits of the confidence intervals for Cluj-Napoca (a) could not be calculated.

The highest value of the constant (85.38) is specific to Dej Weather Station, located almost in the middle of the area and near the confluence of two important rivers (Someşul Mare and Someşul Mic). The lowest value (13.80) was calculated for Zalău Weather Station. The values for the other stations are generally in the interval 30.00…50.00.

5. CONCLUSIONS

Due to its small-scale nature, fog is a localized short-lived phenomenon and it is therefore difficult to detect, analyze and predict it.

As main conclusion of the study we can remark that only in one of the nine analyzed locations there are statistically significant trends for all the period considered. This location is Ocna Şugatag, the trend is monotone increasing and the significance level is 0.01 for winter and 0.001 for spring, summer, autumn and annual.

One can also remark that, except Ocna Şugatag, there are four weather stations that experienced statistically significant trends (Bistriţa, Baia Mare, Sighetu Marmaţiei and Zalău). They are characteristic only for annual and winter values. The significance level varies from one station to another from 0.1 calculated for Bistriţa annual values to 0.01 calculated for Sighetu Marmaţiei Winter values.

Regarding the average slope, the extreme positive and negative values were calculated for two stations situated very close one to another (Ocna Şugatag and Sighetu Marmaţiei). The altitude and the urban area seem to be responsible for that difference.

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EXTINCT FALLOW DEER (*DAMA DAMA* L.) POCKETS IN ROMANIA

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ABSTRACT. – Extinct Fallow Deer (*Dama dama* L.) Pockets in Romania. The physical-geographical units hosting the 28 Fallow Deer population pockets were: the West Plain and the Romanian Plain, the Transylvanian, Moldavian, Getic and Someş plateaus, the West Hills, the Apuseni Mountains, the Moldavian Subcarpathians and the Danube Delta. Most pockets (71%) would disappear after 1960. The size of extinct pockets varies from a few deer (Miceşti, Dumbrava-Oravița, Huşi, Orşova, Iteşti-Gârleni and Coşava) to scores of individuals (Livada, Fersig, Coldău, Ciornuleasa, Poieni-Iaşi, Dumbrăveni-Sibiu, Comana, Râioasa and Cerveniţa) and hundreds even (Balc, Floreşti, Pătulele-Punghina and Valea Lungă).

Keywords: *Fallow Deer pockets, rate of extinction, territorial repartition.*

1. GENERAL PROBLEMS

The first Fallow Deer pockets in this country were created in 16th-century Transylvania, later on in Banat and Crişana (18th-19th cc), and only after 1950 one may speak of them on the southern and eastern sides of the Carpathian Mountains.

At the beginning, this mammal was meant to populate some hunting parks, but later on it was released in the wild. The species is profoundly attached to the area it was first introduced in, so no migrations have been recorded. In time, many pockets would shrink in size and finally disappear altogether. Wat has led to their extinction is poaching, cattle and sheep grazing in their habitats, expansion of forest exploitations, intense circulation of people and vehicles. The utility of a species often foretells its extinction, a process pacilated by the small number of its populations (Primack, 2000, Sciama, 2003).

Documents and field investigations indicate a number of 28 extinct Fallow Deer pockets In Romania, 3 of them (11%) before 1900, 5 (18%) between 1901 and 1960, the majority, that is 20 (71%), disappearing after that year, that is in the very last decades, when all types of ecosystems were subjected to greater human pressure than ever before.

Since the species favorable habitats are the lowlands and the hillsides, precisely the regions of maximum human settlement, it is there that the rate of extinction, especially of large mammals, used to be faster.

The paper makes a detailed, chronological presentation of extinct pockets in Romania.

2. EXTINCT POCKETS BEFORE 1900

2. 1. Ardud (Satu Mare County). In mid-16th century, in the High Plain of the Someş River close to the homonymous commune (20 km south of Satu Mare Town), Gh. Bathori, the Governor of Transylvania, owned a park that sheltered also Fallow Deer. In 1565, the park was destroyed, fences were burnt down and the animals killed (Nedici, 1940).

2. 2. Banabic (currently Vâlcele, Cluj County). In the first half of the 19th century, in the Feleac Hills (15 km south of Cluj City) stood Rhedey's park (500 m alt.). It was destroyed during the 1848 Revolution.

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2. 3. Sâmbăta de Jos (Braşov County). At 15 km west of Făgăraş, in the Hârtibaciu Tableland, a preserve was owned by Count Bruckenthal. Large numbers of Fallow Deer had been colonised prior to 1848. The specimens still existed in 1856, but only a few were there in 1888.

3. EXTINCT POCKETS OVER THE 1900-1960 PERIOD

3. 1. Troaş-Săvârşin (Arad County). The Troaş Valley, not far from the homonymous village, at 15 km north-east of Săvârşin, in the Zarand Mts., was Hunyady's estate (260-400 m alt.). The animals were colonised in 1900 and protected. In 1913, a number of 33 deer were hunted down (Câmpeanu, 1933). When the herd was very large it reached down to the Mureş floodplain, on the lands of the peasants from Săvârşin (Cotta, 1992). During the First World War, poaching led to their extinction. After 1920, the proposals to made to reintroduce the species never materialised (Ardeleanu, 1945).

3. 2. Hălăliş (Arad County). Close to Hălăliş Village, at 3 km west of Săvârşin, there was a 200 ha park (200-260 m alt.) populated with Fallow Deer, but disaffected after 1918.

3. 3. Floreşti (Prahova County). Before World War I, the 150 ha hunting park (270 m alt.) on the Cantacuzino estate at Floreşti, housed numerous deer specimens. The park (20 km north-west of Ploieşti City) was closed in by a tall stone-wall built long before 1900. By the end of the 1930s it numbered 150 Fallow Deer (Nedici, 1940). After World War II, the park was destroyed.

3. 4. Banloc (Timiş County). In the inter-war period, this lowland forest (80 m alt., south of Timişoara City) sheltered a few specimens (Călinescu, 1931), but in the 1960s the species was existent.

3. 5. Bulci (Arad County). In the Mureş Corridor (150 m alt.) a 200 ha hunting park, populated with Fallow Deer before and after 1918, was in place near Bata Commune; in 1948 the animals were still there, but all disappeared after 1950.

4. EXTINCT POCKETS AFTER 1960

4. 1. Balc (Bihor County). The Fagul-Balc Forest lies 22 km east of Marghita Town, in the West Hills (300-350 m alt.). It had housed the species even before 1918, but after World War I most specimens disappeared. In 1919, I. Pincas fenced the forest in, turning it into a hunting park and populated it with Fallow Deer brought from Austria. Nedici (1940) says that some specimens originated also from Şarlota Park (Timiş County). As the forest (1,200 ha) stood farther away from the village or from the routes of communication, conditions proved favorable for the species to breed; the first specimens were hunted down in 1925. In 1937, the forest numbered 600 deer, many of them still there in the early 1940s (Pelle, 1943). In the Fall of 1944, as the German-Hungarian armies withdrew, the fence of the 750 ha park was destroyed, and sustained poaching proved devastating for the deer population (Alaci, 2005). However, in the 1950s, a few specimens could still be seen (a female in 1957). Their disappearance is connected also with the presence of wolves, which made them leave the area (Popescu, 1958). In 1960, some still lived there (Bunescu, 1961, Vasiliu, 1961); what followed was extinction.

4. 2. Ciornuleasa (Călăraşi County). The forest (50 m alt.) is situated 18 km north-east of Oltenița Town, in Bărăganul Mostiştea Plain. The deer were brought from the Malu Roşu Forest (Ilfov County) and at the end of the 1950 were left in the wild, and they were still present in 1960 (Bunescu, 1961, Vasiliu, 1961). In 1967, there were 80-90 specimens. In January 1968, a sudden rise in temperature led to show melt and the animals came out to graze in the wheat

fields and remained there overnight. A heavy snowfall covered the field and the 1 m-thick snow layer killed almost every one of them. In March 1968, at 2 km from the forest, the corpses of 70 deer were found. One pair still existed in March 1969, but in 1970 the species was extinct.

4. 3. Iezerul Ighiel (Alba County). On Mount Vârtop (Trascău Mts.) close to Lake Iezer (10 km from Ighiel Village, 40 km north-west of Alba Iulia City) a one-hectare enclosure (925-1,080 m alt.) built at the end of 1967 and later enlarged to 6.5 ha, was populated with 7 deer. This 2 m-high enclosure was made up of wire net and barbed wire. In 1968 it had 23 specimens, only 7 in 1969 (6 males and one female), but 15 in 1978. Subsequently, the animals were released into the 400 ha forest at Bărăbanț-Alba Iulia. In the 1980s the species was extinct.

4. 4. Orşova (Mureş County). A deer was brought in Dosul Forest (650-750 m, a fairly high altitude) (Cotta, 1968) in the Orșova Valley (at Poiana Mănăstirii) 20 km east of Reghin Town. In March 1967 it housed 20 specimens, their number rising to 25 (10 males and 15 females) over the 1968-1970 interval. The animals lived in the wild. The species was extinguished by wolves (1980).

4. 5. Letea (Tulcea County). This mammal was introduced in Letea Forest (5,200 ha) in the Danube Delta, at 18 km north-west of Sulina Town. The first specimens came in at the end of the 1960s. Two pairs were there in 1969 and 9 individuals were seen in 1977. Ten years later there was none in the area. Apparently, the species did not altogethers disappear from the Delta, it being spotted (2003) at 25 km west of Letea Forest, in Tatanir hunting fund (3 individuals).

4. 6. Livada (Cluj County). In 1962, close to Livada Village (Iclod Commune), at 8 km west of Gherla Town, 4 deer (1 male, one female and two calves) arrived from Orșova, Mureș County, and 14 from Șarlota Park in Dumbrava Forest (300 ha, 285-470 m alt.). They were kept in an enclosure (20 ha) for 4 years. Then released into the wild. In March 1967, their number had risen to 20 and 44 more were counted in spring 1969 (14 males and 30 females), a top figure (55) being recorded in 1970. Later on, human pressure on the forest (a new pheasant farm, forest works) made the deer leave the place, the last specimens being seen in 1975. Some migrant animals were observed (1975-1980) 15-45 km away, in the vicinity of Dej Town and Panticeu Commune. In 1981 the species was extinct.

4.7. Huşi (Vaslui County). Colonisation took place in mid-1960s, the deer being kept in an enclosure at 3 km from Șișcani Village in the north of the Fălciu Hills. Their water source was the Rogoasa Brook. The specimens were brought from Șarlota Park in special trucks, kept in the enclosure for one year, then released into the wild. In 1969, 9 individuals (3 males and 6 females) roamed the forests between Huși Town and Duda Village. At the end of the 1970s, the animals lived in the forests north and south of Huşi, at 250-360 m alt. Highest numbers (20) were registered in the 1980-1982 interval: 9 (3 males and 6 females) in Uliu Forest (1980-1981) and 10 (4 males and 6 females) in 1982; 5 (2 males and 3 females) in Dobrina Forest (1980 and 1981) and only two paiers in 1982. For three years in a row (1980, 1981 and 1982) Vlăscineasa Forest housed 5 specimens (2 males and 3 females). At the at time, the deer would move eastwards up to Bogdana-Voloseni Forest. Five individuals were observed also in Valea Teiului Forest in 1979. As of 1983, the population began declining, because it failed to adapt properly to the local conditions. The last Fallow Deer seen in Dobrina Forest was in 1986.

4. 8. Poieni (Iaşi County). An enclosure in Poieni Forest (20 km south-east of Iași, the north of the Central Moldavian Plateau, 250-400 m alt.) was commissioned on July 29, 1954 at the point named „Cărbunărie". In spring 1955 it received 5 pairs of deer from Șarlota Park. Released into the wild, the effective bred reaching 45 individuals (1959) and spread to the Forest Ranges of Ciurea and Dobrovăț. In spring 1969 field surveys noticed 44 specimens (21 males and 23 females). In 1975, their number was fairly small, the herd disappearing from the Dobrovăț area in 1978.

4. 9. Dumbrăveni (Sibiu County). The deer was colonised in the north of the county, in two forests of the Hârtibaciu Tableland (350-600 m alt.). In 1955, a 6-ha enclosure was made in Valchid Forest (4 km south of Dumbrăveni); in 1956 it received 10 animals from Şarlota Park and 8 more the following year. In the summer of 1958, there were 20 deer in all (Bulugea, 1958). In 1957, one more enclosure (10 ha) surrounded with a wire net, was built in Hodoş Forest (7 km south-west of Dumbrăveni) and 18 deer were colonised from Şarlota Park. But despite wolf control measures being taken (only in March 1-15, 1958, 22 wolves were shot down), shortly after the first deer had been brought in, 4 wolves dug a hole under the enclosure and ate up 4 females. Later the animals from both enclosures were released into the wild. Wolves and low temperature in early 1963 (-34.2 °C on Jan. 24 at Dumbrăveni) limited the effective`s increase. In spring 1967 only 30 specimens (Cotta, 1968) were observed as far as a Roandola and Nou Săsesc villages, at 6 km from the colonisation point. In March 1969 all individuals (6 males and 9 females) lived in the forests between the Hodoş Valley and Aţel Village. In 1977, in Hodoş-Aţel area there were 12 individuals (4 males and 8 females), and in 1985 there were only 10 (5 males and 5 females) in the Hodoş-Biertan area. In 1986 none was left in Aţel area. The last specimens were seen in 1987-1988. Extinction was the result of cattle grazing in the forest, the priority increase of the Carpathian deer, and the presence of wolves.

4. 10. Iteşti-Gârleni (Bacău County). This 248-358 m alt. area, found at 15-20 km north of Bacău Town, was populated with 20 Fallow Deer (1955-1956) brought from Şarlota Park. Because of wolves, only 18 were left in 1967 (Cotta, 1968); two years later 5 females were seen and in spring 1987, 6 individuals still existed. In 1988 the species disappeared. The Fallow Deer observed in the 1980's were actually migrants from Mărgineni Forest (Neamţ County), at 20 km north-east. The animals showed a preference for the small forests (Precista, Galbeni and Bereşti-Bistriţa) extending at the eastern end of the Moldavian Subcarpathians, between the villages of Iteşti, Galbeni and Bereşti-Bistriţa bordering on Neamţ County.

4. 11. Comana (Giurgiu County). In 1960, one specimen was introduced into the forests (4,100 ha) between Comana and Prundu villages, east of Vlad Ţepeş Village. The region is located 27 km south of Bucharest, in the Burnas Plain (75-90 m alt.). In 1969 there were 70 individuals, 50 in 1973 and 57 in 1978 (24 males and 33 females), and 65 in the following year (27 males and 33 females). In the early 1990s the species was extinct.

4. 12. Fersig (Maramureş County). Fersig Forest (1,875 ha) lies 20 km south-west of Baia Mare Town, at only 2.5 km west of the Someş River, at 164-259 m altitude. The first deer were brought in from Bata-Fiac Park (Arad County) in 1963. In early 1968 they numbered 47 individuals (9 males and 38 females). As they bred, one group migrated southwards to Iadăra Forest, where 8 deer (2 males and 6 females) were seen that same year. A few years later, the group returned to Fersig Forest. In 1968 the area numbered 55 specimens. Subsequently, the effective decreased to 46 (12 males and 34 females) in 1979, to 24 (10 males and 14 females) in 1986, and only 25 (10 males and 15 females) remained in 1987. No more than 10-11 deer were observed mainly on the southern forest fringes in 1988, the last specimens being poached at the end of 1989 and in early 1990. Some would migrate 35-40 km to the south, in Sălaj Couty and discovered there between Jibou and Popeşti settlements over the 1968-1970 period. In 1980, 9 individuals were spotted on the Mirşid hunting grounds. A few years later the species would disappear from this area, too.

4. 13. Coşava (Timiş County). The deer was introduced experimentally in the basin of the Năndreasca Brook, north-east of Coşava Village (Curtea Commune) at the eastern end of the Lipova Plateau (200-318 m alt.). Forestland covered 1,300 hectares. In 1978, 22 deer from Şarlota Park were introduced, but in the winter of 1978-1979, six of them were

eaten up by wolves. In 1980 the 16 individuals left began moving north-eastboards. Poaching, wolves and migration led to their extinction in 1985.

4. 14. Râioasa (Ilfov County). The forest (1,400 ha) lies near Buftea Commune at 97-108 m altitude. In 1964 a few specimens brought from Șarlota Park were kept nearly one year in a 0.4 ha enclosure surrounded with a 2 m-high were net, then they were released into the wild. In spring 1969 their number had risen to 60 (20 males and 40 females), but decreased to 45 in 1982 and to 19 in 1985. In 1988 the species was already extinct (because of poaching, and also because the forest had become an agreement destination for Bucharesters).

4. 15. Valea Lungă (Hunedoara County). The Valea Lungă Park (Luncoiul de Jos Commune) (609 ha, 390-711 m alt.) was established in the Metaliferi Mountains during 1933-1935. Five deer (1 male and 4 females) were colonised from Șarlota Park in 1935, their number increasing to 40 in 1943, but only 14 were still seen in October 1950 (Cotta, 1992 a). The effective grew to 96 in 1967 and to 109 in spring 1969 (47 males and 62 females). In 1977, this cynegetic reservation housed 180 deer and 220 in 1979. There were winters in which the snow pack was so high that the animals could jump over the Park`s fence, eg. in 1977, 6 individuals were observed 8 km north-westwards, in the forests of the Mica Valley, towards Birtin Village. In the early 1990s the species was extinct.

4. 16. Cerveniţa (Mehedinţi County). Ten deer from Șarlota Park were colonised in 1971. In order to acclimatize them, they were kept in an enclosure built in Larga Forest, 1.5 km west of Cerveniţa Village (Prunişor Commune). Shortly afterwards they were released into the surrounding forests (230-350 m alt.). The habitat being propitious the effective increased up to cca 100 specimens in spring 1989, but soon after, poaching would decimate them to a few individuals (end of 1990), the species becoming extinct in 1991.

4. 17. Coldău-Beclean (Bistriţa-Năsăud County). Coldău Forest (Someşan Plateau, 360 m average alt.), received 11 Fallow Deer in 1978 (although a proposal to this effect dated back to 1955), from Bratovoieşti and Pătulele-Punghina (Dolj and Mehedinţi counties, respectively). Between 1977 and 1982 they were acclimatized in a 12 ha enclosure fancied in with a 2.8 m high wire net and released in to the wild in 1983. The harsh winter of 1984/1985 made wolves attack them. The deer population would increase again from 11 in 1979 to 55 in 1982, reaching the highest figure în spring 1987 (65). In the following years the population was reduced by wolves and poaching. In the spring of 1990, only 5 females were still around. Extinction occurred in 1991.

4. 18. Dumbrava-Oraviţa (Caraş-Severin County). Ten deer originating from Chişineu-Criş (Arad County) were introduced in 1976 in Dumbrava Forest (4 km south-west of Oraviţa, at 150-232 m alt.) in the contact area of the Oraviţa Hills with the Caraş Depression. They numbered 8-12 over the 1977-1987 decade. Top figures: March 1988. Three individuals were seen near Vărădia Village (at 6 km north-westwards), but they soon returned to Dumbrava Forest. Wolves and poaching led to the disappearance of the species in 1995.

4. 19. Pătulele-Punghina (Mehedinţi County). This forest (4,150 ha) in Blahniţa Plain, part of the Oltenia Plain, lies at 91-132 m alt. In 1969, 65 deer (20 males and 45 females) were brought from Reşca (Olt County) in three stages. The largest population pokets throughout the life of the species in these parts, was the Punghina forest sector. In the early 1970s they would extend their territory in the northern forest sector in the direction of Pătulele. In 1973, the effective numbered 174 individuals, 287 in 1975 of which 216 (81 males and 135 females) in the Punghina sector and 71 (28 males and 43 females) in the Pătulele sector. A top figure (550 specimens) was reached in 1979. Two years later the population dropped sharply (by 53%), mainly because of a massive inflow of wild boars from the Danube Floodplain, a species absent until then in the forests fauna. Over the 1981-1989 period the size of the deer population (250-300 deer) registered fluctuations (estimated number 288 în 1987). After 1989, poaching, higher traffic in the wake of forest restitutions,

forest works, lack of water (a succession of dry years in the 1990-2000 decade) caused significant decreases. The warm winter of 1989-1990 made many individuals come out into the fields where poachers lay in wait; others left the forest (some moving north-westwards towards Şimian Village) and never came back, most probabily they had perished. What was left in 1990 were 85 deer, basically then times fewer that 10 years before. The 1990-1997 period registered 40-80 individuals, with a light cameback in early 1994. The spring of 1998 witnessed the presence of 8 deer, 5 in the south of the forest and 3 towards Pătulele, only 2-3 in 1999 and none in 2000. A set of adverse conditions in the 1990s (poaching, annual droughts in a row, water shortage, human pressure on all types of grounds, the inflow of jackals from the south, the packs of dogs and especially of hounds) led to this mammal disappearing from the region.

4. 20. Miceşti (Argeş County). In 1966, a 137 ha enclosure was built (325-375 m alt.) close to the homonymous commune (15 km north of Piteşti City), for Fallow Deer originating from Mozacu (Argeş County) and introduced in 1966-1967. In 1969 there were 15 individuals (7 males and 8 females). Subsequent evolutions looked as fallows: 12 in 1979, 16 in 1990, 10 în 1992, 14 in 1993 and 4 in 1998. In spring 2003, four deer were still seen, then they disappeared.

In conclusion, what led to extinction is human pressure on their favourite ecosystems, uncontrolled hunting, and poaching. In our opinion, the locally extinct species represents an indicator of man-induced erosion of biodiversity.

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THE NUMERICAL EVOLUTION AND DISTRIBUTION OF THE POPULATION IN SOMEŞUL MARE HILLS

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ABSTRACT. – The Numerical Evolution and Distribution of the Population in Someşul Mare Hills. We have analysed the numerical evolution of the population of this region between 1900 and 2002, for a period of 102 years, taking into account 13 administrative units, made up by 54 villages. The population increased by 3289 inhabitants, with an average annual rate of increase of 32.5. However, this period may be divided into two stages: 1900-1966, when the population of the region reached the value of 60949 inhabitants, and 1966-2002, when the population decreased to 49190 inhabitants. At the level of administrative units, the highest average annual rate of increase was recorded in the commune of Telciu, with a value of 20.7, meaning an effective increase of the population from 3283 inhabitants in 1910 to 5377 inhabitants in 2002, and the most significant decrease of inhabitants was recorded in the commune of Ciceu-Giurgeşti, where the average annual rate of increase was -7.8. In 2002, the general density at the level of the region had the value of 1.3 inhabitants/km^2. However, at the level of the main geographical subregions, the lowest density, of 0.6 inhabitants/km^2, was recorded in Suplaiului Hills. At the level of the administrative units, the highest density value was recorded in 2002 in the commune of Salva (80 inhabitants/km^2). However, for the entire region, and the entire period of time, the highest value of the general density was recorded in the village of Salva in 1966 (86.8 inhabitants/km^2).The agricultural density varied from the value of 0.4 inhabitants/ha (the commune of Zagra) and 1.2 inhabitants/ha (the commune of Salva) in the year 2002. Due to the location of Someşul Mare Hills, the arable density has higher values than the agricultural density at the level of administrative units. Thus, at the level of the commune of Coşbuc, the arable density has the value of 14.5 inhabitants/ha, while the agricultural density is only 0.7 inhabitants/ha.

Keywords: *evolution of population, population dynamics, population density, Someşul Mare Hills.*

1. THE EVOLUTION OF THE POPULATION IN SOMEŞUL MARE HILLS

We have analysed the numerical evolution of the population from the year 1900 until 2002 (the latest population census).

We have divided this period of time into several stages: 1900-1910, 1910-1930, 1930-1948, 1948-1966, 1966-1992, 1992-2002.

Between 1900 and 1910, the population of Someşul Mare Hills increases with 2325 inhabitants. Although the annual average increase is positive, there are some administrative units that present negative values, such as: Dumbrăviţa (-1.1), Ciceu-Giurgeşti (-2.2), Ciceu-Corabia (-5.6), Leleşti (-1.1) Cristeşti Ciceului (-1.8), Ilişua (-1.1), so 18.4% of the settlements have negative values.

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Analysing the next period, between 1910 and 1930, which includes World War I, that has serious effects on the evolution of the population, the following aspects should be remarked. From the point of view of the annual average increase, the following values are noticeable at the level of the main composing subregions: the annual average increase is 54.2 in Ciceului Hills; the annual average increase is 64.1 in Suplaiului Hills; the annual average increase is 121 in Năsăudului Hills.

The evolution of the number of inhabitants at the level of Someşul Mare Hills

Table 1

Year	Total no. of inhabitants	Annual average increase	The rate of increase for the entire period	Absolute increase	The annual average rate of increase
1900	43576	-	-	-	-
1910	45901	258.3	5.3%	2325	5.3%
1930	51008	268.7	11.1%	5107	0.5%
1941	55964	495.6	9.7%	4956	0.88%
1948	56431	77.1	0.83%	467	0.11
1956	56523	13.1	O.16%	92	0,0
1966	60949	491.7	7.83%	4426	0.7
1977	58222	-278.7	-4.47%	-2727	-0.4
1992	55410	-200.8	-4.82%	-2812	-0.3
1996	55018	-130.6	-0.7%	-392	-0.1
2002	49190	-1165.6	-10.5%	-5828	-1.7

At the level of administrative units, the highest increase of the population has been recorded in the commune of Telciu (760 inhabitants), and the lowest increase in the commune of Zagra (113 inhabitants).

It should be mentioned that the commune of Telciu was not the one with the highest number of inhabitants from the area, as it had a population of 4043 inhabitants in 1930, compared to 5712 inhabitants of the commune of Ciceu-Giurgeşti and 4129 inhabitants of the commune of Rebrişoara. At the level of settlement, one should notice the high annual increase of the villages of Telciu (90), Rebrişoara (37.1), Târlişua (19.7). Apart from these, there are also villages with a negative annual rate of increase, such as: Zagra (-7.47), Agrieş (-6.6), Bichigiu (-0.26).

The next period, between 1930 and 1948, is marked by World War II, which determines a decrease of the birth rate and an increase of the mortality rate, therefore resulting a low value of the rate of natural increase. The population started to be recorded in December 1930, and this was the first general census after the creation of Great Romania, which registered aspects that had been minimized by the censuses performed during the Habsburg regime (1691-1867) and the Austrian-Hungarian regime (1867-1918). The population increased during this period with 5423 inhabitants, that is 4956 inhabitants between 1930 and 1941 and 467 inhabitants between 1941 and 1948. The average rate of increase presents negative values in Ciceului Hills (- 54.1) as compared to Suplaiului Hills, with a value of 138.3 between 1941 and 1948.

Taking into account the effective numbers, one may notice that the highest increase is recorded in the case of the commune of Telciu, with a value of 1128 persons, while the lowest value is recorded in the case of the commune of Petru Rareş – 34. However, the annual average rate of increase presents its highest value in the commune of Spermezeu (14.13%) and the lowest value in the commune of Căianu Mic (-0.4%).

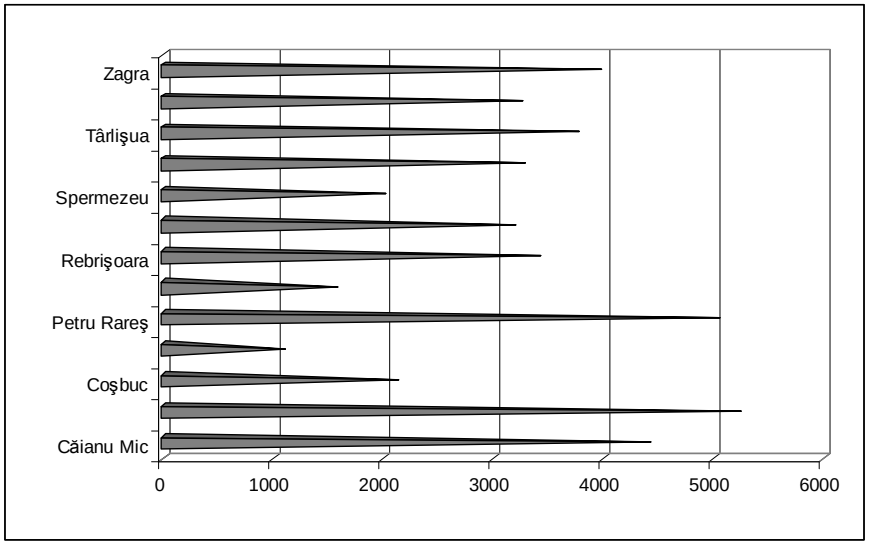

Fig. 1. The representation of the population of the communes of Someşul Mare Hills, at the level of the year 1910.

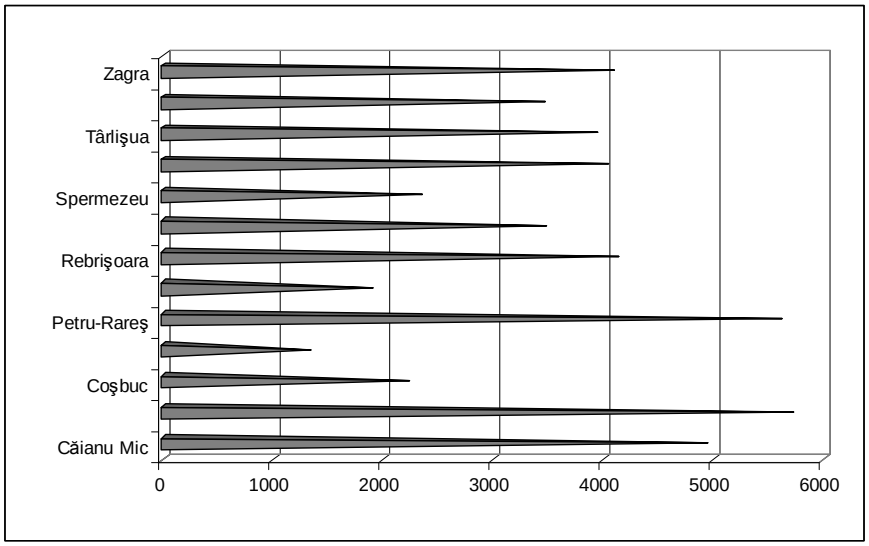

Fig. 2. The representation of the population of the communes of Someşul Mare Hills, at the level of the year 1930.

Regarding the next period, 1948-1956, the progressive elimination of the complex consequences of World War II and the end of the long period of drought between 1945 and 1947 determined the start of a period of certain stability and normalization in the geodemographical evolution of Romania. In these conditions, the values of the rate of demographic growth were quite high, although the rural space was under special social and economic pressure, such as the introduction of the regime of compulsory quotas of agricultural products (1948-1956) and the action of compulsory collectivization of agriculture.

Analysing the values of the demographic growth, one may notice the positive values, without a single negative value, which determines an increase of the population by 16.27% in the commune of Coşbuc and by 20.22% in the commune of Spermezeu.

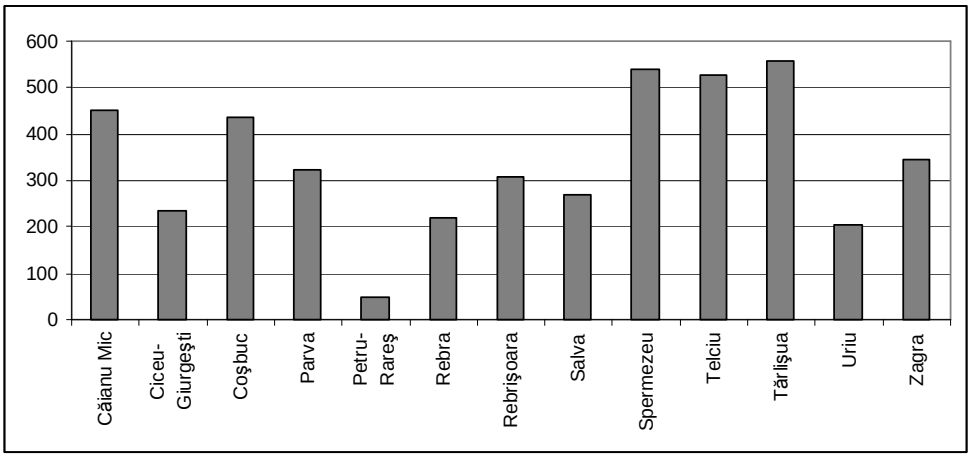

Fig. 3. The numerical evolution of the population in Someşul Mare Hills between 1948 and 1956.

Concerning the period between 1956 and 1966, one should state that several significant changes have been gradually recorded in the economic and social evolution of Romania, starting even at the end of the previous period, and continued after 1966. Among these changes, one should list: a certain development of industry, the elimination of the quota system (1956), the finalization of the collectivization process (so-called cooperation after 1965), the increase of the degree of education of the population due to the development of instruction at all levels. These facts had consequences in the better employment of women in different activities, including industry and services, the increase in the age of creation of family couples, the start and then the acceleration of the migration process from the rural space to urban centres (called the rural exodus), the dissemination of certain concepts regarding the size of the family.

There were areas which resisted the collectivization, and therefore this process did not take place in the valley of Sălăuța, along which the Salva-Vişeu railway was built, attracting the labour force.

Also during this period, one should remark the quite high number of newly built houses. For example, 326 new houses were built in the commune of Târlişua, 29.6 houses annually on average, compared to 164 houses between 1939 and 1949, 312 between 1961 and 1971, and 169 houses between 1972 and 1982.

During the next period (1966-1992) of 26 years, a significant decrease of the number of inhabitants has been recorded. Negative values are present in all the geographical subregions. For example, in Ciceului Hills the average annual rate of increase has the value of -43.6 for the period between 1966 and 1977, and the value of -31.14 for the period between 1977 and 1992. In Suplaiului Hills, the average annual rate of increase has the value of -147.2 for the 1966-1977 period and -97.8 for the 1977-1992 period. In Năsăudului Hills, the average annual rate of increase has a negative value (-73.2) for the period between 1966 and 1977, but a positive value (7.35) for the period between 1977 and 1992. At the level of administrative units, only 30.7% of the communes presented positive values between 1966 and 1977. The highest values of the average annual rate of increase were recorded in Parva (14.7), Petru Rareş (1.2), Rebra (7.6), while the most significant decline was recorded in the cases of Telciu (726), Târlişua (638) and Ciceu-Giurgeşti (448), due to the migration of the young population to the urban centres where industry was developing more and more and labour force was needed.

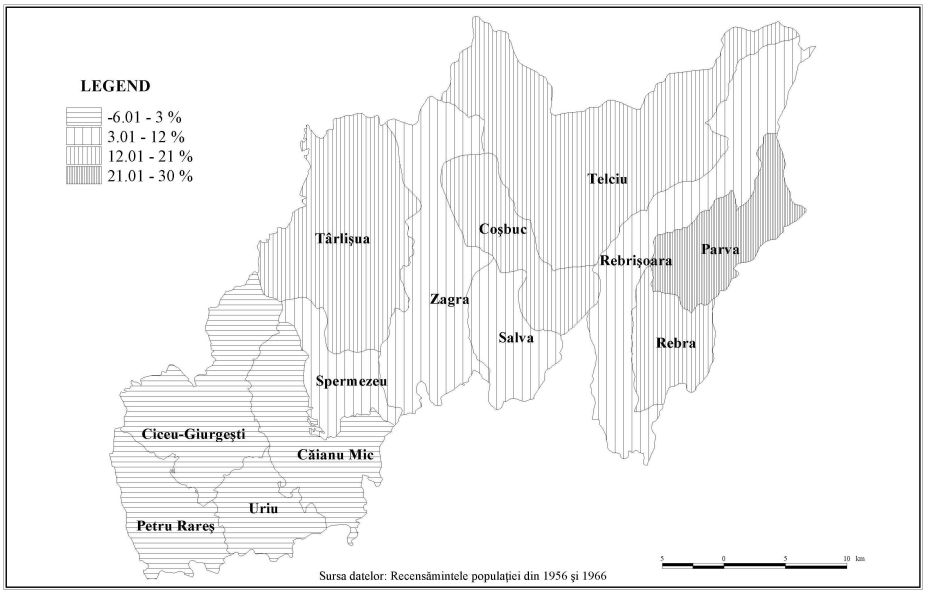

Fig. 4. The rate of population increase between 1956 and 1966.

For the period between 1977 and 1992, the negative values are even more prominent at the level of administrative units. One should remark the negative value of the commune of Ciceu-Giurgeşti, where the average annual rate of increase is -65.2, in fact a decrease in population by 913 inhabitants. The highest value of the average annual rate of increase was recorded in the commune of Salva (18.7), where the population increased effectively with 263 people.

This period is essentially different to all the other periods, as the geodemographical growth was directly related to the changes generated by the Revolution of December 1989. The main change was the transition from the communist restrictive system to one which provides total freedom of expression regarding the family size planning. One of the first measures in the last days of December 1989 was the abolishment of the decree introduced in 1966.

In this period, the complete freedom of abortion in optimal sanitary conditions was added to the total freedom of movement provided by the Romanian state for all of its citizens. Partial or total facilities were also provided by most of the European states and other countries. These major factors determined immediate consequences in the evolution of population, which started to register a decline, which became gradually accelerated. It should be mentioned, however, that the external migration was high only in the first years of the analysed period, while the rate of natural increase, which became negative in 1992, maintained its influence for a long time.

Also, especially after 1990, a phenomenon which is present in these villages is the worsening of living standards, the material shortcomings which accelerate dramatically, the increase of the number of families below the poverty line. In the commune of Târlişua, a number of 115 households remained uninhabited.

The gradual reduction of the external migration in the analysed period, from 1990 until 2000, is a consequence of the less welcoming regime of the developed European states, the U.S., Canada, and other states, concerning the potential Romanian immigrants. Regarding this issue, it should be underlined that, before the change of the political and social system of Romania as a consequence of the events of December 1989, the restriction was a domestic one, as the emigration from Romania was very strictly controlled and difficult to be obtained. However, immediately after 1990, this restriction became an external one, because all the states requested by the Romanian emigration provided selectively and with difficulty visas for residence on their territory. Among these countries, one should mention the states of the European Union, the United States of America and Canada.

After 2002, when some of the European states no longer required visas for a temporary stay, another phenomenon appears on the European Union labour market: the presence of abundant and cheap labour force. As many Romanians no longer had a job, this determined a remigration of a certain number of people.

The period between 1992 and 2002 may be studied, from the point of view of the evolution of the population, in two time segments, 1992-1996 and 1996-2002. In the first stage, between 1992 and 1996, the average annual rate of increase was -0.4 in Ciceului Hills, -97.8 in Suplaiului Hills and -30.6 in Suplaiului Hills. At the level of administrative units, 61.5% of them recorded negative values. The most significant decline was registered in the communes of Târlişua (-58,3), Telciu (-55), Ciceu-Giurgeşti (-47). Positive values of this indicator were recorded in five administrative units: Căianu Mic (5.3), Parva (17), Petru Rareş (46.3), Rebrişoara (41), Uriu (84).

In the period between 1996 and 2002, the decline in number of inhabitants is more obvious in Suplaiului Hills, where the average annual rate of increase recorded the value of -388.4, so a decrease of population from 20494 inhabitants to only 18552 inhabitants. All of the administrative units presented negative values of the average annual rate of increase. The highest negative values were recorded in the communes of Telciu (-110.4), Căianu Mic (-38.6), Coşbuc (-80.2). The smallest decline of the population was recorded in the commune of Parva, from 2826 inhabitants (1996) to 2653 inhabitants (2002).

At the level of the villages, only 18.5% of them presented positive values. The highest values of the average annual rate of increase were present in the villages of Ciceu-Mihăieşti (5.9), Dobric (5.4), Reteag (3.2). The decline in the number of inhabitants is more prominent in the villages located at the contact with the mountain area, where the access is more difficult in this part of Someşului Mare Hills, both because of the poor infrastructure and the distance to the main line of communication of the area (Someşul Mare Corridor). Thus, the most significant decline of the number of inhabitants is recorded in the villages of Bichigiu (an average annual rate of increase of -41) and Târlişua (an average annual rate of increase of – 19.1).

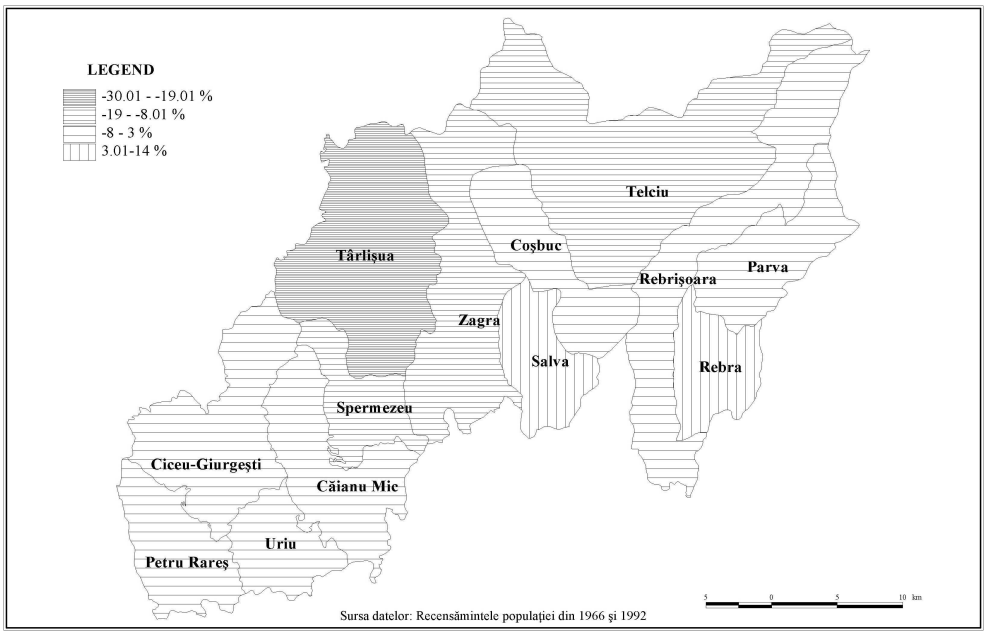

Fig. 5. The average annual rate of increase in Someşul Mare Hills between 1966 and 1992.

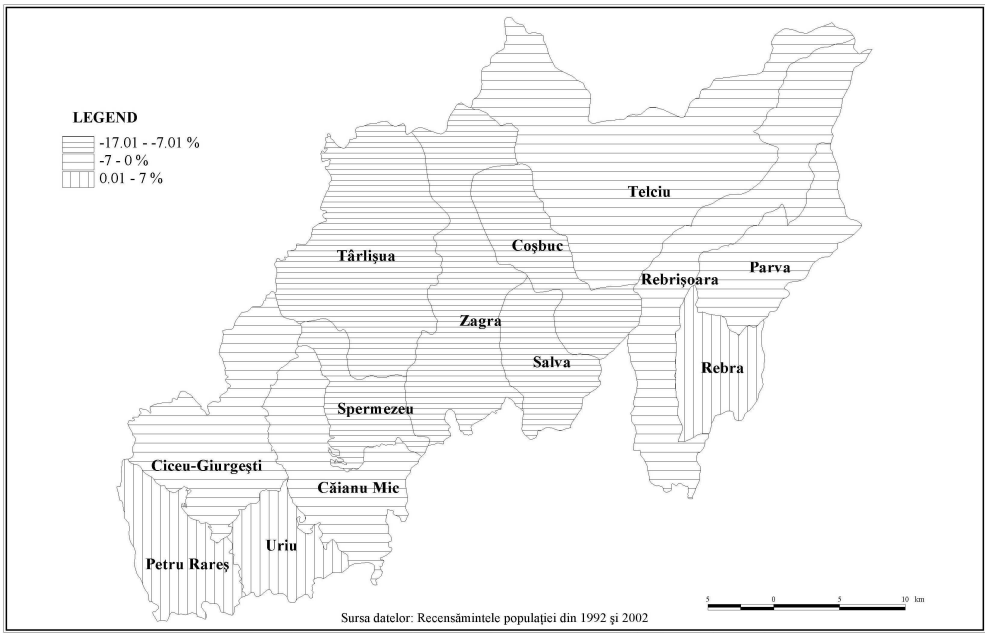

Fig. 6. The average annual rate of increase in Someşul Mare Hills between 1992 and 2002.

2. THE TERRITORIAL DISTRIBUTION OF POPULATION

The territorial distribution of the population is influenced by the natural dynamics of the population of that region, the migrations, and the physical and natural factors which either provide a welcoming environment, or a restrictive one for the settlement of people. The indicator which reveals best the distribution of the population in a territory is the density of population.

2. 1. General density of population

Analysing the evolution of general density of population in Someşului Mare Hills at the level of administrative units, between 1910 and 2002, one may notice a constant density growth in all the 13 administrative units between 1910 and 1956. One may remark that the value of the general density has even doubled in the case of the commune of Salva,

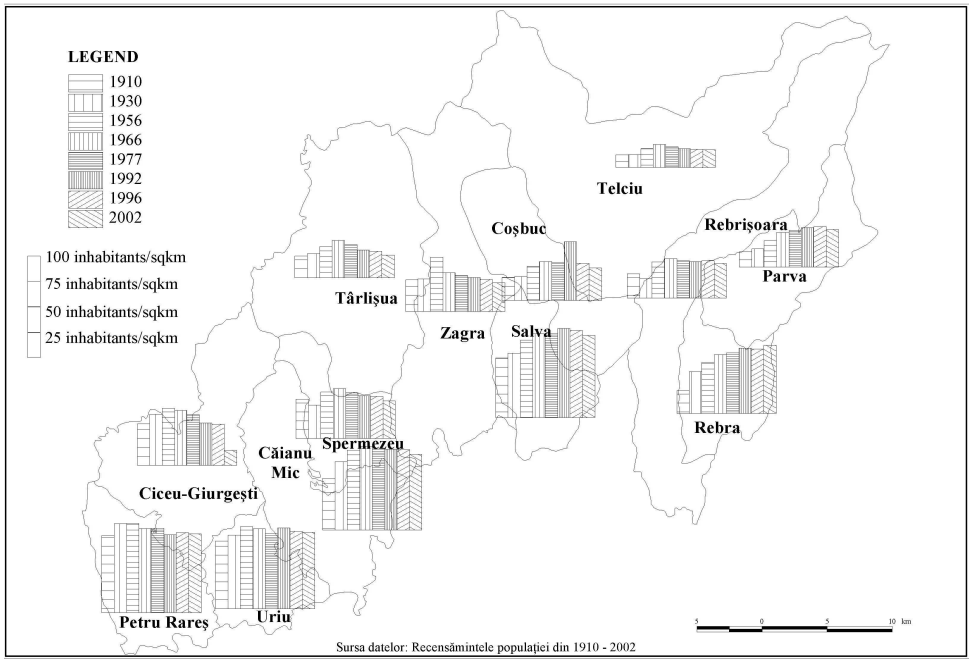

Fig. 7. The evolution of the density of population in Someşul Mare Hills between 1910 and 2002.

which had a general density of 39.3 inhabitants / km^2 in 1910, and 81.6 inhabitants / km^2 in 2002. This fact may be explained by the construction of the railway from Salva to Vişeu, which attracted labour force. At the level of the entire region, the highest value of the density in 1910 was recorded in the commune of Uriu (66 inhabitants / km^2), while the lowest value was recorded in the commune of Spermezeu (13.5 inhabitants / km^2). This low value of the density may be explained by the large areas covered by forests within the territory of this commune, therefore affecting this indicator.

At the level of the year 1966, the value of the density varies between 81.6 inhabitants / km^2 (Salva) and 34.4 inhabitants / km^2 (Parva). A decline in the general density as compared to 1956 has been recorded in the case of three administrative units, Ciceu-Giurgesti, Uriu and Zagra.

Starting with 1977, the value of the general density decreased in most of the administrative units. This tendency was registered in 9 of the 13 units. In 2002, only one commune presented a higher general density than the one recorded in 1996 – the commune of Rebra, which recorded a density of 63.1 inhabitants / km^2 in 1996, compared to 66.3 inhabitants / km^2 in 2002. In 2002, the lowest value of the density was recorded in the commune of Telciu.

2. 2. The agricultural (physiological) density of population

The agricultural density at the level of the entire region has the value of 0.78 inhabitants/ ha. The value is quite low because of the large areas covered by grassland and hayfields. However, when one computes the arable density, the value is much higher, 2.9 inhabitants/ha, in 2002. At the level of the main subregions, this indicator varies from one to the other in 2002. Thus, the agricultural density in Ciceului Hills is 0.7 inhabitants/ha, compared to the arable density of 2.6 inhabitants/ha, in Suplaiului Hills these indicators have the values of 0.6 inhabitants/ha and 2.2 inhabitants/ha, while in Năsăudului Hills the values are 0.7 inhabitants/ ha and 2.9 inhabitants/ha respectively. At the level of the administrative units, the values of the general density vary according to the location within the region. The values range from 0.4 inhabitants/ha (the commune of Zagra) to 1.2 inhabitants/ha (the commune of Salva).

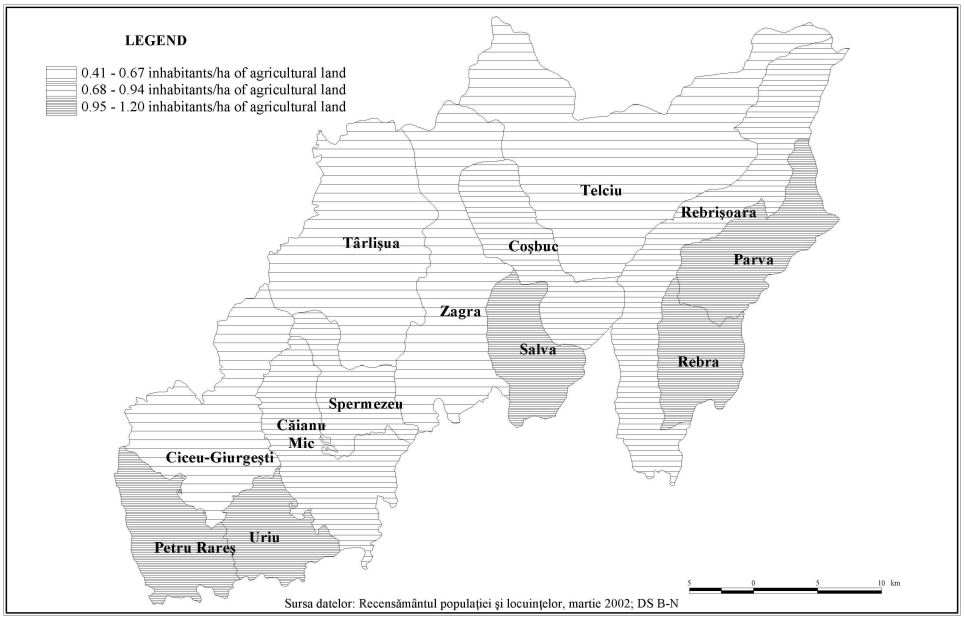

Fig. 8. The agricultural density in Someşul Mare Hills in 2002.

The high weight of areas covered by grassland and hayfields determine a higher arable density in the administrative units located at the contact with the mountain area: Coşbuc (14.59 inhabitants/ha), Parva (8.72), Telciu (7.36). In these units, the area covered by grassland and hayfields reaches 94.9% of the agricultural land of the commune of Coşbuc, 89% of the agricultural land of the commune of Parva and 85.3% of the agricultural land of the commune of Telciu.

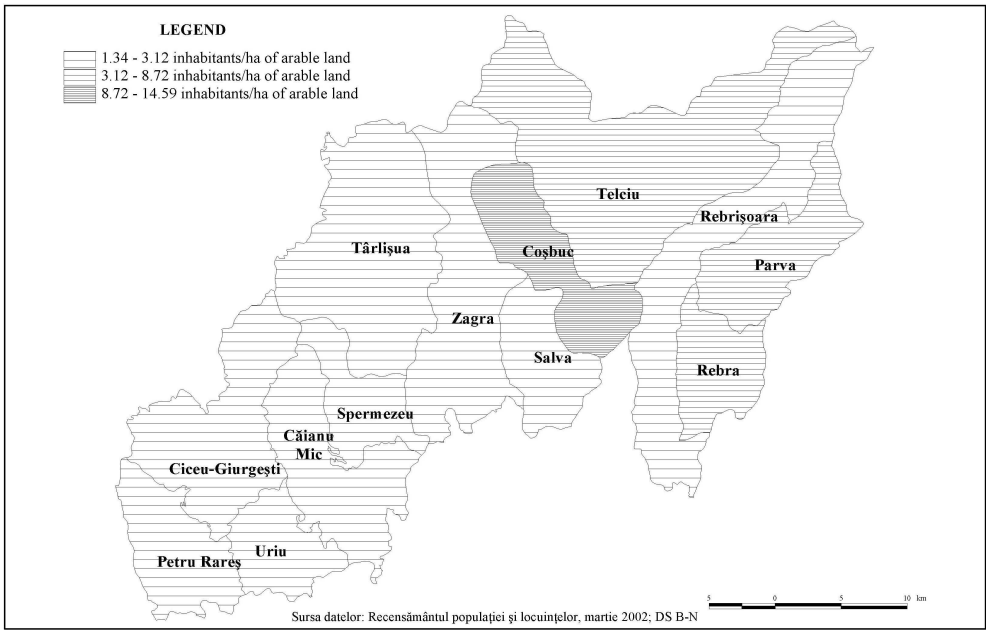

Fig. 9. The arable density in Someşul Mare Hills in year 2002.

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THE ADMINISTRATIVE-TERRITORIAL EVOLUTION AND THE SETTLEMENTS OF ŢAGA COMMUNE, CLUJ COUNTY, BETWEEN 1850 AND 2002

GR. P. POP[1]

ABSTRACT. – The Administrative-Territorial Evolution and the Settlements of Ţaga Commune, Cluj County, between 1850 and 2002. Regarding the **administrative-territorial organization**, the space in which the component settlements of Ţaga commune, from Fizeşului Valley (Cluj County), are localized, preserves traits of inhabitation of the autochthonous population from the oldest times (Neolithic and Iron Age). This was integrated in the social-political and administrative-territorial forms of organization, as early as the state period under the leadership of Burebista and Decebal. After this, at the beginning of the 1st century A.D., it entered under Roman domination. Within the geographic-historical province, *Dacia Porolissensis*, during the above-mentioned periods, at Ţaga and in other places throughout the county, the following were discovered: Bologa (Resculum), Gilău, Aghireşu, Negreni, Turda (Potaissa), Aiton, Cojocna, Pălatca, Ocna Dejului, Căşeiu (Samus) etc. The social-historical factors from the first centuries of the first millennium, favored, probably, by certain natural phenomena of drought from the Asiatic plateaus, contributed to the unfolding of the great migrations of some noteworthy groups of populations towards Europe. The event was characterized by a particular intensity in the region of Roman Dacia as well. This fact contributed to the withdrawal of the imperials to the southern part of the Danube, in the second half of the 3rd century, respectively the year of 271 or of 273/4 (the army, administration and the individuals whose good situation was related directly to the presence of the Roman domination in Dacia). In situations like these, the Dacian-Romanian population, and later the Romanian one, was obliged, in many cases, to look for more sheltered places in the vicinity of the former habitat, fact that had evident shortcomings as regarding the forms of the administrative-territorial organization for a long period. Once with the weakening and then with the ceasing of the migrations on the territory of our country, in the centuries before the 1st millennium, the ethno-genesis of the Romanian nation took place, which allowed a gradual transition from the simple forms of organization to the making up of the first Romanian political-state systems. Among them there are to be mentioned the *Principality of Gelu*, duke of the Romanians (dux Blacorum), in which the present territory of Cluj County was included as well and where the capital city was situated, respectively at *Dăbâca* or at Cluj-Mănăştur (*castrum suum iuxta fluvium Zomus positum*; History of Romania. Transylvania, 1997, p. 292). Beginning with the 11th – 12th centuries, Transylvania was subdued to different foreign dominations (the Hungarian Feudal Kingdom, Ottoman suzerainty, the Hapsburg Empire, and then the Austrian-Hungarian Empire) which ended only at the beginning of 20th century (1918). Generally, during this long period, the form of the administrative-territorial organization was that of the *county* and of *small rural district*. Towards the end of the period of foreign domination, in 1910, Ţaga commune was comprised in Someş County, Chiochiş small rural district. As a consequence of the results of the First World War, when the union of Transylvania with Romania (1918) took place, the territory of Ţaga commune joined the numerous forms of administrative-territorial organization: county, small rural district, commune and village (1918-1950), region, district, commune and village (1950-1968) and then county and commune (1968

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up to now). On the territory of the actual Ţaga commune, which makes the object of this paper, quite important changes took place, within the context of the administrative-territorial transformations that happened after 1950, at the national, regional and county level. Therefore, in 1954, *Sântejude-Vale* locality was founded, which until then, even if it had a well-individualized precinct of village, extended alongside Goruniş and Sântejude valleys, belonged to Sântejude settlement. Then, even later, when the administrative-territorial reform was given, in 1968 (the transition from regions, districts, communes and villages to counties, communes and villages), until the presently analyzed territory became organized into two communes, respectively *Ţaga*, made of Ţaga, Ghiolţ and Năsal localities and *Sântioana*, made of Sântioana, Cesariu, Sântejude and Sântejude-Valley localities. The inclusion of Ghiolţ locality to Ţaga locality and of Cesariu locality to Sântioana took place as well. On this occasion, Ţaga and Sântioana were united in a single administrative-territorial rural unit, respectively *Ţaga commune*. Regarding the **problem of the settlements**, without giving too many details, it is to mention that the component localities of the commune are registered in documents, with one exception (Sântejude-Valley), during the period of the 12th and the 14th centuries. Thus, the first mentioned locality is Sântejude (1173-1196), followed by Năsal (1215), Ţaga (1243), Sântioana (1305), Ghiolţ and Cesariu (1326). The five settlements of the commune, usually of a scattered type, with some gathering tendencies, are billeted in the middle basin of Fizeşului Valley and on some of its tributaries, on a surface of 100,1 km^2, out of which results a density of 5 villages/100 km^2. Regarding the dimensional aspect, in 2002, they were included in the category of medium-small (Ţaga and Sântioana) and small villages (Năsal, Sântejude and Sântejude-Valley).

Keywords: *administrative-territorial evolution, localities of Ţaga commune, Cluj County, 1850-2002 period.*

1. INTRODUCTION

In several studies realized previously (Gr. P. Pop, the bibliography mentioned at this paper) a series of problems was approached as regards the analysis of the specificity components of the settlements from different places throughout the Transylvania. First of all, among them there are to be mentioned some materials with regard to the native locality (mobility of population, 1974; geotoponimy aspects of the locality's boundary, 1991; model of rural involution), then others related to the population from the hilly zone Surduc-Dej, Valea Bobâlnei, Mănăstireni and Mănăşturu Românesc etc. In the last time, our preoccupations were oriented towards knowing the complex geographical problems of the territory of Ţaga commune. This fact allowed us to choose and to publish two papers about its population, this approach being closed with this one.

2. THE ADMINISTRATIVE-TERRITORIAL EVOLUTION OF THE SETTLEMENTS

The territory where the component settlements of Ţaga commune are localized, situated in Fizeşului Valley (Cluj County), preserves traits of inhabitation of the autochthonous population from the oldest times, this being integrated among the social-politic and administrative-territorial forms of organization as far back as the state period from under the leadership of Burebista and Decebal. After that period, at the beginning of the 1st century A.D., it entered under the Roman domination, within the geographic – historical province *Dacia Porolissensis*, in those times, in Ţaga. Numerous archeological traits were discovered in the vicinity and on the territory of the county, at *Napoca* (as administrative

centre of the province, having a significant military and economical function), Bologa (Resculum), Gilău, Aghireşu, Negreni, Turda (Potaissa), Aiton, Cojocna, Pălatca, Țaga, Ocna Dejului, Căşeiu (Samus) etc.

After the settlement of the Hungarians in Panonia, towards the end of the 10th century, as last migratory population on this part of the European continent, they turned their attention toward the important riches of Transylvania (the gold found in the sands of Arieş, the salt from Ocna Dej, Sic, Cojocna and Turda, the fertility of the soils etc.) They bore many battles of conquest for these riches, first with the soldiers of Duke Gelu and then with his successors. Hence the integration of Transylvania as part of the Hungarian feudal kingdom, took place only towards the end of the 12th century and the beginning of the next one. Once this was finalized, the administrative-military organization into *counties* was established as well. These forms functioned during the times of the principality lead by Gelu, some of these (Dăbâca, Cluj, Turda, Solnocul Interior) including the territories belonging to the existing Cluj County, and to Țaga, Năsal, Ghiolț, Sântioana, Cesariu and Sântejude localities, with the emphasis that even the principality, as major form of organization, has maintained itself until 1541.

The Hungarian Feudal Kingdom ceased from ever existing on the map of Europe, because of two major historical events. The first one was the battle fought in the swamps of Mohács (1526), situated in the vicinity of the confluence of Tisa River with the Danube, between the Ottomans, lead by Suleiman, and the Hungarians of king Louis the 2nd, and the second was the taking into possession of the capital of Hungary, Buda (29th of August 1541). These events had significant consequences regarding the administrative-territorial organization. Former Hungary was divided the following way: its centre became Turkish Pashalic, having its capital at Buda, the counties from the western and the northwestern part of Hungary entered under Hapsburg dominion, and Transylvania as principality, Banat and Parțium were turned into autonomous principality under Ottoman suzerainty (idem, page 516). This situation was maintained until the year of 1686, fact that was confirmed by the acceptance of the Diet of Transylvania on 9th of May 1688. The Diet was synthesizing the separation from the Turkish Empire and the acceptance of the protection offered by Leopold, the emperor of the Hapsburgs.

The ceasing of the Ottoman suzerainty over Transylvania and its entrance under the Hapsburg dominion had, in time, rather important consequences regarding the administrative-territorial organization of the new provinces that have entered in the make-up of the Hapsburg Empire, including Transylvania. Transylvania continued to remain organized in counties and sees (the last ones found in the Saxon and Sekler regions) ruled over by the administrative leaders of the counties, which have gradually diminished the number of their old privileges in the favor of the centralized imperial leadership. In this respect, there is something worth to be emphasized, amongst others, that in the year of 1761 the convening of the assemblies of situations was given up, respectively the Diet regarding Transylvania (based on the system of the three political nations and the four acknowledged religions). The Diet lost its function due to the new administrative-reforming conditions during the time of Mary Theresa and Joseph the 2nd. These took place, especially, during the second half of the 18th century, and particularly when Joseph the 2nd (1764) came to the throne, and then during the period in which this was the king of the Hapsburg Empire (1780-1790). During this period, the Principality of Transylvania was divided into 11 counties and 9 free fortresses.

On one side, the social-politic events that took place at the end of the 18th century, and particularly those from during the following period of almost seven decades of the 19th century

have pursued the emancipation of the Romanian population from Transylvania. In addition, on the other side, the urgent request of separation of the Hungarians from within the Hapsburg Empire reflected itself in rather numerous approaches regarding new administrative-territorial forms of organization. Among these there is the one recorded in the year of 1852, when Transylvania was divided into 10 prefect's offices, with 31 county chief's obs, situation that lasted only until April 1861, after which it came back to the old forms, the counties, that were stipulated in the Leopoldine Diploma from 4th of December 1691.

The same events, as the result of the lack of stability of the Hapsburg Empire, lead to compromise between the Austrians and the Hungarians. Out of this compromise, resulted, in the year of 1867, the Austrian-Hungarian dualism, respectively the Austrian-Hungarian Empire, by which the non-Austrian and non-Hungarian nationalities have remained in the same social-historic conditions as before. These, however, were forced to continue their fight for national emancipation, in order to escape the social-politic oppression under which they stood for many centuries.

Under the conditions of the Austrian-Hungarian dualist pact, the geographic-historical provinces that have always been inhabited by a population with a Romanian majority, Transylvania, Banat, Crişana and Maramureş, were joined to Hungary. These territories were very quickly subjugated, after the year of 1867, by all methods and means possible, to a politic whose single purpose was the assimilation with the population of Hungarian language. This politic was applied in the following: school (only using the Hungarian language, a measure that lead to the elimination of numerous Romanian educational units that existed in the earlier period), church, culture, the limitation of the right to vote of the Romanian population, army, economical oppression, colonization, administrative- territorial organization, etc. (The History of Romania, 2nd volume, 1999, pages 101-174).

The Hungarian authorities, thinking of a new Great Hungary, which was wiped out of the map of Europe after the year of 1526, have rapidly undertaken all the arrangements that were necessary in order to integrate Transylvania into Hungary. This action was considered to be wound up, under the organizational aspect, by Law XXXIII from 1876, that dissolved the older *counties* (11), *sees* (12, out of which five Sekler with their subsidiaries and seven Saxon) and medieval *districts* (five, out of which two Saxon and three Romanian). All these were replaced through the organization of *16 counties*: Kolozs (Cluj), Szilágy (Sălaj), Szolnok-Doboka (Someş, in which the component localities of Ţaga commune are included as well), Beszterce-Naszód (Bistriţa-Năsăud), Torda-Aranyos (Turda-Arieş), Maros-Torda (Turda-Mureş), Hunyad (Hunedoara), Alsó-Fehér (Alba de Jos), Szeben (Sibiu), Kis-Küküllö (Târnava Mică), Nagy-Küküllö (Târnava Mare), Fogaras (Făgăraş), Brassó (Braşov), Háromszék (Trei Scaune), Csik (Ciuc) şi Udvarhely (Odorhei). In the year of 1910 and after it, until the union of Transylvania with Romania took place, the counties (registered in censuses under the name of - vármegye) are to be found under the same shape, with the emphasis that these were divided in *small rural districts* (járás), 91 totally throughout the 16 counties.

As far as Someş county is regarded, to which the examined commune once belonged, in the year of 1910, with a surface of 4805 km² and a population of 251936 inhabitants, was characterized through a relatively curious extension, especially in the northwestern area, where it also included a part of Copalnicului Hills (subunit of Chioarului Hills). Eight districts were part of it: Beclean (with 46 villages, 14,9% of the surface of the county and 14,8% of the number of the inhabitants); Chiochiş (39, 10,2% and 10,2%); Ciachigârbou (45, 12,8% and 12,5%); Dej (51, 16,7% and 17,6%); Copalnic Mănăştur (19,

5,6% and 5,1%); Gherla (38, 10,9% and 11,7%); Ileanda Mare (44, 9,3% and 8,5%) and Lăpuşu Unguresc (35, 18% and 12,3%), to which the following cities were added, Dej (0,9% of the surface and 4,5% of the inhabitants) and Gherla (0,2% and 2,7%).

On account of the results of the First World War, having in view the formation of the national states based on the principles of *"nationality and natural right"*, spread around with more and more insistence since the second half of the 19th century and the first two decades of the 20th century. The final point in this respect is the message addressed to the Congress of the United States of America by President Wilson (18th of January 1918). The general conception of this message was *peace* and *self-determination of the oppressed nations*. The desire of the population living in the Carpathian-Danubian-Pontic, had for many centuries, was finally accomplished: *the union with Romania of the geographical - historic provinces Transylvania, Banat, Crişana, Maramureş, Bucovina* (from the former Austro-Hungarian monarchy) *and Basarabia* (the Tsarist Empire). In this way, in the year of 1918 *the union of the National Romanian State came into completion.*

In this new situation, after the year of 1918, major necessities appeared in the geographical-historic provinces united with Romania. There were many problems that needed to be solved. Among these, there was *the legislative unification and the administrative system* that were still bearing the seal of the old state of things, from the Austro-Hungarian monarchy and the Tsarist Empire. The existing situation required a certain period of transition. One of the important issues regarding the administrative system was the *administrative-territorial organization*, whose basis was established by the Constitution of Romania from the year of 1923. In this Constitution, *the county and the commune* are registered as administrative-territorial units with juridical personality. The number, length and subdivisions that belonged to these were left up to the administrative laws, elaborated in the years of 1925, 1929 and 1936, when another territorial subdivision was added, respectively *the small rural district* (without juridical personality).

Based upon the reform that took place in the year of 1925, the county, surrounded by Maramureş (in the north), Năsăud (in the east), Cluj (in the south) and Satu Mare (in the west) counties, with a surface of 4714 km² and a population of 259000 inhabitants, was covering in its space a number of 261 rural communes (the equivalent of villages) and two cities, respectively Dej (the capital of the county) and Gherla. These two cities were organized in eight small rural districts: Dej, Ileanda, Lăpuş, Reteag, Beclean, Chiochiş, Gherla and Gârbou (Minerva, Romanian Encyclopedia, 1929, page 882).

The second administrative-territorial reform accomplished in Romania, after the first World War (the year of 1929, lead to certain modifications regarding Someş County, reflected with accuracy in the Census of the population from the 29th of December 1930. Among these, the eight small rural districts that existed before the county, were re-dimensioned and re-defined on more functional basis' and the establishment in another conception of the administrative units, in the sense that the county used to include *cities, small rural districts, communes and villages.* Under this new condition (the year of 1930), Someş County, with a population of 219 355 inhabitants, was formed out of two cities, respectively Dej (15110 inhabitants) Gherla (6608 inhabitants) and six small rural districts. The six small rural districts were the following: Beclean (40 villages), Dej (61), Gârbou (21), Gherla (52 villages including the six localities of the existing Țaga commune, respectively *Cesariu, Ghiolț, Năsal, Sântejude, Sântioana and Țaga*), Ileanda (50) and Lăpuş (32). The conclusion of what was presented above is that throughout the county there is evidence of the existence of the two cities and of the 256 villages that were organized in communes, and to which it belonged 90% of the population of the county. With

regard to the geodemographic dimension of the small rural districts, the following order was registered: Dej (26, 8%), Gherla (19, 6%), Beclean (19, 2%), Lăpuş (14, 3%), Ileanda (12,8%) and Gârbou (7, 3%). The emphasis that can be made regarding the six localities of the existing Ţaga commune is that it held 2% of the rural population of the small rural district Gherla.

The annexation to Hungary, after the Dictate from Vienna (August 30, 1940), of some parts of the geographical-historic provinces of Transylvania, Crişana and of Maramureş, meant the return to the old Hungarian counties that existed in the year of 1910. Someş county (Szolnok-Doboka vármegye), with 260 villages and two cities (Dej and Gherla), was divided into six small rural districts (járaás): Beclean (44 villages), Dej (56), Chiochiş (35), Târgu Lăpuş (31), Ileanda (61) and Gherla (33 villages).

Under the highlighted circumstances, the localities of the existing territory of Ţaga commune, respectively Ţaga, Ghiolţ, Năsal, Sântioana, Cesariu and Sântejude, were joined, once again, to Chiochiş small rural district. This form of administrative-territorial organization of Someş county, certainly, with the return to Romania, in the year of 1944, of the geographical-historic regions mentioned above, was found in the census of the population and in the agricultural census that took place in the year of 1948.

With the year of 1950, the territory of Romania, as a result of the social-politic system that was established after the Second World War, was submitted to some modifications that were in total contradiction with the national Romanian specific. The regions and the districts were introduced in the place of the previous forms (the communes were left approximately in the same condition). Therefore, in the year of 1950, in the place of the 58 counties, the 424 small rural districts and the 6248 communes, 28 regions were established, with the districts and communes that belonged to each one of them. After this, in the year of 1952, the number of the regions was reduced to 18. On this occasion, the *Autonomous Hungarian Region* was created (having its residence in Târgu Mureş). The year of 1956 corresponded with the abrogation of two other regions (Arad and Bârlad). Therefore, the territory of Romania came to be divided into 16 regions: Suceava, Iaşi, Bacău (in Moldavia) and Galaţi (in Moldavia and Muntenia), Bucharest, Ploieşti and Piteşti (Muntenia), Constanţa (Dobrogea), Craiova (Oltenia), Timişoara (Banat), Oradea (Crişana), Baia Mare (Maramureş), Cluj, Hungarian Autonomy, Hunedoara and Stalin (the residence in Stalin city, the denomination of Braşov in that respective period). The city of Bucharest (with 8 districts and 12 suburban communes), then 192 districts and 4314 communes were added to all these.

As far as *Cluj Region* is concerned, in the year of 1950 it included eight districts: Cluj, Gherla, Dej, Turda, Aiud, Câmpeni, Huedin and Jibou. Two years later (1952), the area of the region was increased in its surface after including six more districts: Bistriţa, Năsăud and Beclean, resulted from the abolition of Rodna district, Sărmaş and Luduş were taken from Maramureş region, and Zalău district has been established. In this way, in the year of 1956, a super dimensional administrative-territorial unit was constituted: with a surface of 28000 km², 14 districts, 11 cities, 327 communes and 1507 villages. It was very difficult to coordinate the entire complex of social-political problems that were characteristic to the national Romanian specific.

The end of the year of 1960 corresponded to another adjustment (reorganization) regarding the administrative-territorial divisions. This adjustment consisted in the redefining of some regions in concordance with the denomination of the geographical - historic provinces: Dobrogea (instead of Constanţa), Oltenia (Craiova), Banat (Timişoara), Crişana (Oradea) and Maramureş (Baia Mare) or based on other different criteria: Argeş (instead of Piteşti), Braşov (Stalin) and Mureş-Hungarian Autonomous (The Autonomous Hungarian Region). Some

districts were passed over from one region to another. The same happened with some communes and villages. In this context, Cluj Region registered certain modifications that consisted, on the whole, in the joining of two of the districts of the unit, respectively *Luduş and Sărmaş*, to the Hungarian Autonomous Region, and three other – Cluj, Beclean and Jibou – were dissolved, and the communes that belonged to them were redistributed to the neighbouring districts. The result of this situation was that Cluj Region reached, in the year of 1961, a total surface of 16820 km², nine districts (Câmpeni, Aiud, Turda, Huedin, Zalău, Dej, Gherla, Năsăud and Bistrița), 14 cities, 290 communes and 1427 villages.

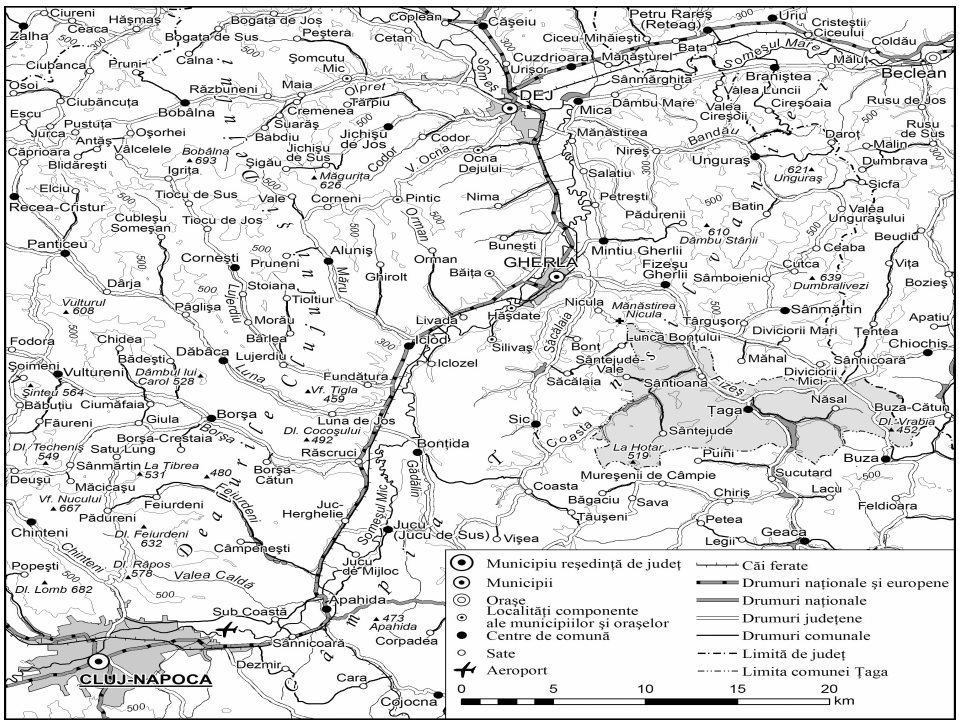

Fig. 1. The position of Țaga commune as part of Cluj County.

Several favourable elements in the social-politic evolution of Romania, in the seventh decade of the XX century, led to the ideea of returning to the form that existed in the year of 1950. As a consequence of this fact, through Law no.2/1968 the territiory of the Socialist Republic of Romania was divided into administrative-territorial units: *the county, the city and the commune*. Each one of these units are broadly deffined in the above mentioned law. Under these circumstances, the territory of Romania was organised into 39 counties. Bucharest Municipium (with six sectors) and the Agricultural Sector Ilfov (subordinated to Bucharest Municipium). On this occasion, a considerable decrease of the number of communes took place (2706, compared to 4290 on the 1st of January 1961). Certainly, later other modifications have interviened, at a national level: the establishment of Călărași county and the transformation of the Agricultural Sector Ilfov into a county, the apparition of numerous cities, the reduction of a certain number of communes and villages, etc.

On the basis of the law from 1968, Cluj county, with a surface of 6650 km², having as neighbours Sălaj and Maramureş counties (in north), Bistriţa and Mureş (in the east), Alba (in south) and Bihor (in the west), was organised into six cities: Cluj-Napoca, Turda, Dej (with the componenet localities Ocna Dejului, Peştera, Pintic and Şomcutu Mic), Câmpia Turzii, Gherla (Băiţa, Hăşdate, Silivaş) and Huedin (Bicălatu). The first three had the status of municipium and were composed out of 74 communes and 420 villages (without the localities that were the components of the cities). During the 38 years that passed since the last reform (1968) until the present day (2006), Cluj County registered less significant modifications regarding the administrative-territorial organization. After the year of 1990, the cities Câmpia Turzii and Gherla were recorded as being municipiums; the number of the communes was increased from 74 to 75, after the forming of Negreni commune (11th of July 2002). Negreni commune resulted from the separation of three villages that belonged to Ciucea commune (Negreni, Bucea and Prelucele). Ciucea commune was left formed out of two villages (Ciucea and Vânători). Several localities disappeared from the map of the county, because of the decrease of the number of their inhabitants. These were the following localities: Peştera (component of Dej city), Lunca Bonţului (Fizeşu Gherlii), Andici (Ceanu Mare), Casele Miceşti (Feleacu) and Giurcuţa de Jos (Beliş). The precincts of village Giurcuţa de Jos was covered by the waters of Lake Fântânele (the upper basin of Someşul Cald river). Its population was marked with "zero" at de census that took place in 1992. Ten years later (2002), 11 inhabitants have reappeared at Casele Miceşti, but a new locality without inhabitants was recorded, respectively Borşa-Crestaia (Borşa commune), that lost the last two persons that were last recorded living there in 1992.

Rather significant modifications took place, in the context of the administrative-territorial transformations, at a national, regional and county level, in the territory of the existing Ţaga commune, which is the object of this present paper. Therefore, in the year of 1954, locality Sântejude-Valley was established, even tough, to that date, the locality had a well-individualized precinct of village, spread in Goruniş and Sântejude Valley, and used to be part of Sântejude settlement. The inclusion of Ghiolţ settlement to Ţaga locality, and of Cesariu locality to Sântioana took place, some time later, on the occasion of the administrative-territorial reform that took place in 1968 (the passing over from regions, districts, communes and villages to counties, communes and villages). In that period, the existing studied territory was organized into two communes, respectively Ţaga, formed out of Ţaga, Ghiolţ, Năsal and Sântioana localities, constituted from Sântioana, Cesariu, Sântejude and Sântejude-Valley localities. On this occasion, Ţaga and Sântioana communes were united in one single rural administrative-territorial unit, respectively Ţaga commune.

In such a configuration, Ţaga commune, registered among the other 75 administrative-territorial units of the same category with Cluj County, is spread on a surface of 10001 ha and has 2158 inhabitants (the Census that took place in 2002). The situation of the component localities, with the specification of the two values from total per commune, is presented the following way: Ţaga (2910 ha and 851 inhabitants, respectively 29,1% and 39,4%), Năsal (2887 ha and 406 inhabitants, namely 28,9% and 18,8%), Sântejude (1331 ha and 215 inhabitants, with a ponderability of 13,3% and 10%), Sântejude-Valley (793 ha and 105 inhabitants, meaning 7,8% and 4,9%) and Sântioana (2080 ha and 581 inhabitants, the frequency for the two values being of 20,8% and of 26,9%).

3. THE SETTLEMENTS

Regarding the knowing of the settlements, as places of residence of the population, it is indispensable to take into consideration the aspects regarding the evolution of these, in time and space, their territorial repartition, including the aspect concerning their altitude, their typology of structure and texture, then the dimensional one, the fulfilled functions etc.

3. 1. Brief considerations of evolution

Emerged and developed to their existing form, in direct relationship with the human presence and of his estate (upturned land or limited field), the settlements belonging to Țaga commune are known from the oldest times. The archeological traits and then the documentary ones emphasize the continuity of the fact that people have inhabited the space that corresponds to Fizeşului Valley basin, from the Neolithic until the present times.

Without entering into more details, since the aspects of prehistoric evolution and then the historical ones of the settlements are followed with much attention in the History chapter, we note that the component localities of the commune appear to be registered in different documents, with one exception (Sântejude-Valley), in the period during the 12th and the 14th centuries. Therefore, the first mentioned locality is Sântejude, between the years of 1173-1196 under the name of Vesscel, in 1315 under the denomination Vasculteleke and in 1334 known as Sacerdos de Sancto Egidio. After 1334, in 1339 its name becomes more like the one it bears today, respectively Zentegyud, and in 1850 reached the form Szinte Zsudie. The mentioning of the second locality – Năsal – dates back to the year of 1215 (Villa Nazalas). This name was kept almost unchanged, until today, respectively Neszál in 1850. Țaga commune was registered to be approximately in the same situation: Chegeteleke in 1243, Czaga in 1750 and Czuga in 1850. Three other settlements belonging to the analyzed territory were mentioned in different documents in the 14th century, respectively Sântioana in 1305, under the name of Scenthyvan, reaching in 1850 the form of Szint Ioanu. The villages Ghiolț and Cesariu are first mentioned in 1326. The first form for Ghiolț was Terra Geuch (1326), followed by Geolz (1438) and then Gyolcz (1850). In the case of Cesariu locality, the order of the denominations recorded in documents was the following: Chazarteleke (1326) and Csészáre (1850) (C. Suciu, 1967, 1968).

Shortly before the end of the foreign domination over Transylvania, the denomination of the studied settlements, registered in the census that took place in the year of 1920, was the following: Csege (Țaga), Göcz (Ghiolț), Noszoly (Năsal), Vasasszentiván (Sântioana), Császári (Cesariu) and Vasasszentegyed (Sântejude).

Several significant moments of threshold, can be distinguished, in the following period of evolution of the administrative-territorial situation and position (1918-2007) of the settlements of the commune: the registration into the census that took place in the year of 1930 of Țaga, Ghiolț, Năsal, Sântioana, Cesariu and Sântejude settlements. The year of 1956 corresponded with the emersion of Sântejude-Valley village, former small village, hamlet, of Sântejude locality until the year of 1954, this having 348 inhabitants at the time of the census that took place in 1966. The new administrative-territorial reorganization from the year of 1968 (the passing from regions, districts, communes and villages to the form of counties, communes and villages) included, as a result, Ghiolț village into Țaga locality, and of Cesariu Village into Sântioana locality, situation that is held until today, so that, nowadays, Țaga commune is formed out of Țaga, Năsal, Sântejude, Sântejude-Valley and Sântioana localities.

3. 2. The distribution of the settlements

The five component localities of the commune dispose of a territory with a surface of 100, 01 km², resulting from these a density of 5 villages/100 km², that is strongly reduced in comparison to the one found at the level of Cluj county (6, 4 villages/ 100km²) and then its rural (6, 9 villages/100km²). Through the value of the mentioned density, Ţaga commune is evidently overrun by the numerous communes situated both in the Transylvanian Field (Mica, Cătina, Pălatca, Ceanu Mare, Frata, Tritenii de Jos) and in the Hills of Cluj and Dej (Bobâlna, Jichişu de Jos, Cornești, Recea-Cristur etc.), which have over 10 villages/100km²). By this Ţaga is much like many other communes situated in the mountainous part of the county (Valea Ierii, Măguri-Răcătău, Mărişel, Beliş, Gilău, Poieni etc.), where there are registered under 5 villages/100km²).

From the point of view of the altitude, the localities of the commune are situated beginning with approximately 275 m (Sântioana, the confluence area of Husuerului Valley with Fizeşului Valley) toward 370 m at Sântioana, through the former settlement Cesariu. The other precincts of the villages go up to values situated around 305 m at Sântejude-Valley, 330 m at Ţaga (including the former locality Ghiolţ) and 350 m at Năsal and Sântejude.

The conditioning of the orographic and hydrographic factors, to which it is added, having a significant role, the social-historic factor, emphasizes, very well, the existent geographical position of the localities belonging to the commune. As far as this is concerned, it is established that the precinct of the settlements has always avoided the wide river meadow of Fizeşului Valley, matured and constantly covered by swamps, including the phenomenon of bogging and even the one of lake formation. The same situation is characteristic to one of the affluent valleys of the main river that is situated on the territory of the commune. As a result of this fact, the population established their households and farms on the platforms of the terraces or on the mountainsides with a reduced slopes. On the other side, even tough Fizeşului Valley was an axis with good possibilities of circulation for the penetration of different allochthones, was avoided by multimillenary inhabitants of these places. They established the precincts of the villages in the classic basins of the native places (Năsal and Sântejude), on the mountainside (the former locality Cesariu), near some of the tributaries of Fizeşului River (Sântioana, Ţaga and the former locality Ghiolţ) or even on one of the tributaries that is of an inferior order (Sântejude-Valley). The development of the precincts of the villages in Fizeşului Valley took place only in the period when the geographical space in which the commune is positioned entered in a certain social-historic stability.

3. 3. The form, dimension and function of the settlements

In general, concerning their form, the settlements are registered in the category of the scattered villages, with narrow streets stretched alongside the valley. A certain tendency of gathering is characteristic to those with a clear disposing in the basins of origin (Năsal and Sântejude), the second one occupying, disposed in a tentacular form, both the space in the valleys, and a part of the mountainsides that correspond to them. Two of the settlements are of a polynuclear type, formed, as emphasized before, through the inclusion of Ghiolţ village to Ţaga locality and of Cesariu village to Sântioana (in the year of 1968). The precincts of the settlements included, at the date of the census from 18th of March 2002, 1117 buildings with 1135 homes. The distribution at the level of the villages is presented, in order, in the following way: 350 and 368 at Ţaga, 261 and 263 at Năsal, 278 and 277 at Sântioana, 121 and 121 at Sântejude and 107 and 106 at Sântejude-Valley. Regarding the degree of occupation of the

houses, in the same year, at the level of the commune was 1,9 persons/house, with pretty important differentiations from one village to another: 2,3 persons/house at Țaga, 2,1 at Sântioana, 1,8 at Sântejude, 1,5 at Năsal and only 1 person/house at Sântejude-Valley.

The dimension of the localities, in a period of almost one century (1910-2002), has evolved proportionally to the evolution of the number of inhabitants and the modifications that intervened in the administrative-territorial organization of the villages of the commune.

The geodemographic dimension of the settlements and the administrative-territorial modifications in the space of Țaga commune, during the period 1850-2002

Table 1

Localitatea	1850	1910	1930	1941	1956	1966	1992	2002
Țaga	672	633	597	645	758	694	882	851
Ghiolț	403	569	610	567	601	482	-	-
Năsal	907	850	969	1125	1311	1142	541	406
Sântioana	484	492	554	1004[1]	566	461	549	581
Cesariu	215	313	360	-	389	383	-	-
Sântejude	804	998	945	984	664	548	227	215
Sântejude-Vale[2]	-	-	-	-	247	348	114	105
Total	**3485**	**3855**	**4035**	**4325**	**4536**	**4058**	**2313**	**2158**

[1] Includes Cesariu locality; [2] Small village of Sântejude locality until the year of 1954.

Therefore, in the year of 1910, two of the six settlements (Sântioana and Cesariu) were part of the category of the small ones (under 500 inhabitants), and the other four (Țaga, Ghiolț, Năsal and Sântejude), were joined to the medium-small ones (500 – 1000 inhabitants) (Table 1 and figure 2).

The social-historic modality of evolution at national, regional and local level, during the mentioned period, as a result of the two World Wars and especially of the geodemographic of the Romanian rural registered during the social-economic and communist politic period. These events determined essential modifications concerning the dimension of the localities that belong to the commune.

In this respect, if in the year of 1930, based on a raised geodemographic potential, five of the localities of the analyzed territory were registered in the category of the medium-small villages (Țaga, Ghiolț. Năsal, Sântioana and Sântejude) and one among the small ones (Cesariu). In the year of 1956, when the existing territory of the commune registered the highest level of geodemographic development (4536 inhabitants), it reached to the situation where one of the seven villages was situated in the category of the medium-small villages (1000-1500 inhabitants), respectively Năsal (1311 inhabitants). Other four villages were included between the medium-small (Țaga, Ghiolț, Sântejude and Sântioana), and two belonged to the small villages (Cesariu and Sântejude-Valley, the last one appeared after it separated from Sântejude village, in the year of 1954).

Beginning approximately with the year of 1956, a very powerful process of decrease of the population of the existing commune took place; therefore, in the year of 1966, it reached at only 4058 inhabitants. This situation lead to the positioning of the localities into another dimension: four being small villages (Ghiolț, Sântioana, Cesariu and Sântejude-Valley), two included among the medium-small ones (Țaga and Sântejude), and one was situated in the category of the medium-large villages (Năsal – 1142 inhabitants).

No. inhabitants

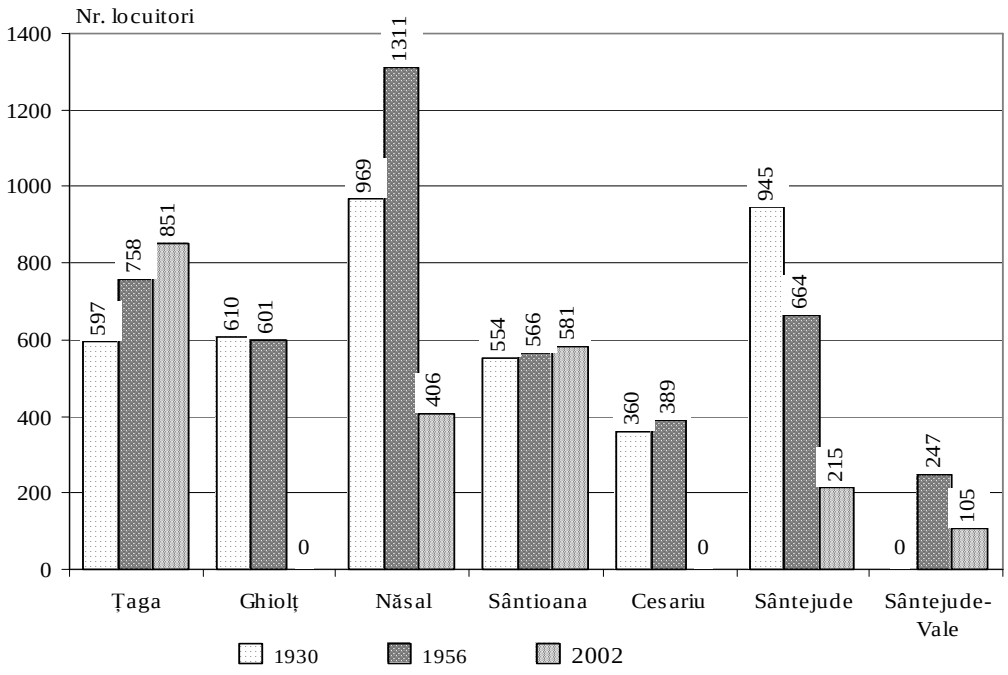

Fig. 2. The geodemographic dimension of the settlements and the administrative-territorial modifications in the space of Țaga commune, during the years of 1930, 1956 and 2002.

The process of geodemographic diminution continued its course much more powerfully in the following period, when certain administrative-territorial modifications took place (in the year of 1968 out of the former communes, Sântioana, with the component villages, Sântioana, Cesariu, Sântejude and Sântejude-Valley and Țaga, with the following villages, Țaga, Ghiolț and Năsal that formed Țaga commune. During the same period Cesariu locality joined Sântioana, and Ghiolț joined Țaga). As a result of this fact, Țaga commune registered, in the year of 1992, only 2313 inhabitants. The five villages were included as it follows: three in the category of the medium-small villages (Țaga, Năsal and Sântioana), and two in the category of the small villages (Sântejude and Sântejude-Valley). In comparison to the year of 1992, in 2002 Năsal locality entered the category of the small villages and Sântejude-Valley is very close to be registered in the subcategory of the very small villages (table 1 and figure 2).

In accordance with their territorial position, the settlements fulfill an agricultural function, which clearly results from the raised frequency of the population that works in this economical branch. Therefore, in the year of 2002, 46% from 2155 inhabitants of the commune represented the active population, out of which around 65% was working in agriculture, with differentiations of frequency from one village to another, at Năsal, Sântejude and Sântejude-Valley, these passing 70%, and Țaga, Sântioana, both represented around 57%. In the last two localities approximately 25% from among the active ones were working in the industry that functioned at Țaga (exploitation and primary processing of methane gas and processing of milk), as well as in some industrial units from Gherla Municipium.

4. CONCLUSIONS

As regards the evolution and the geographical specific features of the localitie from Țaga commune, some aspects of generalization can be highlighted:

- the component settlements of the commune appeared and evolved in a tight relation with the particularities of the natural factor (the western part of Transylvania Plain) and of the social-historical one, the archaeological traits of the native population being present even from Neolithic, with an evident continuation in the Metal Age, the commune's territory (with a surface of 100,1 km^2) framing in the forms of administrative-territorial organisation specific for the space of Transylvania;

- alongside the material traces discovered throughout the commune, the ancientness of the settlements is also proved by the early registration of them in the documents, with a single exception (Sântejude-Vale), in the period of the 12^{th}-14^{th} centuries;

- from the viewpoint of geodemographical dimension, the maximum development of the communes' settlements (4536 inhabitants) was registered in 1956, when one of those seven villages belonged to the middle-large ones (Năsal, 1311 inh.), other four being framed to the middle-small ones (Cesariu and Sântejude-Vale, the last one appearing by its detachment from Sântejude village, in 1954). After 1956, a great decrease of the inhabitants' number was registered, so that, in 2002, only two from those five localities of the commune were framed at the middle-small settlements (table 1).

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THE TRANSFORMATION OF VILLAGES INTO TOWNS – A QUANTITATIVE WAY OF HUNGARIAN URBANISATION

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ABSTRACT. – The transformation of Villages into Towns – A Quantitative Way of Hungarian Urbanisation. On 1 July, 2007, the President of the Republic of Hungary awarded the town rank to nine villages, consequently the number of Hungarian settlements possessing town rank reached 298. This rapid, predominantly quantitative urbanisation is highly disputed, although a thoroughgoing research of scholars in their detailed, ambitious prognosis and schedule of the process in 1996 projected nearly the same scenario. The present study investigates the connection between theory and practice, analysing the spatial and settlement pattern of the process.

Keywords**:** *urbanisation, small towns, awarding and gaining town rank.*

The number of towns in Hungry increased again on July 1st 2007: upon the proponement of the Minister for Local Government and Regional Development, the President of the Hungarian Republic awarded town rank to nine former (large) villages[3]. Requested by the Ministry of Internal Affairs, a thorough research was launched in 1996 by the geography departments of Janus Pannonius University, surveying regions with town deficiency and providing a pool of settlements eligible for being awarded town rank. Although the picture then outlined by the researchers might have seemed ambitious, reality has mostly justified the expectations. The fact that the "psychological threshold" of 300 towns was approached this year provides the apropos for an overview of the processes, and confronts the research results from more than a decade ago with what has happened in reality. Seeing the spectacular development of urban network, the question of how to proceed can also arise, i.e. for how long this process can be sustained from a settlement geographic aspect, and what consequences such a development can have on settlement network?

1. THE SETTLEMENT GEOGRAPHIC ASPECT

The issues of town rank qualification emerge from time to time in literature dealing with Hungarian settlement geography and public administration. This is not surprising, with a view to the fact that in the last three decades this has been the most spectacular change both in the picture of public administration and urbanisation. From the 1970s until today, a total of 223 settlements have been awarded town rank, including nine that had their declaration ceremonies in the summer of 2007. As a result of this process, Hungary's settlement network has developed

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[3] Alsózsolca, Ács, Biatorbágy, Bük, Kozármisleny, Körösladány, Maglód, Mándok and Törökbálint.

from a generally "under-urbanised" state in which the number of towns seen on the map was very low even in relation with the level of general social-economic development (BELUSZKY P. 1983) to a status in which the same author aptly categorised about one third of the towns as "village towns" (BELUSZKY P. – GYŐRI R. 2006), this wording suggesting that those settlements do not meet the geographic criteria put forward for towns. Further additions to the picture are the facts that there was not always scientific agreement about the town qualification of several old rural townships of the Hungarian Great Plain region having been awarded town rank for quite a while now, and that various authors have quite different views about the urbanisation processes taking place today. The explication by ZOLTÁN Z. (2002; 2003) emphasising that the creation of a network of 330-350 small towns has important settlement political priorities seemed unrealistic for the time, yet today it is even possible that the lower values of these desired figures are reached within the current governmental cycle. Nevertheless, the authors having published studies in this field in recent years (e.g. SZIGETI E. 1998; KISS É. 2002 and CSAPÓ T. – KOCSIS ZS. 1997; in addition to those mentioned above) are conceptual in saying that it is impossible to put an end to the process of town rank awarding, instead it should be carefully re-regulated.

The legislators were probably either aiming at meeting the concept of decentralisation and paying attention to the special features of Hungarian settlement network, or wanted to widen the (political) opportunities of decision makers, these intentions leading to the absence of numerical and obligatory objectives as part of the regulation, in contrast with earlier practice. There is only one strict limitation put forward in the text of the legal regulation: the aspiring settlement must belong to the administrative category of large (major) villages. In addition to this requirement, there is a general allusion (though specified somewhat, later on) as to the preferred major content of the aspirant's application: it should concentrate on demonstrating the central functions and the developmental level of the large village. These are the two key points put forward in the call as evaluation criteria.

In practice, evaluation proceeds as follows: the ministry complies a summary of the applications (tables and short description), and invites a committee made up by distinguished researchers of settlement issues and delegates of lobby organisations dealing with settlement issues to evaluate the proposals. The evaluations usually categorise the applicants into three groups (to be supported; to be considered; not to be supported), but this classification does not formally oblige the minister in making the decision, but instead he/she can use his/her own points of view in selecting the large villages to be proposed to the President. From this point, the decision process necessarily becomes political and is always subject to lobby fights, thus the final list normally includes much more settlements (sometimes twice or three times as many) than the number originally judged as supportable by the specialist board.[4] As a result of this, the reports, analyses and other accounts appearing in press about the process of town rank awarding usually tend to submerge in talking about the political identities and relation systems of the mayors, members of parliament, great patriots and distinguished patrons of aspiring settlements, coming out with conclusions that are often quite right as to the essence of the whole process.

[4] In theory, it is impossible for an aspirant to be removed from the reviewing committee's category of "unconditionally recommended". However, it has happened several times recently that settlements prioritised by the reviewing committee as highly recommended finally drifted out from the settlements actually awarded with town rank, due to interventions driven by political polarity or because of the aim of preserving the apparent balance between counties. In such cases, there were low-ranked, lucky applicants originally with no chance who were finally awarded the highly desired rank.

The process and practice specified above almost inevitably have lead to the rapid growth of the number of towns. The awarding of town rank follows a peculiar cyclic character. It is not allowed by law to declare new towns in the years of governmental elections, thus there are three possibilities in each governmental cycle year for the aspiring villages. Between 1990 and 2005 there was an apparent tendency in town rank awarding in that only few settlements were appointed in the first year after the elections, and there were much more successful applications towards the end of the cycle. This could be interpreted as initial austerity followed by a more generous awarding behaviour before the coming elections. If the number of applicant settlements winning town rank and their proportions (in relation to the total number of applications) are analysed, a certain "amnesty atmosphere" associated with certain special occasions (changing of the political regime, EU accession) is also observed, with the aspiring settlements having better chances in such years. In such a sense, the year 2007 is totally unusual: it had never happened before that nine new towns were inaugurated within the first year of the governmental cycle. Whether this was only by accident or it signified the increasing intensity of this process, it would be difficult to decide about at this stage. However, it is true that quite a number of settlements (a total of 19) have submitted their proposals this year as well.

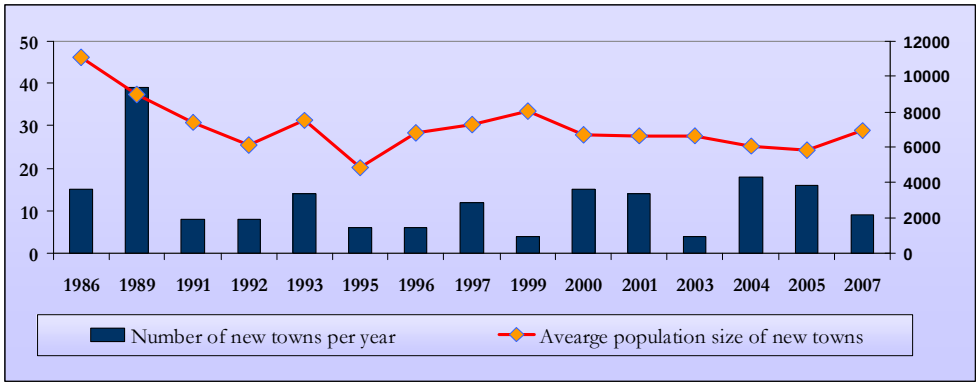
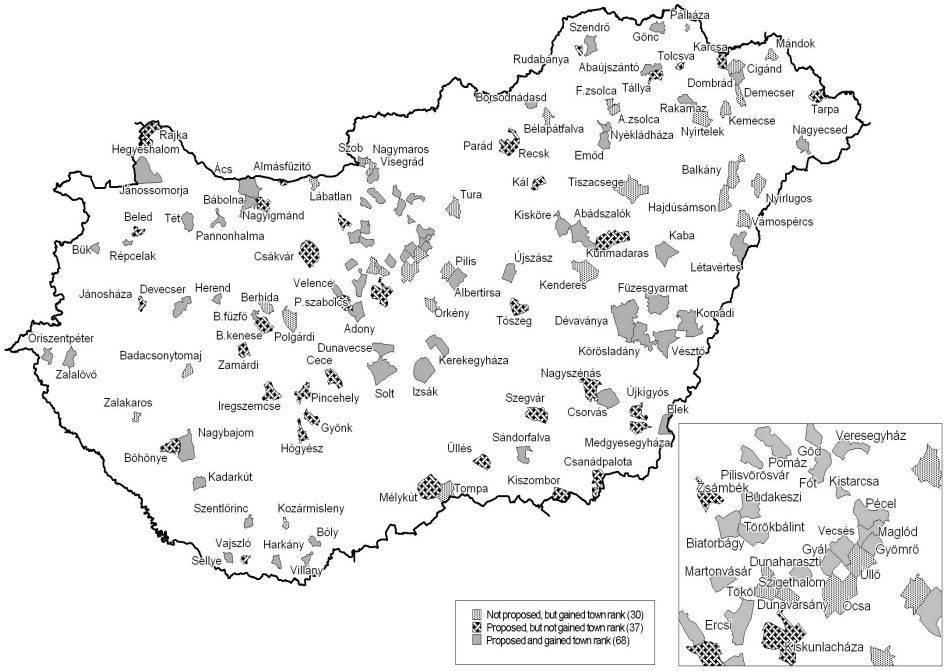


Fig. 1. Numbers and average population sizes of settlements having been awarded town rank between 1986-2007.

Neither the legal regulation declares an objective of creating a coherent settlement network policy, nor can such principles be recognised in the practice of town rank awarding. Not even the absolutely fundamental question whether town rank awarding is a form of acknowledging successful settlement developmental achievements or it is the starting point of a new settlement developmental period has been given answer to, for the representatives of professionals. Partly driven by the considerable negative experience associated with top-down settlement network developmental processes, for the last time it was in the mid-1990s that the political decision maker level wanted to revise the strategy in this matter, and the Ministry of Internal Affairs assigned the professionals at the geography departments of Janus Pannonius University, lead by professor Dr. József Tóth with exploring areas that are town-deficient and settlements that are suitable and eligible for being developed into towns and for being awarded town rank (TÓTH J. – TRÓCSÁNYI A.

1996). The research included direct recommendations, forecasting the inauguration of a total of 105 new towns until 2010, in five stages. Among these, 46 major villages became towns as scheduled or even sooner, 22 were delayed in relation to the forecast but eventually did become towns, and altogether 37 settlements having been recommended initially still have not achieved town rank. Out of the latter 37, 16 were foreseen in 1996 as necessarily becoming towns by 2010. The recommendations projected a definitely dynamic scenario for the development of the network of towns, but even so it did not calculate with an extra 30 major villages that have been successful in making advance in the hierarchy[5].



Edited by Pirisi G., based on Tóth J. – Trócsányi A.

Fig. 2. Recommended (as put forward by the study produced by JP University researchers, 1996) and realised town rank awarding.

From this aspect, the figure showing the spatial distribution of aspiring settlements and of those having been awarded town rank (Fig 2) is illustrative.

[5] The factors causing why certain settlements were awarded town rank despite the fact that they were not listed among the recommended ones were associated with reasons like faster suburbanisation effects than what was foreseen, highly valued settlement-image factors, and the improvement of the eastern parts of the country through urbanisation, meaning also easier access to town rank.

The plans put forward by the research study of 1996 underestimated the pace of urbanisation mostly in counties Tolna, Fejér and Békés: the study recommended the awarding of town rank to several major villages which have not applied for such appointment or it was only earlier this year that they applied for the first time. The only exception is Pusztaszabolcs, with its third attempt in 2007 proved to be unsuccessful again. The concept was very consistent in that when there were two or more settlements in a region with nearly identical levels and sharing the central roles among them, each of them were proposed for being awarded town rank. These usually ended up with only one of them eventually becoming a town (e.g.: Nagybajom – yes, Böhönye – no, Sellye – yes, Vajszló – no), but there were cases also with neither of them winning the title (Parád – Recsk, Gyönk – Hőgyész, Újkígyós – Medgyesegyháza), and there was only one case with an applicant not listed formerly in the study among the neighbouring settlements, yet coming out as a winner (Tompa – yes, as opposed to Mélykút – no). In this case the local government starting its activities earlier could take advantage of this alertness. The researchers clearly underestimated the urbanisation of Szabolcs-Szatmár-Bereg, and also somewhat Pest counties; in other words they evaluated differently the central functions of large villages in those regions, and in some cases the roles of some resort settlements were misjudged too (Zalakaros, Badacsonytomaj, Visegrád). Yet, altogether it can be stated that the forecast put forward in the study in 1996 has proved to be realistic in the long run. The network of towns continues to develop year after year, and no matter how strongly political decision makers aim at maintaining territorial parity, still there are many corners of the country with extensive town-deficient areas[6].

2. NEW SMALL TOWNS TODAY AND TOMORROW

The practice of town rank awarding today and in the recent past provides an effect of strengthening for the particular types of small towns that were described in the 1996 study (TÓTH J. – TRÓCSÁNYI A. 1996). Among these, the *spatial structural type* exists as the centre of a smaller region or microregion, usually concentrating a variety of functions, especially in the human field, but neither of its sectoral functions or attraction types are outstanding. Such settlements are typically the smallest new towns (e.g. Pálháza and Őriszentpéter), and, among the ones having been awarded town rank this year, Mándok. Towns belonging to the *economic-employment type* have become the most important economic centres of their environment through the presence of one larger or several smaller business enterprises, and they are characterised typically by positive employment balance. Such settlements usually develop dynamically, owing to relatively high local government budgetary incomes generated by the liveliness of economic activities. Such a settlement for example is Körösladány – hosting a significant factory of the Henkel company –, having been declared to be town earlier this year. The next group is that of *classical resort settlements* in which often there are towns with very small population. Typical recent examples include Harkány, Balatonföldvár, Zalakaros, and Burk in 2007. A peculiar group is represented by *towns of the image type*: in these cases the name of the settlement practically functions as a brand name, and the basis of the reputation of the town is ensured by some type of cultural or tourism product or attraction. Although these settlements do not possess true attraction areas, yet they are widely known. This group includes

[6] There have not been any settlements in Nógrád county with the legal status of large (major) village, thus there are no prospective towns there either. Counties with several major villages are usually characterised by higher degree of urbanisation (Hajdú-Bihar, Békés) or there are regularly many applications for town rank submitted from these counties (Pest, Szabolcs-Szatmár-Bereg).

settlements such as Villány, Badacsonytomaj, Pannonhalma, Herend, Máriapócs and Visegrád. Finally, there is also an *agglomeration type*, with growing number of small towns belonging to this category in recent years. In these settlements the very rapid growth of the population has been followed by the establishment of appropriate infrastructure in recent years only. The true central functions of these settlements are usually very limited, and realistically they cannot be significantly stronger in the shadow of larger cities. Their growth, both in terms of quality and quantity, is nevertheless striking. Most of these settlements are found in the surroundings of Budapest, ranging from Pomáz to Pilis, but there are examples also for the dynamic urbanisation, moreover successful applications for town rank, of villages in the zones of regional centres: Sándorfalva, Hajdúsámson, Alsózsolca, Felsőzsolca, Kozármisleny.

What can be the future of town rank awarding in Hungary? In this respect, the opinions of all the parties involved are ambivalent even on their own. There have been doubtful views on the side of both the professionals and the government, as to the continuation of the current practice. Although the reasons of the problems are seen differently, the recommendations for resolving them – i.e. that the regulation should be thoroughly reconsidered – are actually quite similar. This is what is formulated also by the discussion material dated February 2007 and published by the Ministry of Local Government and Regional Development (ÖTM 2007), which, in looking at the problems in the further development of the local governmental system, talks also about the possible modifications to the condition system of awarding town rank, emphasising that towns, primarily, are *„...the regional providers and organisers of public services prescribed by law. This must be formulated in the Act on Local Governments, and the condition system of awarding town rank should be tailored to meet this. (…) The regulation of town rank awarding can be made stricter even without the necessary majority of votes, and the measures of differentiated function assignment can also be applied."* The authors of the discussion document would rather emphasise and strengthen the difference between towns and villages, even by incorporating such a distinction in the Act on Local Governments. Thus, according to the planning document, the criteria in town rank awarding would not only become stricter but would also gain more pronounced outlines in that the main aspects would be the provision of regional public services, and undertaking a central-local functions.

In theory, such an approach seems acceptable from a professional aspect, with only a single – although not negligible – problem. The concept does not include the revision of already awarded town ranks, which truly is almost unimaginable with a view to Hungarian conditions. However, it is probably obvious for all who are familiar with this issue that several of the currently existing towns would not withstand such a trial, because the central role was only one among several criteria that were judged when they were awarded town rank. The settlements belonging to the image-type are surely in this situation, and even if the overwhelming majority of agglomeration small towns are urban in their character, yet they do not possess regional roles or any elements of significance beyond their own self. Apart from this very idea, there is probably no stricter regulation that would not cause an unjust situation. The genie has escaped from the bottle: there are several settlements having been awarded town rank in recent years, in comparison with which there would be several similarly qualified major villages throughout the country or even ones with better indicators. If town rank is going to be given true content in the future by legislators, than it would be reasonable to assess the levels: settlements with similar developmental levels should be grouped within the same category, and this seems more feasible in the category of towns than in major village status. Accordingly, it is expected that further major villages will be appointed even if stricter regulations are to be introduced, maybe at a decreased rate of awarding.

If the currently applied practice is continued, it would increasingly mean that instead of the complexity that was required earlier from towns, a single feature or few characteristics in which a village is outstanding will make those villages eligible for being declared a town. The pool of major villages is limited both in terms of numbers and their qualitative constituents. From the current year it will not necessarily take more than 5-6 years for the settlements at least partially playing central role to become towns, whereas the rest of the network of major villages will not be able to fulfil even those soft requirements in the near future. The formation of new major villages and even just the rising of new elements of the settlement structure is only likely in agglomerations and in regions undergoing a process of agglomeration, but even these are very limited in numbers. There have been ideas earlier about major village status to be removed from the requirements, i.e. about giving a chance to settlements with adequate developmental level but without the title of major village[7], but even those settlements would not yield many eligible potential aspirants. The growth of the number of towns will radically slow down some way or another, even without the need for stricter regulation in a matter of a couple of years. It would be more reasonable to evaluate the entire process at that stage. However, right now it is possible to state: even if a settlement does not become a functional town overnight just because of having been awarded town rank, the drive to meet expectations acts as a good motivation, it can assist in achieving developmental objectives, and the project can, in a fortunate situation, bring together the community, thus it is quite sure that town rank awarding are highly beneficial to the development of the settlements concerned. Maybe it can be interpreted as a process in which it is not the achievement that counts in the life of a settlement, but rather the journey that has been made.

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MODELS OF SETTLEMENTS IN SOMEŞANĂ PLAIN (TRANSYLVANIAN PLAIN)

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ABSTRACT. – **Models of Settlements in Someşană Plain (Transylvanian Plain).** On the surface of 1846.7 km² of the Someşană Plain, there are 141 rural settlements. The density of the rural settlements, which is on an average of 7.6 villages/100 km ², is above the average value registered at the level of the whole Transylvanian Plain. The average population density of a rural settlement is of 510 inhabitants, much lower than the average density of the Romanian village. The quantitative and qualitative characteristics of the population and the Someşană Plain settlement (the evolution of the population number, ethnical structure, professional and structures divided on age groups, the training level of the population, the changes which are existent in the municipal structure of the place, as well as the economical development of the locality) foreshadowed the existence of more manifestation modes of the indicators which follow the aspects regarding the human resources and the space in which they deploy their activity. When analyzing the statistical data, several situation can be identified: localities which it is characterized by a balanced *ascendant evolution* from the geodemographic characteristics point of view, which have a favorable position potential, situated near the lanes: or at the intersection of a few important circulation arteries; settlements with a significant *descendant development* regarding the number of the inhabitants, along with numerous structural modifications (in structure of the population grouped on age, a reduction of the number and weight of the active population) and a dynamic determinant of the pronounced growth of negative migration, and settlements which had a *relatively stationary* evolution, where the inhabitant's oscillated number was less then 10%.

Keywords: *regressive type of population, agrarian region, subsistence agriculture, 1850-2002 period.*

1. GENERAL FEATURES OF THE SETTLEMENTS FROM SOMEŞANĂ PLAIN

On the surface of 1846.7 km² of the Someşană Plain, there are 141 rural settlements. The density of the rural settlements, which is on an average of 7.6 villages/100km² is above the average value registered at the level of the whole Transylvanian Plain, the highest rural settlement density (8.5 villages/100sq km), being registered in the Unguraşului Hills, which are followed by the Fizeşului Plain (8.4 villages/100 sq km both characterized by a strong fragmentation and a high number of small settlements. The average population density of a rural settlement is of 510 inhabitants, much lower than the average density of the Romanian village.

In the Someşană Plain, most communes have a low (28%) and a medium (19%) dispersion index, the highest values being characteristic to the communes in the central division of the Plain, with a high number of component villages. Depending on the polarization

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potential, the communal centres are placed at intervals of 0 (the commune of Sic) up to 6.14 (the commune of Lechința). The polarization potential in most communal centres is medium and above average at Plain level (38% and 33%, respectively).

Depending on the characteristics of the relief and the morphological elements of valleys and slopes, several different types of localization of dwelling places can be identified. Most settlements are situated along valleys (particularly along side valleys) on the glacis between floodplains and slopes (due to the water resources and the fertility of the soil), in small basins of origin, or on slopes, where they occupy the areas of interfluves and, extremely rarely, on the structural areas of the slopes' profile.

The average density of the population in villages, in the Someşană Plain is: 5.6 inhabitants/ hectare. In the area of Cojocna Sic Hills, the population density in villages is closely to the above-mentioned value and, respectively, to 5.4 inhabitants/km. In the first part of the 20th century the households with two nuclear families were predominant. In 1910 the average number of persons per household was 4.8, with little variations in the territorial profile. The number of households has risen considerably, from 20.127 in 1910 to 47 066, simultaneously with the reduction in the number of inhabitants. In this way, the average number of persons per household is 1.5.

The main economical activities of the villages in the Someşană Plain are still the same since ancient times. The exploitation of underground resources, of the salt, up until the second part of the 19th, and of the methane gas, beginning with the first decades of the 20th century, did not make changes in the economical profile of the Plain. It has not been considered as a potential region for investments, these being concentrated especially in the surrounding areas, so that it continues to evolve according to the traditional agricultural economy patterns. The big villages on the territory of this division: Cojocna, Bonțida, Jucu de Sus, Sic, Cireşoaia, Unguraş, Lechința, have developed certain non-agricultural activities, generating a functional diversity.

2. SETTLEMENT MODELS

The quantitative and qualitative characteristics of the population and the Someşană Plain settlement foreshadowed the existence of more manifestation modes of the indicators which follow the aspects regarding the human resources and the space in which they deploy their activity. The elements which are taken into consideration are: the evolution of the population number, ethnical structure, professional and structures divided on age groups, the training level of the population, the changes which are existent in the municipal structure of the place, as well as the economical development of the locality which is reflected in the number and the profile of the economic units.

2. 1. The balanced ascendant model- Lechința

In this category fall in localities which in the analyzed time interval, starting from the first modern census on the territory of Transylvania (year of 1850) and until the last census, it is characterized by a balanced ascendant evolution from the geodemographic characteristics point of view.

They have a favorable position potential, which are situated near the lanes: Dezmir, Bonțida, Jucu de Sus (Someşul Mic lane), Agrişu de Jos, Agrişu de Sus (the Șieului lane), or at the intersection of a few important circulation arteries: Lechința, Vermeş, Matei, Nuşeni.

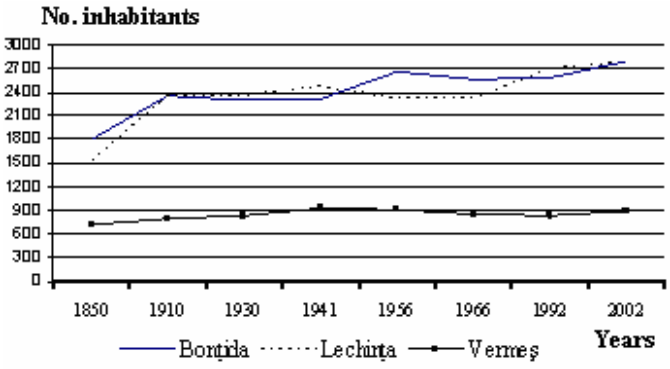


Fig. 1. Settlements with an ascendant evolution regarding the number of the inhabitants, during the period 1850-2002.

The locality Lechinţa is situated on the east compartment of the Someşană Plain - the Hills of Lechinţa, at 27 km South-West towards the town of Bistrita. The name of Lechinţa, in German is Lechnitz and in Hungarian is Szaszlekincze, which comes from the German lech, which means dried, and nitz means stream.

The stream with the same name, is the affluent of the Dipsa river, which separates the town in two.

The town has the benefit of a special settlement because downstream towards this there happens the confluence of Dipsa with Lechinţa, and at the periphery of the locality the county roads intersect: a transversal road which crosses the Someşană Plain and connects with the localities from the Fizeşului valley (Fizeşu Gherlii-Ţaga), crosses the flood between Meleş and Fizeş, goes down into Meleşului (Chiochiş and Matei) basin. Another county road is doubled by the railway with normal way Luduş-Chiraleş, which makes a connection between the Mureşului passage and Someşul Mare passage, crossing the east part of the Mureşană Plain and of the Someşană Plain. The connection with the localities from the Şieu passage- Dipşa, and from the bottom of Şieului it is made also through a county road which once was doubled by a railway with narrow way: Cristeşti-Lechinţa, which is conserved nowadays.

The fist documentary attestation of the Lechinţa locality dates from the year of 1314, but archeological discoveries brought to light traces of a rural settlement which are believed to be from the VI-VII century.

The settlement developed as a feudal village, having in its on advantage the intersection of the roads which connects the extremes of the Flat, matter, which favorizes the trade of the merchandise on the hearth. Since the beginning of the year 1435 the village had its right to trade.

In order to consolidate their reign in Transylvania, the arpadian kings brought massive groups of colonists, starting from the XIII century. These were brought from Flandra, Mosella, Luxemburg, from the right of the Rin, from Saxonia, which names the sas people. In 1602 the locality was destroyed by Basta general's mercenaries, and the population was almost exterminated. After the year of 1602 sas people immigrate into close villages. In Lechinţa settled a large number of sas people, whom lived along with the Rumanians until the year of 1944 (a part of them after) gradually extending the village, achieving to move it down, into the valley, on a place full with swamps. The German ethnic put its fingerprint on the locality's architecture as well as on the social-economic evolution.

In the numeric evolution of the locality's population, there can be identified two significant increasment: 1850-1910 interval when medium growth rhythm was annually 0, 9‰ and the period between 1966-1992 a medium rhythm of 0, 6‰ / year.

The census form the year of 1910 catches a few characteristics of Lechinţa's locality at the beginning of the century:

-the high number of the inhabitants regarding the respective period (2351 person);

-a natural moderate dynamic which is characterized by 4,6‰ natural increase, obtained on the basis of moderate births (23‰) and by a pretty significant mortality (18,4‰) in the conditions in which infantile mortality was less than the recorded medium value at the level of Someşană Plain: 180% comparatively with 194,8‰;

-the structure of the population on age groups point of view, we can remark that the type of the population is progressive, with a share of 38,1% of the young population and a significant one percent (comparatively with the medium situation) of the aged population 7,4%;

-in the ethnical structure of the population the predominant one, was the German (57,7%) followed by the Roumanian (23,8%) the Gypsies (9,5%) and the Hungarian population with an average of 8,8%; the confession having the most adepts was evangelical (60,8%) followed by the Greek-Catholic (21,3) and Israeli (6,8&).

-the extent of liquidation of illiteracy was high regarding that particular period. The population which could write and read had an average of 60,5%, much more significant that in the cases of other localities;

-the houses in the locality were built in 37, 5% percentage from stone and brick, and in 62,5 percentage from wood. The roofs were in 51, 8% percentage made from tile and only in 43,4% percentage from wood. These values hold the substantial municipal development of the locality comparatively with other localities from the east compartment of the Someşană Plain.

After the year of 1910, in the time of the two world wars, and also during the inter-war period, there undergoes a stagnation from a demographical point of view, but where geo- demographical changes occur. So, in the autumn of the year 1944 the sas people have massively left, and the locality was repopulated with inhabitants from near villages and from the Apuseni Mountains.

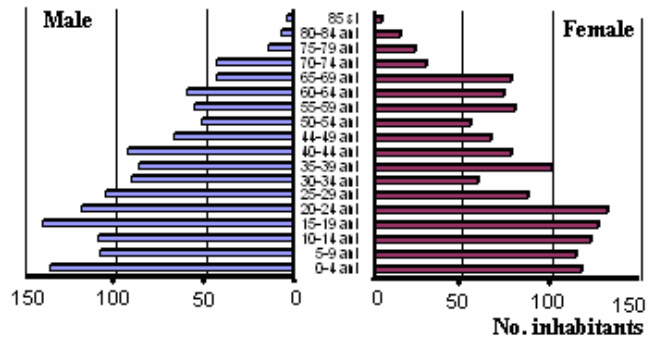


Fig. 2. Population's age and sex composition, in Lechința, at the 2002 census

In present, Lechința has 2795 inhabitants and it's the settlement with the biggest potential of polarizing (6, 14) from the Someşană Plain.

The structure of the Lechința's population, reflects itself in another form of pyramid, of a progressive type, the locality being one of the few from Someşană Plain (with Mintiu Gherlii, Apahida, Bonțida) where during 1992-2002 was recorded a growth of the population. The high birth rate permitted the edification of a pyramid with a solid base in the year of 2002 (fig.2), the young population having in that year a percentage of 35, 3% from the total of the population. The aged population had, in that same year a percentage of only 11, 3% from the total population.

In the structure of the population there were changes of the ethnical structure, with a drastic reduction of the German ethnical inhabitants- only 9 people in the year of 2002, and the entire disappearance of the jews population. During the re-settlement of the sas

people, there occurred a growth of Rumanian population (75,8 from the total of the population) and the growth of the gipsy population, which holds 20,3% from the total of the inhabitants. As well, it occurred a decrease of the Hungarian population.

The ascendant evolution of the inhabitant's number, in the period of 1966-2002, it determined a numeric growth of the active population. This is occupied in proportion on 50% in agriculture, 32, 2% in industry and 18,3% in trading domain.

In the domain of agriculture, a traditional economic branch, can be remarked a high weight of the agricultural lands 78,6% and within these occupied lands with pasture: 49,1% an of arable lands: 45,4%. In this area it is cultivated: cereals, fruit bearing trees, vineyard, technical plants, feeds and the potato.

Viticulture has been a traditional activity, which led the fame to Lechința. This place with its original name Lechința, gain its actual dimensions in the growing period of feudalism. In the number 3 "Horticultural File" from 1947 of Năsaud's Agricultural Room, it can be found out that from the 594 hectare of viticulture plantation, 140 hectares belonged to the locality of Lechința, 100 hectares to Sângeorziul Nou, 86 hectares to Urmeniş, and 74 hectares to Sâniob.

It can be noticed a significant degree of association which regards the exploit of the agricultural lands. On the territory of the Lechința locality, there are five firms, which have as their activity the culture of plants and conscription of services in agriculture. A traditional occupation is the breeding of animals. There are breeding, especially bovines which supplies milk to the Lech-Lacto factory, from this locality, but piggery too.

The industry is represented by different unities which have different activities: three unities in the domain of construction material industry (ceramic, conductors, construction structures), a factory of plastic materials, a factory of wines, one of cheese products, and one of footwear. In the previous year of 1990, in this locality functioned a sugar factory. Timber-wood lands occupy only 15, 6% in their general structure, but in Lechința there are four units which turns into good account this resource.

The third sector is well presented, the scale of the offered services is pretty large: transports (four firms of transport have their residence in the locality), telecommunication, the recovery of the waste, tourism services, human health centre and veterinary etc. The best significant weight is held by the commercial unities which distribute a large variety of alimentary and non-alimentary products.

2. 2.The regressive model -Pălatca

This category takes in settlements with a significant descendant development regarding the number of the inhabitants, along with numerous structural modifications. Especially, these refer to the structure of the population grouped on age, where can be found a significant weight reduction of the young population's, and a growth of the aged one, a reduction of the number and weight of the active population and a dynamic determinant of the pronounced growth of negative migration. In this category there are summed a bunch of village centers which are situated in the interior of the Someşană Plain: Pălatca, Suatu, Sânmartin, Miceştii de Câmpie and the big rural flats: Țaga, Mociu, Ciresoaia and of course little flats without administrative functions: Batin (Unguraş village), Năsal (Țaga village), Strugureni (Chiochiş) etc.

The locality Pălatca appears on the map of the Someşană Plain yet from the time of Roman Dacia, on the actual territory of the locality where it is exposed an agricultural farm, which probably, along with the one from Apahida, were supplied the town Napoca.

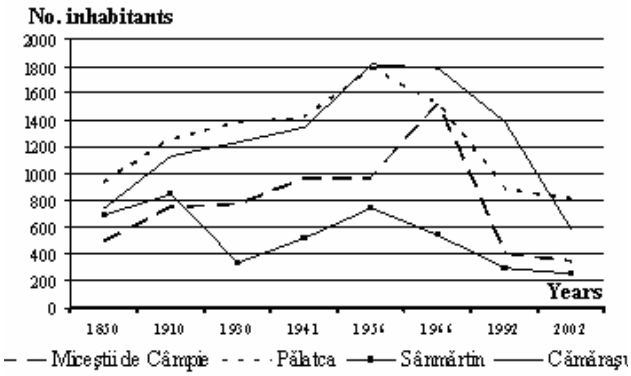


Fig. 3. Rural settlements with a regressive dynamism.

The continuity of living is proved by traces of such discovered flats in this perimeter which are dated to belong to the IV-V century.

In the kept documents in the Solnoc-Dabaca committee, there are mentioned the Pălatca and Pălatca de Sus-poss Palathka 1296, Felwpalathka 1326 villages, which were called in the next century Hungarian Pălatca, and Romanian Pălatca, Olah Pălatca 1499.

The first documentary attestation took place in the year of 1296. In Pălatca, at that period of time there was only Rumanian population, whom religion was rthodox. The ethnical structure of the population changed after the colonization of Hungarian population, which happened in the political context of the "hungarization" of the population from Transylvania by the Hungarian Kingdom, and was intensified after the ended dualism of Austro-Hungary.

With the first modern census on the territory of Transylvania, in the year of 1850, in he locality of Pălatca, there were recording 983 inhabitants. The flat has grown significantly in the second part of the XIX century and the beginning of the XX, so that at the census from the year of 1910 the population has grown with 35%.

At the census from the year 1910, one third of the locality was represented by the Hungarian population, and the majority (60,4%) was held by the Rumanian population. Pălatca was a part of the medium-big rural flats, having a population of 1268 inhabitants. The grade of reading and writing of the population was low, 31,4%. In the structure of the population on group of age, the highest weigh was held by the young population (49,7%) under the conditions that the rate of birth was 48,3‰ which assured a considerable natural growth (17‰) which is specific to the first phase of demographic transition. The weight of the elder population was low, only (7,1%) and this fact suggest a high working potential. From the all 232 existent houses on the moment of the census, the majority (54,7) were houses made from wood. They were covered in proportion of 87,5% with reed or straw.

The numeric evolution of the population was ascendant until the moment of the census from the year 1956 when it was measured the maximum volume of 1789 inhabitants. Subsequently, because of the industrialization process which started in the cities on the lane of Somesul Mic, the locality went into a process of decrease, so that at the next census form the year1992, the population decreased to 50% regarding the census from the year of 1956. This rhythm reduced in the interval between the two censuses, so that in the march of 2002, in the locality were recorded 820 inhabitants

The actual model of social- economic organization of Pălatca locality is characterized by a medium level of re-population. The population is a regressive one, as one under the aspect of dynamics of the population, as one under the structures regarding groups on age (fig.4). The natural growth has recorded values of 15,9‰ on the basis population ageing and the growth of mortality from 12,2% in the year of 1992 to 24,2 in 2002. In the structure

of the population divided on age, it is remarkable a decreased weight of the young population (15,4%) and an increased weight of the adult population, which represents a third part of the locality's population (30,3%);

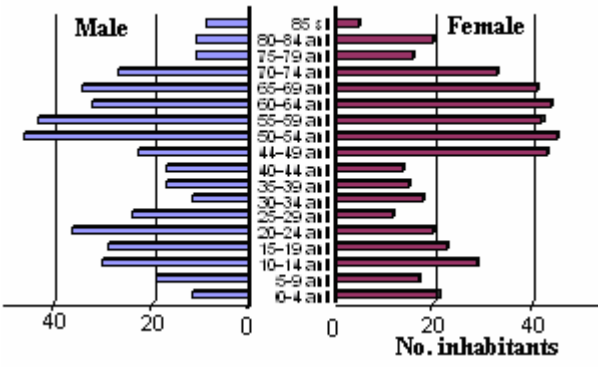


Fig. 4. Population's age and sex composition, in Pălatca, at the census of 2002.

In the ethnical structure it can be remarked a major weight of the Rumanian population (71, 9%) followed by the Hungarian one (23, 9%).

The biggest part of the population of ten years old and over has graduated primary cycle (37, 7) and gymnasium (37,8%), and only 1,4% are people with superior studies, and 3,3% are illiterates. The active population, starting from the year of 1966, follows a descendant curve, regarding the numeric evolution of the inhabitant population. In the year of 2002 this measured a weight of 37% form the total of the population. Predominantly the active population was concerned with agriculture, in a weight of 74,9% and sensibly in close proportions with the secondary sector (13,1%) and with the services one (12%). Because of these, Pălatca locality makes a part in the category of flats with an agricultural function.

The functional profile of the locality is built up by: a factory of non-alcoholic drinks, three commercial units which deal with the commercialization of alimentary products and society of transports;

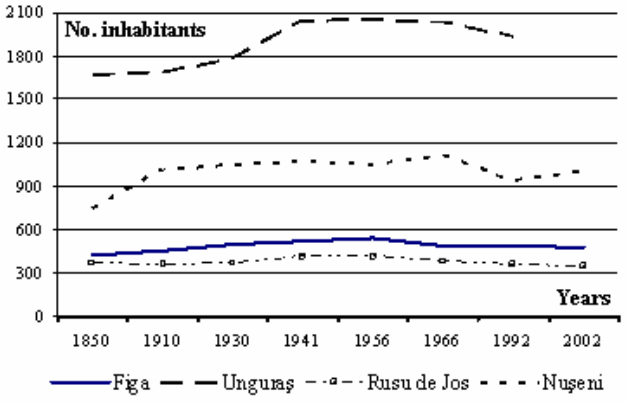
In the general structure of the lands, the forests occupy 18, 4%, the highest weight being gained by the agricultural lands (75%) and within these the arable lands (63, 5%).

Pălatca village is a part of the metropolitan zone of Cluj-Napoca, a territorial unit of planning which will be composed, along with, the villages from Apahida, Cojocna, Suatu, Căianu, Jucu, Pălatca, Cluj, Bonţida, Dăbâca, Borşa, Chinteni, Aluniş, Cornești, Panticeu, Vultureni, Aşchileu, Sânpaul, Baciu, Gârbau, Aghireşu, Capuşu Mare, Gilău, Floreşti, Săvadisla, Ciurila, Feleacu, Aiton, Recea-Cristur and Cluj-Napoca municipium, a pole of development of this unit. The edification of this metropolitan area would determine a decrease in the created disequilibrium between the center and the other areas, which is gained by the dispersal of the planning of the demographic structure, the social and the economic structure, a disequilibrium regarding the common transport, the financing of the infrastructure, the reserves regarding space for living and for the services, the growth of economic competitiveness of the localities with the contiguous regions, a durable development, to improve the conditions regarding the medium.

2.3. Rural settlement with an equilibrated evolution- Figa

The category of those settlements which had a relatively stationary evolution (where the inhabitant's oscillated number was less then 10%) is, indeed, less numerous. There can make evident a series of factors which the maintaining of the population on these settlements. One of the principal factor on one hand, is the favorable position, which is

close to Figa and Rusu de Jos cities, near Beclean, and on the other hand, an important Caianu Mic traffic axis, situated on the National Road 16, Apahida-Reghin, near to the centre of the village. Some village centers with more complex industrial economic functions and services also characterized themselves in one sort of stagnation regarding the number of the population from Nuseni and Unguras. In this category falls in Nicula locality, where the inhabitant's number grew easily with 3, 2% in the period of 1966-2002, and the Hodaie locality, Cătina village, where the inhabitant's number too grew with 0, 6%.



Figa locality can be located at the margin of Lechinței Hills, at the Surgeului and Grigii junction, being united these form the Sărata river, which flows into Meleș, at the altitude between 300-340 m. In the past the Figa settlement was near the place named Ocna Turcului, where from it moved on its actual place, because of the greasy land.

Fig. 5. The Someşană Plain. Settlements with an equilibrate evolution.

In the perimeter of Băile Figa, were discovered in 2005, wooden elements which came from a prehistoric installation of salt extraction, which was dated to have roughly 2870 years. It was a part of the principality from the Melesului Valley, then from the aristocrat domain of Appeffest and from the year of 1305 (the first documentary date of the locality) went into the possession of Bethlenesti family.

In the year of 1850, Figa locality was a part of those middle and little settlements which had a population of 50 inhabitants. At the census of 1910, the number of the inhabitants was only 457 (fig.5), in proportion of 86, 7% being Rumanian. In the category of other ethnics the gypsies were dominating, the Hungarian population was represented only by 4 inhabitants. The big majority's religion was Greco-Catholic. The reading and writing weight was reduced, because back then the official language was Hungarian. On the structure of the population on gender, we can find a slight domination of the female population, the feminist index being 109 at women and 100 at men. On the structure of the population on age groups, we can find almost an equal weight of the young population (0-19 years old) and adults (20-25 years old) whom were 45, 7% respectively 48,6% from the total of the population. It can be remarked the reduced weight of the aged population, 60 years old and over, because of the reduced length of life in that period. The natural dynamism of the population was marked by the high birth rate (33, 5‰) and of the mortality (26, 8‰). The difference between the total and natural increase of the population between 1900-1910 shows a shortage of 15 inhabitants, fact which shows that there was a territorial move of the population, which was determined by the position of the locality near Beclean.The locality was characterized by a high rate of infantile mortality 266, 7‰.

After the year of 1910 the locality's population starts to slightly ascend reaching the number of 544 inhabitants in the year of 1956. The year of 1956 is also put the base of Baile Figa. In the condition of agricultural collectivization and of the permissive legislation in the domain of births and marriages there are recorded decreases among the number of the inhabitants: 487 inhabitants in the year of 1992, 474 inhabitants at the last census, in the year of (2002). The variations are reduced due to the locality's place which is at a distance of only 7 km towards Beclean, and the active population working in the town uses down and up train, definitive shifting being less numerous.

The social-economic organization of Figa locality, is drawn by the reduced but constant populating level, high weight among the young population, active among down and up train population towards Beclean, agricultural space which was intensively valued within an adequate structure, adapted to the undoing market.

The settlement is a part of the little village category. From the point of view of age groups structure, it is remarkable the fact that the young population hold a weight of 26, 7%, superior to the medium value recorded at the level of Someşană Plain, and the average of elder population was more reduced then the average at the level of the unit (16, 5% in contrast with 18,4%) fact due to the reduced intensity of definitive migration (fig.6). The ethnical structure is the same to the one recorded at the beginning of the century, with a predominance of the Rumanian population 86, 1%.

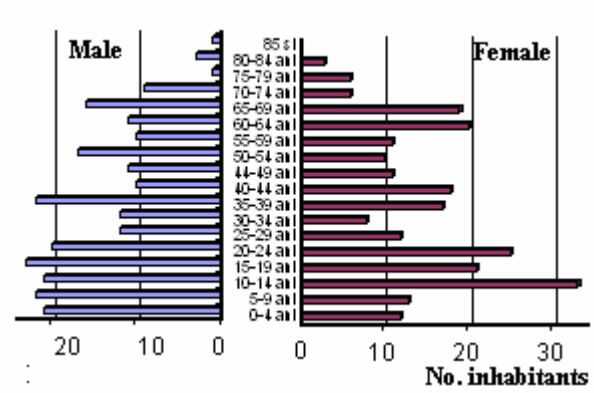


Fig. 6. Population's age and sex composition, in Figa, at 2002 census.

The active population is characterized by higher values in the year of 2002 related to 1992. In its structure the predominant population is concerned with agriculture (66%). In the domain of industry there are working 20, 9% from the total of the active population, these making economical activities in Beclean, because in Figa there isn't any industrial unit. Even if the weight of the occupied population in the third sector is 13,3% (31 people), in the locality there are running only familial associations, which haven't got any employers, and there are three societies with Limited Responsibility with their activity in trading domain, which totally have 5 employees. The rest of the people are employed in activities specific to services centre in Beclean locality. A major part of the active population is practicing down and up train.

In the structure of the lands the predominant are the agricultural land 64%, and within these, given the specific geographical and physical conditions, the surfaces occupied with pasture hold bigger weight than close agricultural fields: 53, 9% respectively 45, 7%. This aspect is favorable to the development of the sector regarding the breeding of animals, especially of big horned, buffalo, fact which confers to the agriculture practiced in this are a periurban character.

Figa locality is involved in a inter-county project, comprised in PHARE 2005, which concerns the development of the lakes and salted waters from this region, and also involves Băile Cojocna from Cluj county, Ocna Dej and Băile Figa from Bistrița-Năsăud. This concerns the infrastructure of the Figa area on a surface of 18 hectares: parking areas, playgrounds, and pools with mud. With the finalization of this project Băile Figa will have the chance to be included in a circulation channel of lakes and salted bays pleasure resorts.

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GENESIS OF A "SLOPE LAND": THE LAND OF NĂSĂUD

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ABSTRACT. – Genesis of a "Slope Land": the Land of Năsăud. Latest introspections in functional system-regions, "lands" being such entities beyond any doubt, have confirmed the major role attributed to *the sustenance component*, both in framing the architecture characteristic of the spatial edifice, and its functions. It appears as a sum of all its morphological, climatic, hydrographical, biogeographical features and of those of the underground resources, as a *sine qua non* condition for its relationship with *the action and interaction component*, meaning man and his desiderata. As a result, we consider that the main key for deciphering the intimate genesis mechanism of each "land", so of the Land of Năsăud as well, consists of illustrating the primary relationships between these two components. In this approach, we shall analyse only the way in which the morphological component of the Land of Năsăud has taken part not only in its strong individualisation, but also in determining its original structural and functional features. Therefore, the Land of Năsăud has received original features becoming a **"slope land"** overlapping, down to Beclean, the entire northern slope basin of the Someşul Mare.

Keywords: *the Land of Năsăud, slope land, natural premises, anthropic premises.*

1. GEOMORPHOLOGICAL FEATURES OF THE LAND OF NĂSĂUD IN THE CONTEXT OF THE „LANDS" OF ROMANIA

Although seeming simple, the phenomenon of construction and affirmation of the "land" type geographical units is a long process with a structure characterised by a complex of factors and conditionings with simultaneous, successive, and tightly connected actions. At their origin, the two fundamental categories, space and time, collaborated in an obvious manner, under circumstances and under the pressure of the human being, the real artisan of a new, original spatial construction.

The authentic researcher of the changes that the geographical space undergoes knows for sure that the start of any phenomenon has a big importance for its later development, for its orientation. The inertia of the evolutionary processes has become a decisive vector, rarely infirmed in the development and individualising of the respective territorial system.

Latest introspections in functional system-regions, "lands" being such entities beyond any doubt, have confirmed the major role attributed to *the sustenance component*, both in framing the architecture characteristic of the spatial edifice, and its functions. It appears as a sum of all its morphological, climatic, hydrographical, biogeographical features and of those of the underground resources, as a *sine qua non* condition of the relationship with *the action and interaction component*, meaning man and his desiderata. As a result, we consider that the main

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key for deciphering the intimate genesis mechanism of each "land", so of the Land of Năsăud as well, consists of illustrating the primary relationships between these two components (on this subject, see also Cocean, Ilovan, Oana-Ramona, 2005, Ilovan, Oana-Ramona 2005a, 2005b, 2005c, Boțan, C. N., Ilovan, Oana-Ramona, 2005, Ilovan, Oana-Ramona, 2006, Ilovan, Oana-Ramona, Buciura, I., 2006, Ilovan, Oana-Ramona, 2007a, 2007b, 2008).

A synthesis focusing on the 18 "land" type territorial entities in Romania (Cocean, 2002, 2005, Cocean, Ciangă, 1999-2000), real mental spaces, underlined a series of genetic peculiarities that induced differences. These features took also part in building a complex of factors that ensured the respective territorial organisms their most significant regional "attribute": *peculiarity*.

In this approach, we shall analyse only the way in which the morphological component of the Land of Năsăud has taken part not only in its strong individualisation, but also in determining its original structural and functional features. Thus, in the case of most of the "lands" of Romania, their morphological matrices have similarities: *a larger or smaller depression* (for instance, the small depression of the Sălişte a, which hosted for a certain period the Land of Amlaş, or the large Braşov Depression that hosts the Land of Bârsa), *a more or less levelled one* (one should compare the levelled Haţeg Depression with the very fragmented one of the Land of Maramureş). Such a depression is usually surrounded on at least three of its sides by compact mountainous heights that are often inaccessible. The connection between the lower part of this depression and the above-mentioned mountainous edifices is facilitated by piedmont structures or large glacises (e.g. the Budureasa one in the Land of Beiuş is an illustrative example), having the role of harmonising and balancing morphological and physiological contrasts.

Two of the territorial units in the group of "lands" are exceptions to the morphological pattern we described and these are the Land of Năsăud and the Land of the Moți, but each of them is part of a different genetic and evolutionary context.

The Land of Năsăud, lying between the Someşul Mare Valley in the south and the high peaks of the Rodnei and of the Țibleș Mountains in the north, includes three landforms: the valley of the above-mentioned river (a modest one in the context of major geostructures), the eastern and central part of the Someşul Mare Hills, very significant in what their size is concerned, and the southern slopes of the Țibleș Mountains, the southern and western ones belonging to the Rodnei Mountains, and the northern slopes of the Bârgău Mountains, also important according to the criterion of size. In this case, the role of depressions as matrices for "lands", as nodal, polarising areas, belongs to *the relatively narrow axis of the Someşul Mare Valley* (Cocean, Boțan, 2005, Boțan, Ilovan, Oana-Ramona, 2005, for the anisotropic features of two of the valleys in this region) *heading to the north*, connecting to the mountainous area, the four main branches represented by its tributaries: the Rebra, the Sălăuța, the Țibleș, and the Ilişua. Therefore, the Land of Năsăud received original features becoming a **"slope land"** overlapping, down to Beclean, the entire northern slope basin of the Someşul Mare.

In our opinion, the most interesting phenomenon is exactly this location of the "land", *only* on the northern slope, while the southern one is a clear limit that the morphological elements (energy of the landforms, declivity, fragmentation) cannot explain as the values attributed to these geomorphological parameters are to be identified frequently on the right slope of the river as well. In this case, the explanation consists of a sum of factors that, with no special expressivity, still oriented decisively any anthropisation processes and any processes of constituting primary habitats.

Among the rigorous morphological conditions that contributed to the special construction of the Land of Năsăud, including its obvious asymmetry, we underline the shelter function induced by landforms and a certain accessibility induced by some of these landforms.

It is clear that the mountainous slopes in the east, north, and north-west, Țibleș-Rodna-Suhard-Bârgău, fragmented partially only by the Șetref Pass, became in the Middle Ages (a historical period defined by great migrations and by demographical changes in the entire European continent, and, obviously, also in the region of our country), a maximum protection area, an ideal refuge for the people in the Someşul Mare Corridor. As opposed to what its southern slope could offer from this point of view, in the area of the Bistrița Hills or in the north-east of the Transylvanian Plain. The shelter function started primarily from the qualities that a forested area had (see also Ilovan, Oana-Ramona, Bartha, Adriana, 2005).

Secondly, the asymmetry of this "land" may be a result of the different accessibility offered by valley corridors (the Ilişua, the Țibleş, the Sălăuța, the Gersa, the Rebra) to penetrating this space, as compared to the front of a cuesta that, although characterised by low altimetric amplitude, requires, in order to provide permanent access, superior infrastructure and effort. It is well known that in the phase when people started building their relationship with their future existential space, valleys had the role of guiding lines, facilitating access inside the respective territory and, therefore, access to knowing and possessing it. This is why we argue in support of the dominant flux orientation from the Someşul Mare Corridor to the north, in opposition to lower fluxes towards the southern slope, with less numerous and not so well organised hydrographical networks.

But, in the case of the Land of Năsăud we surely focus on the influence of another factor with an immediate impact, that, on one hand, facilitated individual's relationship with the substratum, and, on the other hand, in the case of other territories, it induced a certain feeling of inhospitality, acutely felt by a traditional human community when the first habitat cellules appeared. We believe that that decisive factor in flux orientation and for anthropisation was ***slope exposition.*** Thus, while on the right slope of the Someşul Mare, between 10 up to 30 km length, starting with the peaks of the Rodnei and of the Țibleș and down to the river meadow, it has a southern orientation, and thus it is a sunny slope, a "face", while the left slope, although it is shorter and therefore more easy to be passed, was a "back" type area, with less favourable climate, avoided by settlements. Therefore, the resulting architecture was an asymmetrical one, with a "*land*" stopped in its extension to the south, and spread, like a fan, to the north.

If, in what the low areas are concerned, the closed basin ones, the depressions, for most of the "lands", we identify a well delimited dimensional and functional area, in the case of the Land of Năsăud, its place belongs, beside a leading valley corridor, to a series of small depressions, on one hand, at the contact of the mountains to the hilly area (e.g. Molişet, Şendroaia, Strâmbulici, Bichigiu, and Fiad), and, on the other hand, at the confluence of the I or II order tributaries of the Someşul Mare (such is the case for Târlişua, Dobric, Telciu, and Sângeorz-Băi).

To conclude, to morphological factor, far from having levelling features, generated a mosaic of forms and structures that ensured diversity and functional polyvalence for the Land of Năsăud.

2. FAVOURABLE AND RESTRICTIVE FACTORS REFLECTING IN THE GENESIS OF THE SETTLEMENTS IN THE REGION OF NĂSĂUD – GEOLOGICAL, GEOMORPHOLOGICAL, ADMINISTRATIVE, ETC. CONDITIONS

Both geographers and historians who discussed the evolution of this regional system (e.g. Morariu, T., 1929, Mureşianu, M., 1992, 1996, Retegan, S., 2002) approached the favourable and restrictive factors that had a role in the genesis of the settlements in the Land of Năsăud. The anthropisation of the Land of Năsăud consisted primarily of asymmetric swarming. Population's asymmetric swarming was induced by polyvalent resources, the shelter function and that of accessibility (valleys vs. slopes), as well as by the administrative policy in diverse periods.

Some of the factors responsible for the genesis of the settlements in this region could be easily discovered in *an analysis of toponymy*. N. Drăganu (1928) realised such an analysis. We started from this in order to find proof of the formation and evolution of some of the settlements in this region. The names of the settlements appeared either starting from people's names (for instance, *Borleasa*, derived after a Romanian proper name), or denoted inhabitants' initial choice related to the place they settled, as well as later administrative decisions on moving parts of settlements and changing their name ("clearly Romanian" names are *Piatra*, *Păltineasa*, *Larga*, and *Negrileşti*). This was the case of the village *Vărarea* that they moved between 1779 and 1789, from the right bank of the Someş, and they also gave it another name: Nepos. Similarly, *Poiana* village had the following history: "The people of Maier, that had more land here in the clearing, for economic benefits, settled here and built houses and economic edifices. There were plenty of such settlements, but before the Military Border District appeared there were neither systematised villages and communes nor having independent administration, but everybody considered themselves inhabitants of Maier commune and obeyed its authorities. Their houses, although many, and although they had here even a church and 2 priests, still they considered them to be houses in the field belonging to the people in Maier commune..." (Drăganu, 1928, p. 96).

Although the name of *Rodna* is a testimony of the Slavic-Romanian mining, *Anieş* is a testimony, due to the formation of its name, of the Hungarian mining, while in Romanian, people call the valley hosting this settlement Valea Aurarilor (the Gold Miners' Valley).

The name of *Şanţ* (ditch) village triggers our attention to the function that that place had, that of defending the Rodna Pass and of controlling any mountain paths, and this was why people built a ditch with parapet. Thus, when the people of Rodna went to work on their land on the respective meadow, they said they went "to the ditch". Therefore, the contemporary Şanţ village is, in fact, part of Rodna village, where some of its people settled in former summer households. The same defence function was characteristic of the agricultural land of *Ilva* (the present Ilva Mică) that, later on, transformed into *Leşu* village (*leş*, having a Hungarian origin, means "watch place"), while the Leşu Valley got its name from this settlement.

Documents from 1450 and 1706 showed us, through toponymic interpretation, that people perceived *Năsăud* town as a regional centre as the meaning of the word *Zagra*, derived from the Slavic za-gora, was "over" or "over the mountain", and this means that even in 1450 Năsăud had the functions of a centre: "People's orientation was from Năsăud, the administrative centre, and the hill was the Beleii Hill" (Drăganu, 1928, p. 85).

People's households in the Land of Năsăud were either in a compact inhabited area, especially after the administrative organisation imposed by the Second Military

Border District, or scattered over areas that offered protection both against natural risks and against the migratory people. This was the case for the entire region as it was a hilly and a mountainous one. The same narrowing of the lateral groups of households to the present inhabited area determined the organisation of houses in the inhabited area of Rodna (Mureşianu, M., 1997, p. 50).

Ilva village, the present *Ilva Mică* village, appeared out of grouping households of those who exploited the favourable conditions characteristic of confluences, in this case, of the Ilva with the Someşul Mare, as well as of a rich forested area and of the intersection of roads (those ensure connections between the Someşul Mare, the Ilva, the Leşu, and the Bârgău Valley through the Strâmba Pass) and railways (connections with Bucovina and with Rodna).

The appearance of the *Lunca Ilvei* village, attested by documents only in 1909, took place in the 19th c., as a result of people's swarming from neighbouring villages. Forests and mineral water resources increased the attractiveness of the place.

Maieru was a place for animal grazing ("măierişte") belonging to the people of Rodna, and in time, the former summer households became permanent ones. In the 18th c., *Maieru* gave birth, as a result of administrative organisation during the Military Border District, to the following settlements: *Ilva Mare*, *Măgura Ilvei*, and *Poiana* (the most recent one). Ştefan Buzilă tells us about the role that the administration had during the Military Border District (1762-1851), for the settlements in the superior basin of the Someşul Mare (M. Mureşianu groups them in a similar manner, 1997): "Poiana became an independent commune with its own administration only after the region was militarised. Once they decided that the Military District Border appeared they also began to move groups of households in the Rodna Valley, according to new administrative laws. [...] it was then that they decided that our village should no longer have its name, but Sân-Iosif (Sân-Iosef) to honour emperor Joseph II" (quoted by Drăganu, 1928, p. 97).

Ilva Mare was first mentioned in documents in 1763 and the arriving of "a young man from Maieru seemed to have taken place in 1730, when close to the place he settled was Recelea hamlet, belonging to Rodna (as a result of people's swarming) and attached to Ilva Mare, after the appearance of the Military Border District (Mureşianu, 1997, pp. 51-52). Through migration from Maieru, Măgura Ilvei and Arşiţa appeared. *Poiana Ilvei* was a result both of households' migration from Maieru (most of these migrations were from Maieru), and of migration from the settlements in the Ilva Valley (situated upstream and downstream of Poiana Ilvei).

A quote from a paper written by Mircea Mureşianu, where he discusses the anthropisation of this territory, is a relevant example of the way swarming took place in the superior basin of the Someşul Mare: "Military administration, according to programme, compelled the people of Leşu village to relocate a large number of their households on the left of the river, with a trend of breaking through the Leştior, thus appearing a nucleus that from that time on has been known as Leşu village. At the same time, as a result of the swarming of certain households upstream, in the corridor area belonging to the Leşu Valley, a second settlement nucleus appeared, still developing from a spatial perspective, called Leşu Luncă. This is a lineal settlement nucleus significant due to its length and different altitudes (from 500 up to over 700 m)" (Mureşianu, 1997, p. 53).

Rodna was first mentioned in a document in 1235, due to the presence of the "gold-silver nests" (Mureşianu, 1997, p. 49). Researchers consider that the area of Rodna is characterised by "centrifugal settling" (Mureşianu, 2000, p. 113), characteristic of the entire region of Năsăud. Thus, Rodna was a matrix-settlement for Maieru and, partially for Anieş,

Salva was the same for Coşbuc, Zagra for Poienile Zagrei, Suplai (*Poienile Zagrei* and *Suplai* villages appeared probably at the end of the 15th c. and at the beginning of the 16th c.) (Drăganu, 1928, p. 98, p. 135), and Aluniş. Mititei appeared as a result of migration from Salva and from Telciu. Migration took place by crossing the interfluves. From Şanţ, appeared also Valea Mare. Valea Vinului appeared as a result of colonising foreign miners for the gold and silver mines.

From the point of view of the settlement structure, the typology of the settlements in this region was determined by the morphology of the area which also the administrative organisation and the imperial systematisation obeyed, and the following types (identified by Mircea Mureşianu) appeared: Rebra, Sălăuţa, Zagra, Ilva, and Leşu.

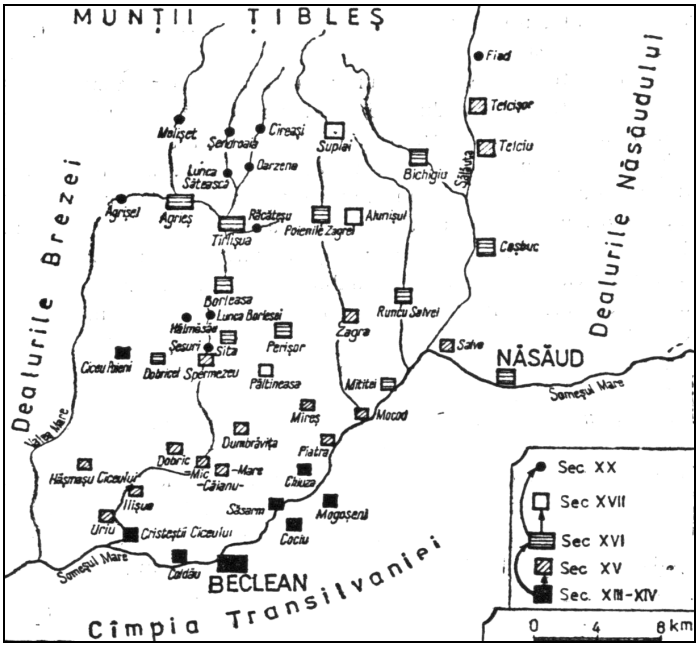

Fig. 1. Population's asymmetric swarming in the Suplai Hills (Cocean, Chiotoroiu, 1990, p. 77).

In most of the cases, the direction of settling was from downstream to upstream. Typical settlements for the slope and plateau areas are Sita and Păltineasa (Cocean, Chiotoroiu, Brânduşa, 1990, p. 78). Several exceptions appeared only for population's migration caused by restrictive historical conditions: "The current from downstream to upstream was generated by conflicts with the Germans, and that from upstream to downstream because of barbaric hordes and of natural disasters" (Mureşianu, 2000, p. 112). Mircea Mureşianu mentioned the settlement of the region through *saltation and translation movements* (2000, p. 217, maybe after an older study belonging to Pompei Cocean and Brânduşa Chiotoroiu, 1990) (figure 1 and figure 2). Translation supposed enlarging the area for settling, while saltation supposed permanently settling the houses where people lived only temporarily (for instance, during the summer season when they worked in the field) (for example, for the Suplai Hills, see the paper written by P. Cocean together with Brânduşa Chiotoroiu, 1990).

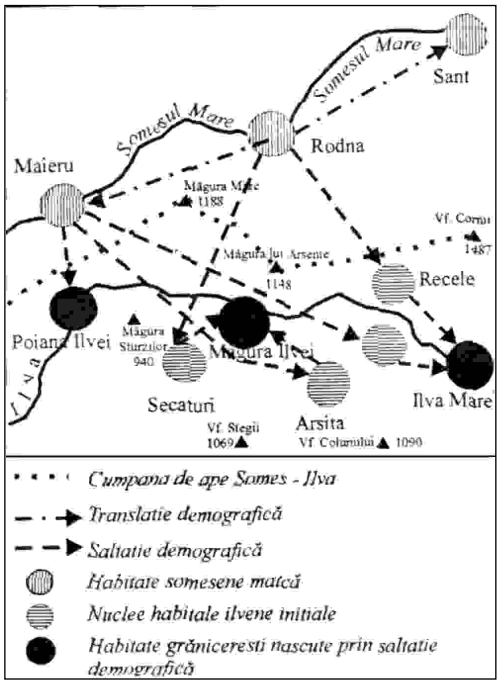

Fig. 2. Population's asymmetric swarming in the area of Rodna (Mureşianu, 2000, p. 110).

The documentary attestation of the settlements offered us the opportunity to identify *four phases* (beside the three phases mentioned by P. Cocean and Brânduşa Chiotoroiu, 1990, pp. 77-78, we added an intermediary one, that of the 18th c., characteristic of the settlements along the Ilva Valley, and this was why these two authors did not consider it):

- the 13th-15th c. phase: Săsarm (1292), Chiuza (1292), Mocod (1245), Zagra (1245), Salva (1245), Telciu (1245), Năsăud (1245), Rebra (1245), Feldru (1245), Sângeorz-Băi (1245), Rodna (1235), Ciceu-Poieni (1461), Mogoşeni (1392), Floreşti (1325), Mintiu (1332), Nimigea de Jos (1367), Nimigea de Sus (1392), Luşca (1392), Liviu Rebreanu (1392), Dobric (1456), Căianu Mic (1456), Căianu Mare (1456), Dumbrăviţa (1456), Spermezeu (1456), Piatra (1418), Mireş (1440), Rebrişoara (1375), and Maieru (1440);

- the 16th-17th c. phase: Dobricel (1593), Sita (1576), Borleasa (1597), Agrieş (1562), Perişor (1576), Poienile Zagrei (1547), Mititei (1547), Runcu Slavei (1547), Coşbuc (1523), Suplai (1695), Alunişul (1695), Tăure (1693), Nepos (1440), and Leşu (1696);

- the 18th c. phase: Romuli (1750), Parva (1839), Poienile Ilvei (1760-1762), Măgura Ilvei (1808), Ilva Mare (1552), and Şanţ (1839).

No settlements appeared in the documents of the 19th century.

- the 20th c. phase: Şesuri-Spermezeu Vale (1956), Hălmăsău (1956), Lunca Borlesei (1956), Agrieşel (1909), Răcăteşu (1956), Molişet (1956), Lunca Sătească (1956), Şendroaia (?), Cireaşi (1956), Oarzina (1956), Fiad (1954), Dealu Ştefăniţei (1956), Telcişor (1956), Gersa I (1954), Gersa II (1956), Poderei (1956), Valea Borcutului (1956), Cormaia (1956), Anieş (1954), Valea Vinului (1909), Valea Mare (1909), Lunca Leşului (1956), Arşiţa (1909), Ivăneasa (1956), and Lunca Ilvei (1954).

The documentary mentioning of the settlements of this region and population' s translation and saltation movements, characteristic of its asymmetrical swarming in the appearance of these settlements, facilitated for us the creation of a genetic model of the Land of Năsăud which we rendered in the figure below (figure 3).

Systematisation and remodelling in the case of the settlement nuclei facilitated town and village consolidation and economic development for most of the settlements in this region (Mureşianu, 2000, p. 217). The development of Năsăud town at a totally different level took place after the Military Border District disappeared and these settlements increased both spatially and demographically. According to the economic and demographic

criteria, the polarising centres of the region are Năsăud, Rodna, Sângeorz-Băi, Zagra, and Ilva Mică. Thus, the Land of Năsăud is a plurinodal region where Năsăud is a rank I polarising centre.

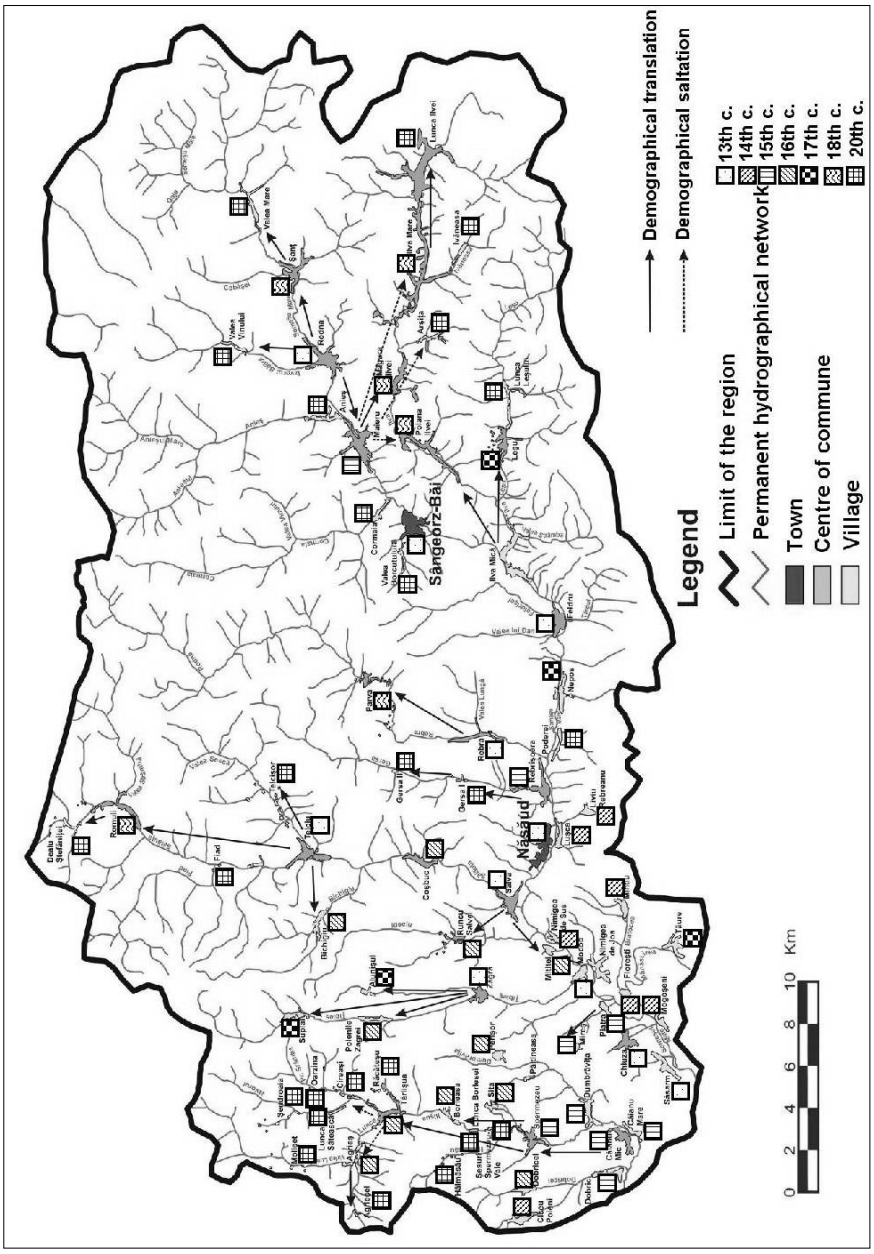

Fig. 3. Population's asymmetric swarming. Genetic model of the Land of Năsăud.

3. FINAL ARGUMENTS AND CONCLUSIONS

The strengths of the Land of Năsăud have been the following: balanced geomorphological space, rich and quality hydrographical resources, exploited and exploitable rich mineral water resources, large pastures and hayfields, settlement continuity, ethnographical unity, distinct mental space, high intraregional communication facilities as a result of short distance between settlements, presence of a strong polarising centre, Năsăud, as compared to any of the other settlements of this region, maintenance of a distinct profile of Năsăud town from the educational perspective.

Natural features consisted of favourability that conditioned settlement, diversification of settlements, and their features characterised by originality. The landforms had a determinant role in locating settlements. The other factors were only secondary in terms of imposed restrictions. The *role of landforms* was a double one: (1) slope exposition ('face', 'back') imposed restrictive or favourable conditions for plant cultivation, but predominantly favourable for animal breeding; (2) as shelter during hard times in the history of this region; *climate* favoured practising and developing economic activities (such as sheep breeding); *the hydrographical network* completed the water supply function with the communication one (the Someşul Mare Corridor, the valleys of its tributaries); *vegetation* had the following dominant features: rich forests, pastures and hayfields favoured the appearance and development of wood exploitation for building households, as well as it was used for heating and for selling, also encouraging seasonal movement in sheep breeding; underground resources were dominated by mineral waters and by those favouring mining. Thus, in this region, the functionality of climate, water resources, of vegetation, fauna, and of soils, of the underground resources oriented itself according to the features of landforms, and therefore it was subordinated to these.

Each of the geographical space components in the Land of Năsăud, having a role in humanising this territory and in the birth and consolidation of its mental space, was a significant factor for the permanentisation of the people in this region.

This region developed and individualised as a "land", first of all, by offering a space with certain habitat potential, while its gravitation centre was the Someşul Mare Corridor. The natural factors, constituted in the support base for the demographical and habitat component (for the action and interaction factor) concurred constructively to making permanent settlements and to individualising a community characterised by a an original and strong mentality, determined as well by the above-mentioned favourable factors, for the functionality of this regional system at the social and economic level.

Political, social, and economic changes determined reorienting through adjustment of the material and spiritual fluxes of the Land of Năsăud, making it an original one, starting from physical-geographical conditions that recommend it as a "slope land".

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GENDER AND AGE STRUCTURE OF THE POPULATION OF SOMEŞUL MARE HILLS

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ABSTRACT. – Gender and Age Structure of the Population of Someşul Mare Hills. In 1910, the gender ratio was 98.3 females to 100 males, while in 2002 it reached the value of 99.3 females to 100 men. However, the weight of the female population was higher at the age of 60 and more where gender ratio reached the value of 130.1 females to 100 men. At the level of the territorial-administrative unit, in 2002 this ratio recorded higher values in the communes of Parva (132.6 females to 100 men) and Uriu (113.6 females to 100 males). Analysing the age groups (0-19 years old, 20-59 years old, and over 60), two periods were noticed: the first one between 1910 and 1966, when the population of the area of Someşul Mare Hills was young (35.9% of the total population of the region belonged to the 0-19 age group), as emphasized by the low weight of elderly women (7.9% of the population of the region aged over 60). However, in the year 2002, the population over 60 represented 21.2% of the total population, with a higher presence of women over 60 as compared to men. In the case of the young population, aged fewer than 20, the male population had a higher weight (representing 21.9% of the total male population, compared to the young female population, representing 21.2% of the total female population).

Keywords: *gender structure, gender ratio, age structure, dependency ratio, geodemographic aging, Someşul Mare Hills.*

1. THE GENDER STRUCTURE OF THE POPULATION

The gender structure represents the expression of the weight of males and females out of the total population. It may be identified either by reporting the total number of men to the total number of women (rate of masculinity) or the total number of women to the total number of men (rate of feminity), and is also known as the gender ratio.

The factors which determine the balance or imbalance between the two genders are: a) the migrations, either temporary or permanent, explain the differences noticed between the two genders. b) the higher mortality of males appeared in the past due to military conflicts, and nowadays because of the higher consumption of alcohol and nycotine, and also because of the higher degree of danger involved in their jobs, and the car accidents among men.

The gender ratio of the entire region varied between 98.3 females to 100 males in 1910, 107 females to 100 males in 1966, and 99.3 females to 100 males in 2002. After World War I, the gender ratio increased significantly, reaching 294.1 females to 100 males in the village of Bichigiu (85 men and 250 women). However, there was also an opposite situation in the case of the commune of Telciu, where the gender ratio was 57.9 females to 100 males (800 women and 1380 men). Although there was an accelerated development of industry in Romania in the second half of the 20th century, it had few effects in Someşul Mare Hills. The most important economic activities were related to the construction of

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Salva-Vişeu railway, started on July 1, 1937, on both sides, the mining of kaolin in the area of the commune of Parva, started in 1959, and the Mining Department of Parva-Rebrişoara, which became active in October 1972, with a number of 160-230 employees, hired from the settlements of Rebra, Nepos, Feldru, Ilva Mică, Năsăud and Rebrişoara, who did not change their residence and became daily commuters.

The gender ratio of the population from Someşul Mare Hills between 1910 and 2002

Table 1

No.	Commune	Year									
		1910		1930		1966		1992		2002	
		M	F	M	F	M	F	M	F	M	F
1	Căianu Mic	50.0	49.9	50.6	49.3	49.1	50.8	50.1	49.8	51	48.9
2	Ciceu-Giurgeşti	49.8	50.1	49.9	50	48.8	51.1	50.8	49.1	51.8	48.1
3	Coşbuc	52.2	47.7	49.6	50.3	48.7	51.2	49.6	50.3	49.9	50
4	Parva	50.9	49	48.9	51	51.2	48.7	50.8	49.1	50.4	49.5
5	Petru Rareş	48.6	51.3	49.4	50.5	48.5	51.4	49.7	50.2	49.2	50.7
6	Rebra	50.4	49.5	48.6	51.3	45.5	54.4	53.9	46	52	47.9
7	Rebrişoara	50.9	49	49.1	50.8	49.7	50.2	50.3	49.6	50.1	49.8
8	Salva	49.9	50	49.8	50.1	50.2	49.7	50.3	49.6	49.8	50.1
9	Spermezeu	51.5	48.4	51.5	48.4	51.5	48.4	51.6	48.3	52.2	47.7
10	Telciu	52.1	47.8	49.9	50	52.6	47.3	51	48.9	51.5	48.4
11	Târlişua	51.3	48.6	50.6	49.3	52.6	47.3	50.6	49.3	51.2	48.7
12	Uriu	49	50.9	48.7	51.2	47.7	52.2	48	51.9	48.5	51.4
13	Zagra	51.6	48.3	49.9	50	48.4	51.5	51.3	48.6	50.3	49.6

We have analysed the gender ratio (females to males) by administrative units between 1966 and 2002. In 1966, in most of these units (61.5%), the gender ratio was higher than the regional average. The highest value was recorded in the commune of Căianu Mic (133.1 females to 100 males) and the lowest value in the commune of Telciu (89.9 females to 100 males).

- In 1992, the females are predominant in 76.9% of the administrative units, and the highest weight of the female population is recorded in the commune of Rebra (101.2 females to 100 males), while the lowest weight is recorded in the commune of Coşbuc (98.7 females to 100 males).
- In 2002, the female population declines in the entire area, reaching the value of 92.4 females to 100 males in the commune of Rebra. The lowest value at the level of the villages was 87.5 females to 100 males in Purcărete, while the highest value was recorded in the village of Ciceu-Corabia, 130.6 females to 100 males.

In 2002, at the level of the entire region, the gender ratio (females to males) presented the following values according to the main age groups: 0-14 years: the value of 90.3 females to 100 males; 15-59 years: the value of 92.4 females to 100 males; over 60 years: the gender ratio reached the value of 130.1 females to 100 males.

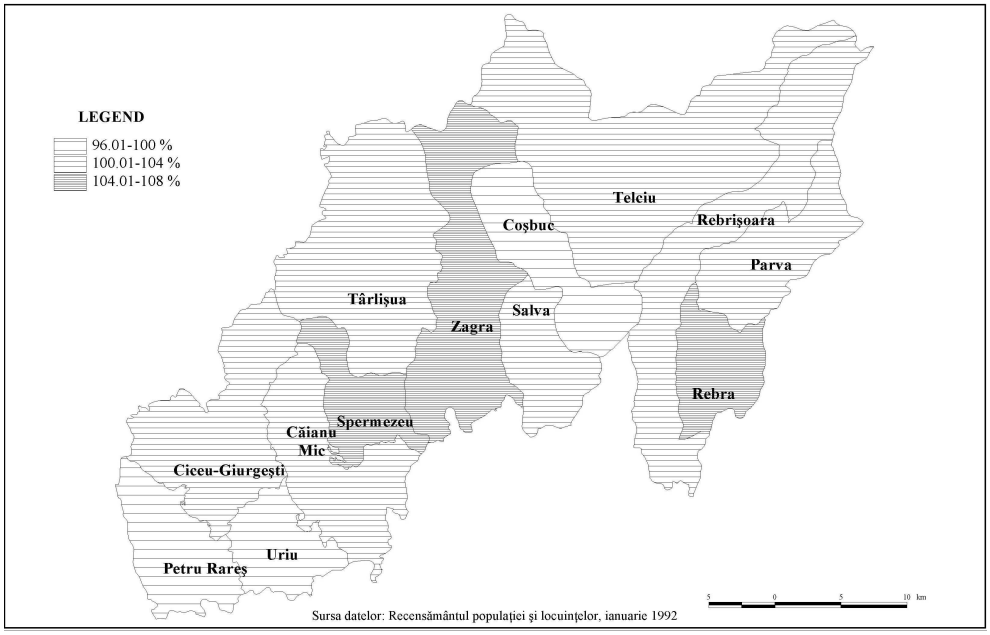

Fig. 1. The gender ratio (males to females) in Someşul Mare Hills in 1992.

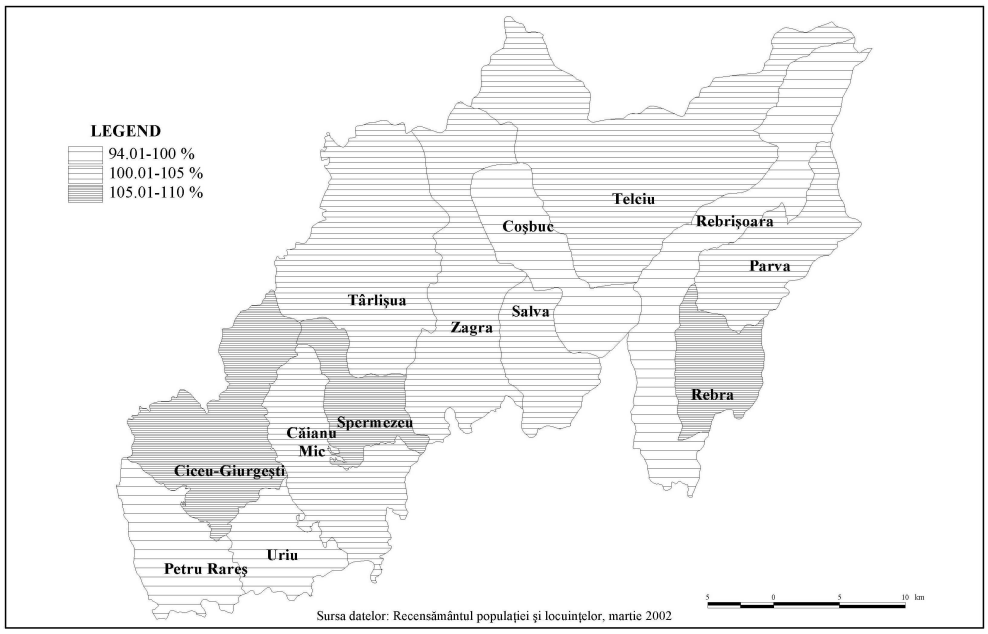

Fig. 2. The gender ratio (males to females) in Someşul Mare Hills in 2002.

One may notice differences from one administrative unit to another. For instance, the difference between the 0-14 age group and the over 60 age group is 43.6 females to 100 males in the commune of Căianu Mic, while the smallest difference is recorded in the commune of Coşbuc (18.6 females to 100 males). On the whole, one should notice the phenomenon of feminization of the population aged over 60.

2. THE STRUCTURE OF THE POPULATION BY THE MAIN AGE GROUPS

The structure by age groups is the expression of dividing the total population of a region into three significant age groups, corresponding to the young, adult and elderly population.

The age structure is influenced by fertility, mortality and migrations, and it varies significantly within a region. From a demographic and economic point of view, special importance is given to the analysis of the weight of the elderly population and of the young population out of the total population. The ratio between them indicates the aging tendency of the population or sometimes the rejuvenating tendency of the population. It is considered that the young population is predominant if the population aged under 20 represents more than 35% of the total population. When the elderly represent more than 12% of the population, one may speak of demographic aging.

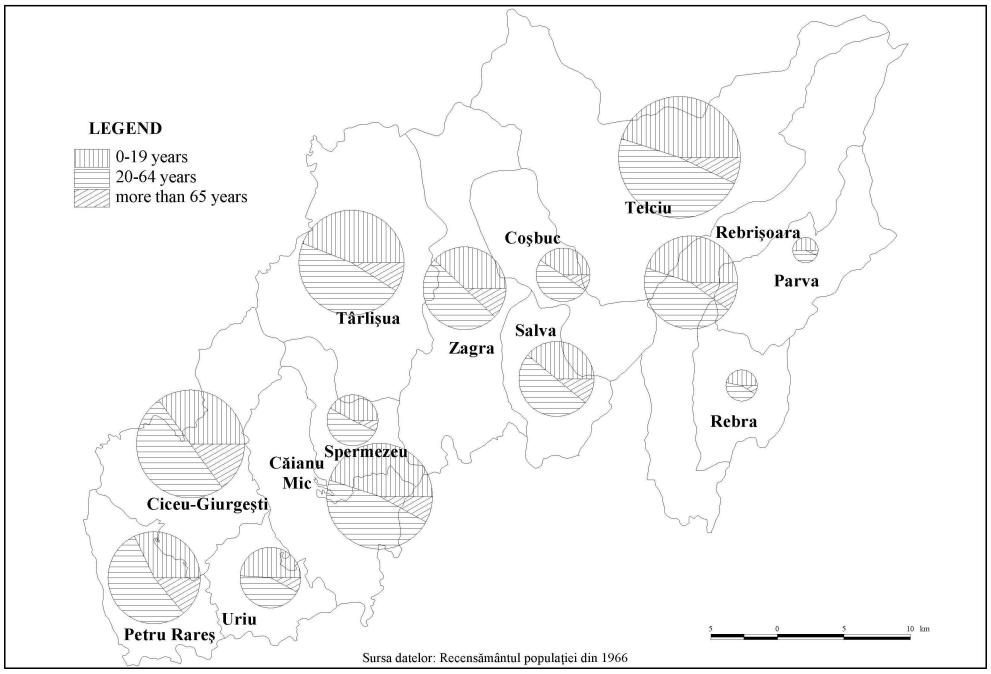

Fig. 3. The main age groups in Someşul Mare Hills in 1966.

The decline of the rate of fertility and mortality, produced along the previous century and especially after 1950, resulted in the aging of the population. The increase in the life expectancy in this area determined an increase of the weight of the elderly population,

which generated an age-gender pyramid with a small base and a flat top, also called "the reversed pyramid". We have also analysed the evolution of the population of Someşul Mare Hills by the main age groups.

Concerning the phenomenon of population aging, it is relevant to analyse the weight of the young population throughout the time, because the young population ensures the functioning of the population as a system. In 1910, at the level of the entire region, the young population (aged 0-19) represented 35.9% of the total population, the adult population (aged 20-59) represented 56.1% of the total population of the region, while the elderly population (aged over 60) had a weight of only 7.9% of the total population. Therefore, one may state that the population of the region was a young one. At the level of the administrative units, only three communes had a higher percentage of elderly population than the regional average: Rebra (11.3 %), Coşbuc (9.98%) and Rebrişoara (8.4%). This fact may be explained by the worse sanitary conditions of their area, which led to high infant mortality rates in those three communes, ranging from 132.1‰ and 193,5‰ (Rebra 132.1‰, Coşbuc 185.4‰, Rebrişoara 193.5‰) between 1900 and 1910. This indicator may be correlated with the number of birth during that period. Between 1900 and 1910, out of the 125 births on the territory of the commune of Rebrişoara, 24 children died before the age of 1, while in the commune of Coşbuc, out of the 84 fatalities, only 10 benefited from medical assistance. During the analysed period, 42 people died, 41 of them did not have any medical assistance, and 13 of them were children under the age of 1. In the commune of Rebrişoara, 181 births and 84 deaths have been recorded, 24 of the deceased being children under the age of 1. Between 1900 and 1910, in the area of Someşul Mare Hills, the most frequent cause of death was tuberculosis, followed by scarlet fever. In these communes, one may remark a decline of the weight of the young population as compared to the entire region. For instance, the young population represented only 34.7% of the population of the commune of Rebra and 34.8% of the population of the commune of Coşbuc. However, in Rebrişoara, the weight of the young population was 36.6% of the total population, as in this commune there was a decline of the adult population, which represented only 53.9% of the population of the commune.

Until 1966, the population acted and manifested as a balanced system, in the context in which most of the population worked mainly in agriculture, and the health system improved. The application of the Decrees 770 and 779 of October 1, regarding the strict control of births and marriages, led to imbalance in this system. Thus, at the level of the entire region, the young population represented 42% of the total population (43.5% of the male population and 40.5% of the female population), the adult population represented 46.2% of the total population (45.7% of the male population and 46.7% of the female population), while the elderly population had a weight of 11.8% of the total population (10.8% of the male population and 12.6% of the female population). At the level of the administrative units, important differences compared to the regional average were recorded in the commune of Parva, where the young population represented 51% of the total female population and 50.5% of the total male population, while the elderly population represented only 6% of the total male population and 8.6% of the total female population. So, in this case, one may state that there was a young population, with a higher weight of elderly women. It may be noticed, at the level of the entire region of Someşul Mare Hills, that there was a higher weight of the young male population compared to the young female population, and a higher weight of the elderly female population compared to the elderly male population.

During the next period of 36 years (1966-2002), in the context of the decline of the birth rate from 23.5‰ in 1966 to 16.2‰ in 1992, the aging of the population became an obvious phenomenon: the age group 0-14 years reprezented 21.6% of the total population (21.9% of the male population and 21.2% of the female population); 57,1% is the weight of the adult population (aged 20 to 59 years) out of the total population of the region (59% of the male population and 55.2% of the female population) and the population aged over 60 increases its weight compared to the year of 1966, reaching the value of 21.2% of the total population (19.1% of the male population and 23.6% of the female population).

So, the population of this region is an aging one from a demographic point of view. In the case of the female population, the weight of the elderly population is higher than the weight of the young population. At the level of administrative units, the most visible phenomenon of demographic aging is recorded in the communes of Târlişua (23.1% of the total male population and 29.8% of the total female population are aged 60 or more) and Uriu (21.6% of the total male population and 28.5% of the total female population).

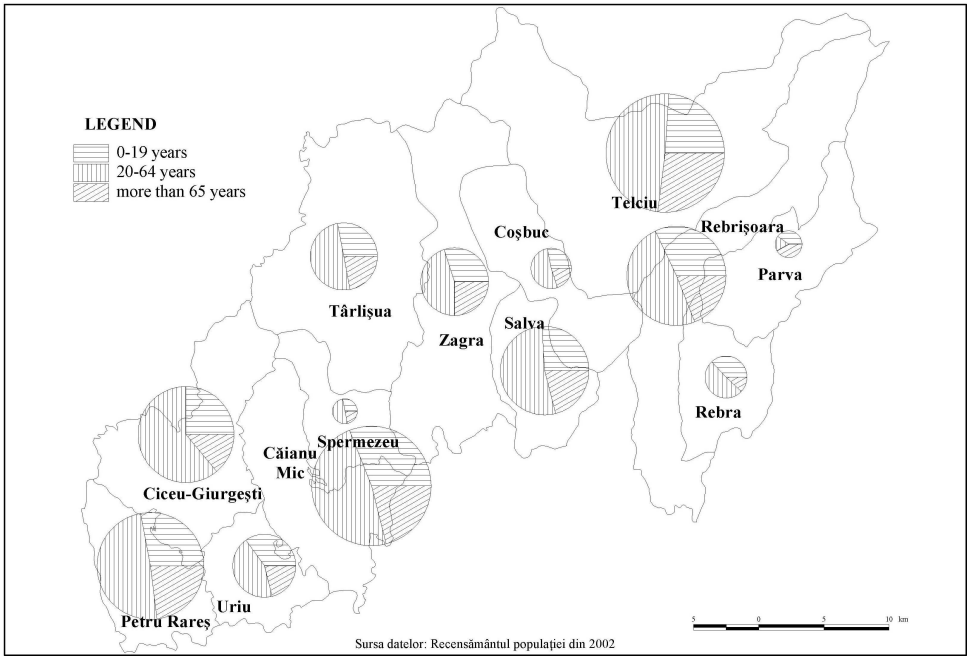

Fig. 4. The main age groups in Someşul Mare Hills in 2002.

Another important indicator which emphasize the effects of demographic aging is the dependency ratio (Tdr), computed according to the following formula:

$$Tdr = \frac{P_{-20} + P_{+65}}{P_{21-64}} \text{ x100, where } P_{-20} \text{ – the population aged 20 or less;}$$

P_{+65} – the population aged 65 or more; P_{21-64} – the adult population.

Analysing the evolution of the dependency ratio between 1910 and 2002, at the level of the entire region, one may notice that the commune of Parva has high values since 1910 (58.91) until 2002 (52.06), among the highest of the area in those years. In 1910 the pressure on the adult population was of 50.95% from the young population and 7.96% from the elderly population (aged over 65), compared to the commune of Târlişua, which has the lowest dependency ratio (53.68%) and the weight of the young population economically dependent of the adult population is 47.01%.

The dependency ratio (as percentage) in Someşul Mare Hills between 1910 and 2002

Table 2

No.	Commune	Year				
		1910	1930	1966	1992	2002
1	Căianu Mic	55.1	51.6	51.3	47.8	51.3
2	Ciceu-Giurgeşti	55.4	48	49.8	44.3	39.5
3	Coşbuc	55.7	52.5	56	44.9	48.3
4	Parva	58.9	54.7	58.8	52	52
5	Petru Rareş	56	42.9	48.2	45.7	49.3
6	Rebra	54.3	52.5	56.1	52.9	51.5
7	Rebrişoara	55.4	54.2	54.9	47.5	50.2
8	Salva	55.4	52.7	50.1	44.8	48.7
9	Spermezeu	55.6	53.6	54.7	48	49.6
10	Telciu	53.6	48.6	54.8	46	50.8
11	Târlişua	54.8	51.4	53.3	46.4	33.9
12	Uriu	54.9	53.5	47	45.6	50.2
13	Zagra	54.8	41.5	50.4	40.3	51.2

In 2002, the highest value of the dependency ratio was recorded also in the commune of Parva (52.06%), divided as follows: 45.54% exerted by the young population; 6.52% by the elderly population.

The lowest value of the dependency ratio is recorded in the commune of Telciu (33.99%), where the pressure of the young population declined from 36.68% in 1992 to 20.62% in 2002, while the pressure of the elderly population increased from 9.77% in 1992 to 20.62% in 2002.

The most significant decline of the pressure over the active population is recorded in the commune of Ciceu-Giurgeşti, where a decrease of 15.97% was registered due to the decline of the young population from 47.77% in 1910 to 24.53% in 2002.

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ECONOMIC FEATURES OF THE LAND OF NĂSĂUD

OANA-RAMONA ILOVAN[1]

ABSTRACT. – Economic Features of the Land of Năsăud. We realised the analysis of the social and economic profile characteristic of the Land of Năsăud while taking into account the main features of the labour force in the region, according to the data of the 2002 census (including: regionalising active population according to activities of the national economy; the importance of diverse economic activities to the inhabitants of the region; the main features of the urban and rural communities from an economic point of view), as well as the main features of the active economic agents in the regional economy, according to statistical data as of December 2006. The economic features of the settlements in this region underlined two evolution areas (one polarised by Rodna and another including Feldru and Rebrişoara), three balance areas (the Ilvas, that of Sângeorz-Băi town and that of the Sălăuţa Valley), and an involution area determined by the low regional impact in what economic development was concerned in the Ilişua Valley, with a significant effect on human resource (especially, population loss). It was super flu to mark the area of Năsăud town as an evolution area if we took into account that it was highly above the development of other communities from several points of view. Commerce and wood exploitation supported the present economy, but under the circumstances of ageing population and population loss. Therefore, we considered medium and long term regional evolution as unpredictable within a Romanian society characterised by continuous and fast changes.

Keywords: *the Land of Năsăud, economy, regional development, intraregional disparities.*

1. INTRODUCTION

We realised the analysis of the social and economic profile characteristic of the Land of Năsăud while taking into account the main features of the labour force in the region, according to the data of the 2002 census (including: regionalising active population according to activities of the national economy; the importance of diverse economic activities to the inhabitants of the region; the main features of the urban and rural communities from an economic point of view), as well as the main features of the active economic agents in the regional economy, according to statistical data as of December 2006. In this context, we focused on intraregional disparities as resulted from:

- interpreting the significance of the average number of employees, focusing on the percentage of active economic agents in the economy of the Land of Năsăud, on size classes, taking into account the average number of employees and their percentage in the economy of the whole region, on activities in the national economy;
- interpreting statistical data as business figures, focusing on the percentage of the business figure, on branches of the national economy, out of the total business figure in the Land of Năsăud and the top five of the active economic agents in the urban area of the region;

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- analysing the importance of diverse economic fields for the regional economy (agriculture, hunting, and forestry; fishing and pisciculture; mining industry; products of the processing industry; electric and thermal energy, gas, and water; constructions; wholesale and retail commerce, repairment of cars, motorcycles, personal and household goods; hotels and restaurants; transport, depositing, and communication; financial mediatings; real estate transactions, renting and services mainly for factories; education; health and social assistance; other activities of collective, social, and personal services).

2. MAIN FEATURES OF THE LABOUR FORCE IN THE LAND OF NĂSĂUD

2. 1. Main features of the labour force in the Land of Năsăud - 2002

According to the main features of the labour force in the Land of Năsăud (taking into account the active population's structure on activities of the national economy at the 2002 census), we underlined the urban-rural disparities, as well as the disparities within the rural area, from the intraregional development perspective.

Starting from *the percentage of the active population in the three activity sectors* (figure 1), Năsăud town was a polarising centre for the population occupied in the tertiary and industrial sectors, followed by Sângeorz-Băi which, from this point of view, determined a certain contrast as for this town the percentage of the population occupied in agriculture was similar to the one of those occupied in the tertiary sector in Năsăud. Thus, for these towns, the tertiary and the primary sectors were best represented (the tertiary one in Năsăud and the primary one in Sângeorz-Băi). The active population's occupational structure in Sângeorz-Băi town was similar to those of Rodna and Maieru communes in its neighbourhood, while, the entire "land" was mainly agricultural according to this criterion. Târlişua, Zagra, and Spermezeu communes, grouped in the western part of the region, were relevant examples in this context.

In most of the communes, *the secondary sector* was as well represented as *the tertiary one*, while the growth of the tertiary sector meant, in most of the cases, an increase of the number of employees in commercial activities. At the same time, the number of those occupied in education and public administration increased the percentage of those active in the tertiary sector.

The active population in the Land of Năsăud was 58,179 persons, most of which came from the rural area, 47,601 (81.82%) and 10,578 (18.18%) from the urban one. According to the active population's percentage on national economy activities, at the regional level, we concluded that the region was a rural one, dominated by agricultural activities. At the same time, the active population's structure underlined the little importance that industry had for occupying the regional labour force (those in the processing industry had under 10%), while other activity fields having certain relevance to the regional economy structure (accounting for more than 3%) were only the commercial one, constructions, and education. The urban area was dominated by the labour force occupied in agriculture (over a third), the industrial activities being significant for over 20% of the economic active inhabitants, being followed by economic activities identical to the those that were relevant for the entire region: commerce, education, and constructions. Beside the ones mentioned before, for the rural area of the region, forestry and wood exploitation appeared as a plus, but still, agriculture was the defining activity for all rural communities. Below we rendered in a decreasing order the activity fields that were significant for the regional labour force:

- in the Land of Năsăud, the active population's structure, in a decreasing order of the percentage in activities of the national economy, was the following: agriculture – 63.7%; processing industry – 9.26%; wholesale and retail commerce, repairment of cars and goods – 3.56%; constructions – 3.37%; education – 3.16%; public administration – 2.29%; transport and depositing – 2.11%; forestry, wood exploitation and hunting – 1.93%; mining industry – 1.84%; health and social assistance – 1.69%; other activities of collective services – 0.92%; hotels and restaurants – 0.69%; post offices and telecommunications – 0.56%; electric and thermal energy, gas and water – 0.53%; real estate transactions, renting, mediating services – 0.26%; finance, banking and insurance services – 0.25%; activities of the personnel employed in households – 0.22%; fishing and pisciculture – 0.02%. 0.67% did not declare their activity. Unemployed people looking for their first job accounted for 2.97% of the total active population of the region;

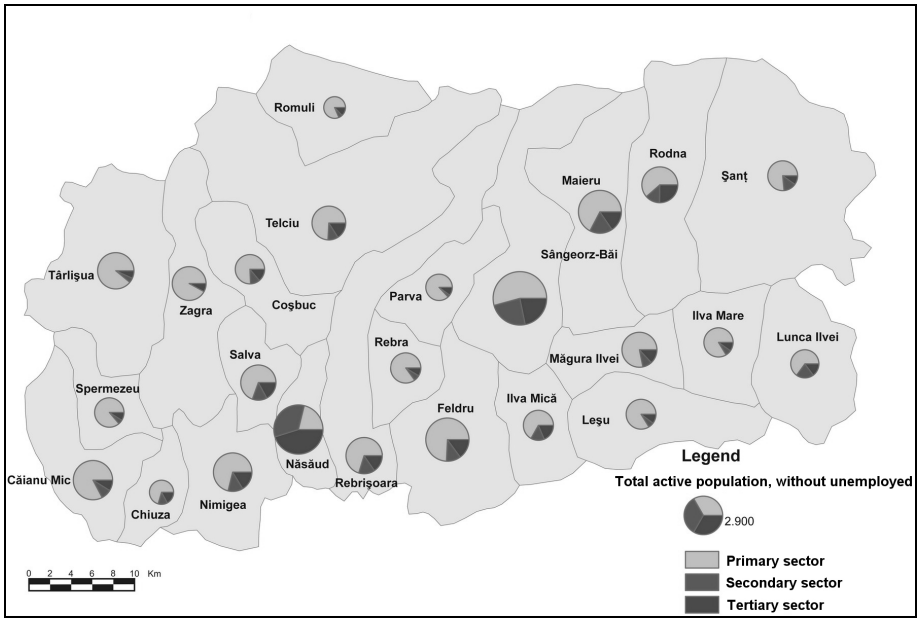

Fig. 1. The Land of Năsăud. Active population's occupational structure in 2002.

- in the urban area of the Land of Năsăud, the active population had the following structure: agriculture – 36.12%; processing industry – 20.64%; wholesale and retail commerce, repairment of cars and goods – 7.72%; education – 5.61%; constructions – 5.42%; transport and depositing – 4.49%; public administration – 3.82%; hotels and restaurants – 2.49%; transport and depositing – 1.90%; other activities of collective services – 1.82%; electric and thermal energy, gas and water – 1.16%; post offices and telecommunications – 0.95%; forestry, wood exploitation and hunting – 0.86%; finance, banking and insurance services – 0.78%; real estate transactions, renting, mediating services – 0.62%; mining industry – 0.49%; activities of the personnel employed in households – 0.38%, and fishing and pisciculture – 0.02%. Activity was not declared by 0.56%, and 4.15% of the active population of the two urban settlements of the region accounted for the unemployed looking for their first job;

- in the rural area of the Land of Năsăud, the structure of the active population was the following: agriculture – 69.83%; processing industry – 6.73%; constructions – 2.91%; wholesale and retail commerce, repairment of cars and goods – 2.64%; education – 2.61%; forestry, wood exploitation and hunting – 2.17%; transport and depositing – 2.15%; mining industry – 2.14%; public administration – 1.95%; health and social assistance – 1.07%; other activities of collective services – 0.72%; post offices and telecommunications – 0.48%; electric and thermal energy, gas and water – 0.39%; hotels and restaurants – 0.29%; activities of the personnel employed in households – 0.18%; real estate transactions, renting, mediating services – 0.17%; finance, banking and insurance services – 0.13%; fishing and pisciculture – 0.03%. 2.71% of the active population in the rural accounted for the unemployed looking for their first job, and 0.7% did not declare their activity.

According to the data of the 2002 census, *most affected communities by the unemployed (unemployed looking for their first job)* were Rodna and Telciu (from 6.01 to 10%), followed by Năsăud, Parva, Maieru, and Ilva Mică. Taking into account this criterion, this region was characteristed by values from 0.72 to 3% for most of its administrative units.

2. 2. Regioning active population on activities of the national economy – 2002

2. 2. 1. Regioning the active population *occupied in agriculture at the 2002 census offered us the opportunity to identify several areas.* This indicator was relevant in order to get a grasp of the economic life characteristic of the settlements in the rural area, as most of the active population in agriculture involved into this field in their home community. The western area of the Land of Năsăud (Căianu Mic, Spermezeu, Târlişua, and Zagra) accounted for over 80% of the active population. Only Rebra commune, in the centre of the region, accounted for a percentage in the same value class.

Another compact area made of three communes – Măgura Ilvei, Ilva Mare, and Leşu – accounted for 70-80% of the active population occupied in agriculture. Values in this interval characterised the agricultural population in the following communes: Romuli, Parva, and Feldru (the last two ones neighbouring each other).

The highest number of communes was characteristic of the 60-70% interval accounting for agricultural population out of the total active one. Three of them formed a compact area: Chiuza, Nimigea, and Salva, then Telciu and Rebrişoara, and Ilva Mică and Şanţ. Sângeorz-Băi town, together with Maieru and Lunca Ilvei, was in the 50-60% interval of the agricultural population out of the active one, while Rodna commune and Năsăud had the lowest values according to this criterion and thus they were more representative for the urbanising degree of this territorial unit.

2. 2. 2. Forestry, wood exploitation and hunting accounted for the features characteristic of the occupational structure of the active population in the eastern part of the Land of Năsăud: Şanţ, Rodna, Maieru, Lunca Ilvei, and Leşu, as well as for the central-northern part of the region, meaning Telciu and Romuli communes, with mountainous features of settlement and of resources. We noticed that in all communes and in the two towns of the region, there was active labour force in this field, but not reaching 2% of the total active population.

2. 2. 3. A significant percentage of the population occupied in the *mining industry* was characteristic only to Rodna and Maieru communes. The other administrative units did not exceed the 5% threshold.

2. 2. 4. The processing industry was well represented by the active population of Năsăud town. Regioning population according to the percentage of those occupied in this economic branch was easy as we identified a western area up to 5% of the active population (Căianu Mic, Spermezeu, Târlişua, and Zagra) and an eastern one (Măgura Ilvei and Ilva Mare) accounting for values in the same interval. We noticed two areas where those occupied in the processing industry accounted for values from 5.01 to 10% out of the active population: a western-central one, formed of five communes in the neighbourhood of Năsăud (Chiuza, Nimigea, Salva, Coşbuc, and Telciu) and a south-eastern-central one (Feldru, Ilva Mică, and Leşu).

2. 2. 5. Taking into account the percentage of the population occupied *in commerce*, the most active ones were Năsăud and Rodna (the latter was stronger than Sângeorz-Băi that infirmed its urban character according to this criterion). Beside Rodna, all the other communes accounted for percentages in the two value intervals of the active population in the inferior part of the hierarchy, in this activity. We identified two areas where communes accounted for values up to 3% of the active population occupied in commerce: a western area, formed of Căianu Mic, Spermezeu, Târlişua, Zagra, and Nimigea, and a southern and south-eastern-central area formed of Parva, Rebra, Feldru, Ilva Mică, Leşu, Măgura Ilvei, Ilva Mare, and Şanț (this last one in the eastern part of the region). The central area of the region was on a superior part of the hierarchy characteristic of the percentage of population occupied in commerce and was formed by Salva, Coşbuc, Telciu, Rebrişoara, Sângeorz-Băi, and Maieru.

2. 2. 6. The percentage of population occupied *in education* was relevant in the case of Năsăud, well known as a polarising centre from the educational point of view for the present Land of Năsăud, and, in the past, for the entire county and, especially for the population in the Romanian Military Border District II (1764-1851). Except for several administrative units (communes where the population occupied in education did not exceed 2% of the active population: Târlişua, Spermezeu, Coşbuc, Romuli, and Rebra), all the other in the Land of Năsăud accounted for a percentage of population occupied in this field from 2.01 to 4%.

2. 3. The importance of the diverse economic activities for the inhabitants of the region

We present the importance of the diverse economic activities for the inhabitants of the region, including towns and communes, in a decreasing order of the active population's percentage for the respective branch:

- *Agriculture*: Zagra (89.15%); Târlişua (87.43%); Spermezeu (85.15%); Rebra; Căianu Mic; Ilva Mare; Leşu; Romuli; Parva; Coşbuc; Feldru; Măgura Ilvei; Nimigea; Rebrişoara; Chiuza; Salva; Şanț; Ilva Mică; Telciu; Lunca Ilvei; Maieru; Sângeorz-Băi; Rodna (31.80%), and Năsăud (18.58%);
- *Forestry, wood exploitation, and hunting*: Telciu (7.55%); Parva (6.71%); Şanț (6.7%); Lunca Ilvei; Maieru; Leşu; Romuli; Rodna; Ilva Mare; Ilva Mică; Coşbuc; Năsăud; Rebrişoara; Chiuza; Rebra; Sângeorz-Băi; Târlişua; Salva; Măgura Ilvei; Zagra; Spermezeu; Feldru; Nimigea (0.24%), and Căianu Mic (0.17%);
- *Fishing and pisciculture*: Telciu (0.38%); Romuli (0.11%); Năsăud (0.04%); Nimigea (0.03%), and Maieru (0.03%);
- *Mining industry*: Rodna (21.39%); Maieru (5.05%); Măgura Ilvei (4.47%); Şanț; Ilva Mare; Sângeorz-Băi; Chiuza; Parva; Coşbuc; Năsăud; Ilva Mică; Feldru; Rebrişoara; Spermezeu; Nimigea; Lunca Ilvei; Romuli; Salva; Căianu Mic; Rebra (0.06%), and Telciu (0.04%);

- *Processing industry*: Năsăud (25.88%); Lunca Ilvei (16.27%); Sângeorz-Băi (16.09%); Şanţ; Rebrişoara; Maieru; Rodna; Salva; Ilva Mică; Chiuza; Feldru; Nimigea; Coşbuc; Telciu; Leşu; Ilva Mare; Căianu Mic; Rebra; Romuli; Măgura Ilvei; Parva; Târlişua; Spermezeu (1.26%), and Zagra (0.4%);

- *Electric and thermal energy, gas and water supply:* Năsăud (1.67%); Chiuza (1.58%); Maieru (1.51%); Rebrişoara; Sângeorz-Băi; Salva; Măgura Ilvei; Rodna; Feldru; Lunca Ilvei; Nimigea; Coşbuc; Căianu Mic; Telciu; Ilva Mare; Rebra; Ilva Mică; Zagra; Târlişua; Spermezeu (0.06%), and Şanţ (0.06%);

- *Constructions*: Sângeorz-Băi (6.43%); Nimigea (5.23%); Măgura Ilvei (5.14%); Maieru; Ilva Mică; Năsăud; Căianu Mic; Coşbuc; Spermezeu; Telciu; Lunca Ilvei; Salva; Feldru; Târlişua; Chiuza; Rebra; Rodna; Ilva Mare; Şanţ; Rebrişoara; Romuli; Parva; Leşu (0.52%), and Zagra (0.4%);

- *Wholesale and retail commerce, repairment of cars and goods*: Năsăud (11.07%); Rodna (6.72%); Sângeorz-Băi (4.82%); Chiuza; Salva; Coşbuc; Rebrişoara; Lunca Ilvei; Telciu; Maieru; Nimigea; Feldru; Şanţ; Parva; Măgura Ilvei; Ilva Mică; Romuli; Căianu Mic; Leşu; Spermezeu; Ilva Mare; Rebra; Târlişua (0.89%), and Zagra (0.76%);

- *Hotels and restaurants*: Sângeorz-Băi (3.53%); Năsăud (1.28%); Rodna (0.99%); Ilva Mică; Telciu; Nimigea; Maieru; Parva; Salva; Leşu; Rebra; Rebrişoara; Lunca Ilvei; Spermezeu; Chiuza; Feldru; Zagra; Şanţ; Romuli; Căianu Mic, and Măgura Ilvei;

- *Transport and depositing*: Ilva Mică (7.2%); Coşbuc (4.71%); Romuli (4.62%); Feldru (3.93%); Salva (3.54%); Nimigea (3.05%); Măgura Ilvei (2.59%); Năsăud (2.48%); Lunca Ilvei; Telciu; Rebrişoara; Ilva Mare; Maieru; Rebra; Rodna; Sângeorz-Băi; Chiuza; Căianu Mic; Leşu; Zagra; Parva; Spermezeu; Târlişua, and Şanţ.

- *Post offices and telecommunications*: Chiuza (1.58%); Năsăud (1.38%); Nimigea (0.94%); Rodna; Spermezeu; Căianu Mic; Sângeorz-Băi; Ilva Mică; Rebrişoara; Ilva Mare; Lunca Ilvei; Telciu; Zagra; Maieru; Târlişua; Salva; Şanţ; Feldru; Leşu; Romuli; Coşbuc; Măgura Ilvei; Parva, and Rebra;

- *Finance, banks, and insurance activities*: Năsăud (1.36%); Ilva Mare (0.48%); Rodna (0.47%); Sângeorz-Băi; Rebrişoara; Chiuza; Salva; Coşbuc; Zagra; Lunca Ilvei; Telciu; Şanţ; Nimigea; Maieru; Spermezeu; Leşu; Ilva Mică; Măgura Ilvei; Târlişua; Căianu Mic, and Feldru;

- *Real estate transactions, renting, and mediating services*: Năsăud (1.06%); Chiuza (0.61%); Măgura Ilvei (0.54%); Rodna; Salva; Sângeorz-Băi; Nimigea; Rebra; Romuli; Rebrişoara; Maieru; Ilva Mare; Coşbuc; Ilva Mică; Căianu Mic; Lunca Ilvei; Şanţ; Feldru; Telciu, and Târlişua;

- *Public administration*: Năsăud (5.27%); Romuli (2.75%); Chiuza (2.72%); Salva (2.71%); Leşu; Rodna; Nimigea; Sângeorz-Băi; Măgura Ilvei; Şanţ; Lunca Ilvei; Rebrişoara; Coşbuc; Telciu; Ilva Mică; Parva; Maieru; Târlişua; Ilva Mare; Feldru; Zagra; Căianu Mic; Spermezeu, and Rebra;

- *Education*: Năsăud (8.14%); Maieru (3.89%); Rebrişoara (3.64%); Rodna (3.54%); Sângeorz-Băi (3.41%); Măgura Ilvei; Chiuza; Salva; Nimigea; Feldru; Leşu; Căianu Mic; Telciu; Parva; Ilva Mică; Lunca Ilvei; Zagra; Şanţ; Ilva Mare; Spermezeu; Coşbuc; Târlişua; Romuli, and Rebra;

- *Health and social insurance*: Năsăud (7.2%); Chiuza (2.89%); Sângeorz-Băi (2.14%); Nimigea; Rodna; Feldru; Salva; Rebrişoara; Telciu; Ilva Mică; Maieru; Parva; Măgura Ilvei; Lunca Ilvei; Căianu Mic; Ilva Mare; Leşu; Romuli; Zagra; Şanţ; Târlişua; Spermezeu; Coşbuc, and Rebra;

- *Other activities of collective services*: Rodna (3.03%); Năsăud (2.34%); Rebra (1.87%); Sângeorz-Băi; Salva; Ilva Mică; Ilva Mare; Rebrişoara; Târlişua; Maieru; Leşu; Nimigea; Chiuza; Căianu Mic; Lunca Ilvei; Parva; Zagra; Telciu; Măgura Ilvei; Spermezeu; Romuli; Coşbuc; Feldru, and Şanţ;

- *Activities of the personnel employed into households*: Maieru (0.66%); Sângeorz-Băi (0.64%); Feldru (0.38%); Parva; Leşu; Spermezeu; Şanţ; Rodna; Nimigea; Târlişua; Ilva Mare; Rebra; Romuli; Telciu; Măgura Ilvei; Salva; Năsăud; Rebrişoara, and Căianu Mic;

- *Undeclared activity*: Spermezeu (2.22%); Lunca Ilvei (1.72%); Telciu (1.59%); Zagra; Feldru; Năsăud; Maieru; Rebra; Târlişua; Nimigea; Leşu; Şanţ; Chiuza; Rodna; Ilva Mică; Măgura Ilvei; Romuli; Rebrişoara; Ilva Mare; Salva; Căianu Mic; Coşbuc; Sângeorz-Băi, and Parva;

- Unemployed: Rodna (9.82%); Telciu (8.18%); Năsăud (5.53%); Ilva Mică; Parva; Maieru; Şanţ; Sângeorz-Băi; Lunca Ilvei; Salva; Măgura Ilvei; Feldru; Chiuza; Zagra; Căianu Mic; Coşbuc; Leşu; Rebrişoara; Nimigea; Târlişua; Ilva Mare; Rebra; Romuli, and Spermezeu.

2. 4. Features characteristic of the settlements in the Land of Năsăud

According to the three sectors of the national economy, the features characteristic of the national economy were the following:

- the primary sector dominated the economy of the region, and was a defining attribute also for the urban area of the Land of Năsăud (for the latter, Sângeorz-Băi was responsible for its agricultural attribute);

- the secondary sector was insignificant for the labour force of the region, only the average of the two towns accounting for more than a quarter of the labour force in the urban area;

- the tertiary sector was important for the main polarising centre;

- Năsăud town had a mixed character, combining services and industry;

- Sângeorz-Băi town had agricultural and industrial features, while the tertiary sector accounted for the lowest percentage.

Below, we gave a hierarchy of the percentages characteristic of the labour force of the region for the three activity sectors:

- **the primary sector:** the Land of Năsăud – 69.57%, rural area of the Land of Năsăud – 76.24%, urban area of the Land of Năsăud – 39.12%; Zagra (91.22%); Târlişua (89.02%); Parva (86.96%); Spermezeu; Rebra; Leşu; Ilva Mare; Căianu Mic; Romuli; Măgura Ilvei; Şanţ; Coşbuc; Feldru; Telciu; Nimigea; Chiuza; Rebrişoara; Salva; Maieru; Ilva Mică; Lunca Ilvei; Rodna (61.5%); Sângeorz-Băi (54.28%), and Năsăud (21.17%);

- **the secondary sector:** the Land of Năsăud – 13.55%, urban area of the Land of Năsăud – 28.4%, rural area of the Land of Năsăud – 10.3%; Năsăud (33.66%); Sângeorz-Băi (23.94%); Lunca Ilvei (20.2%); Maieru; Ilva Mică; Rebrişoara; Şanţ; Salva; Rodna; Nimigea; Chiuza; Feldru; Coşbuc; Telciu; Măgura Ilvei; Căianu Mic; Ilva Mare; Rebra; Leşu; Romuli; Spermezeu; Târlişua (4.21%); Parva (3.06%), and Zagra (0.91%);

- **the tertiary sector:** the Land of Năsăud – 16.88%; urban area of the Land of Năsăud – 32.49%; rural area of the Land of Năsăud – 13.46%; Năsăud (45.16%); Rodna (25.14%); Sângeorz-Băi (21.78%); Ilva Mică; Salva; Chiuza; Nimigea; Telciu; Maieru; Rebrişoara; Feldru; Lunca Ilvei; Coşbuc; Măgura Ilvei; Romuli; Leşu; Parva; Şanţ; Ilva Mare; Spermezeu; Căianu Mic; Rebra (8.64%); Zagra (7.87%), and Târlişua (6.77%).

3. MAIN FEATURES OF THE ACTIVE ECONOMIC AGENTS IN THE REGIONAL ECONOMY (2006)

3. 1. Significance of the average number of employees. Intraregional disparities

The analysis of the social and economic profile of the Land of Năsăud, taking into account the main features of the active economic agents in the economy of the region (features rendered by their number of employees and business figure, according to their financial report in December 2006) underlined several intraregional disparities, and also interregional ones. The economic development of the region in recent years, generating new jobs, was in competition with the economic dynamism of the residence municipium of the county: Bistrița town. The result of a comparison between the opportunities offered by local communities and the strongest centre in the county would always put the + sign, mark of the attractiveness of Bistrița, and the – sign in the region, as a repulsive space. Thus the risk of labour force drain had favourable conditions for its appearance, exactly in the proximity of the regional system, as well as in the areas outside the county (Cluj, Bucharest) and abroad, and thus only doubled a situation that was difficult from the perspective of intracounty polarisation.

3. 1. 1. The percentage of active economic agents in the economy of the Land of Năsăud, according to size classes, according to the average number of employees

The economy of the region was dominated by micro firms, on the second place being the small ones, and the middle-sized ones were no more than five in the same administrative unit (figure 2).

According to the number of economic agents, Năsăud town had the most important role, numeric concentration following a pattern similar to the one for the repartition of the micro firms: in the north-eastern half, in Năsăud, Rebrișoara, and in Telciu. According to this numeric criterion, *Năsăud was a rank I polarising centre from the economic point of view, while Sângeorz-Băi was a rank II one; Maieru and Rodna were rank III economic polarising centres and Șanț (taking into account the four middle-sized firms) was a rank IV centre.* With similar territorial significance we identified Rebrișoara, Feldru, and Telciu, while Căianu Mic was the only economic relevant centre in the western part of the region.

Most *micro economic agents*, according to the number of employees, were present, at the end of December 2006, in the two towns of this region. We identified a northern and north-eastern area where most of the micro economic agents grouped, a second area, in the west of the region, with the smallest number of these economic agents, and a south-eastern one, where the average values in the inferior part of this hierarchy dominated.

Small economic agents grouped in an eastern-central area, an enclave formed by Rebra and Parva interrupting the continuity of this economic concentration, similarly to the case of the micro economic agents.

The economic development of this region was more obvious through the regionalisation of *the middle-sized economic agents*, as these concentrated in the north-eastern half of the Land of Năsăud, beside Năsăud, Rebrișoara, and Ilva Mică. According to this indicator, the level of Năsăud was similar with that of Șanț commune.

Except these settlements, in this region there were no middle-sized economic agents. We underlined a clear *intraregional disparity*: to the west of Năsăud town, the economic development of those in the private sector was lower than that of the agents in the eastern area of the region. At the same time, the north-eastern half was more developed than the south-eastern one.

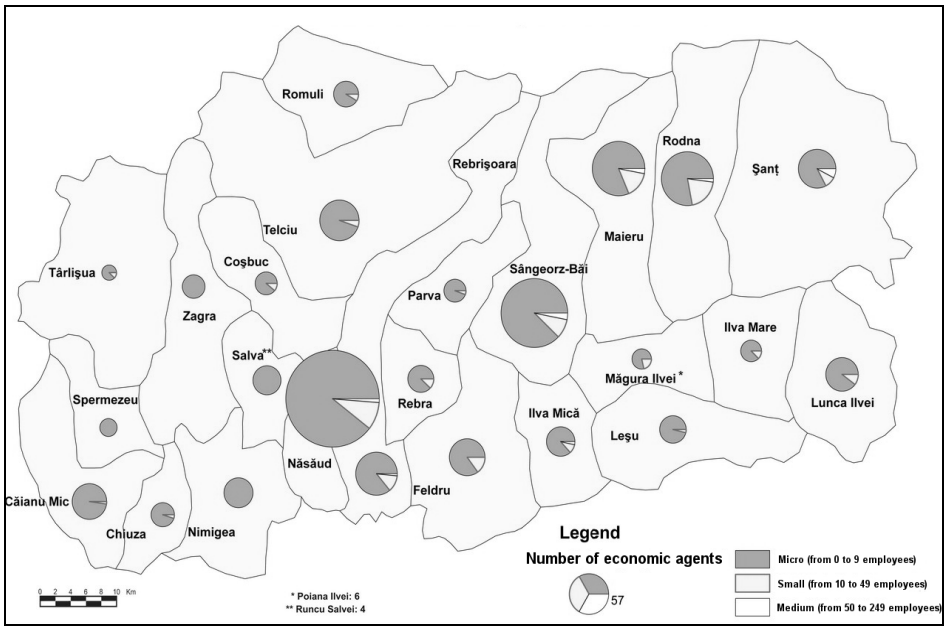

Fig. 2. The Land of Năsăud. Economic agents according to their number of employees, in December 2006.

Most of the economic agents in the Land of Năsăud, according to their financial report at the end of 2006, were micro (88.53%), being followed by the small ones (9.92%) and by the middle-sized ones (1.55%). In this region, *there was no economic agent in the class of the big ones.* Most of the micro economic agents (from 0 to 9 employees[2]) were in the rural area, 709, as compared to 433 units in the two towns (the number of economic agents in this group, in Năsăud, was double than the one in Sângeorz-Băi). In a decreasing order of the number of micro economic units in the rural area, we included the following: Maieru, Rodna, Rebrişoara, Telciu, Căianu Mic, Şanţ, Feldru, Lunca Ilvei, Nimigea, Salva, Ilva Mică, Leşu, Rebra, Romuli, Chiuza, Zagra, Parva, Coşbuc, Ilva Mare, Măgura Ilvei, Spermezeu, Târlişua, Poiana Ilvei, and Runcu Salvei.

The number of small economic agents was almost double in the rural area (83) as compared to the urban one (45), while Sângeorz-Băi (15) was after two communes in the hierarchy of the number of economic agents: Rodna (20) and Maieru (16). The hierarchy continued, in a decreasing order with the following communes: Rebrişoara, Feldru, Şanţ, Lunca Ilvei, Ilva Mică, Măgura Ilvei, Rebra, Telciu, Coşbuc, Ilva Mare, Romuli, Căianu Mic, Chiuza, Leşu, Parva, and Târlişua. In Nimigea, Poiana Ilvei, Runcu Salvei, Salva, Spermezeu, and Zagra communes there were no small economic agents.

[2] Methodological support – including economic agents in size classes takes into account the number of employees, thus: micro units – up to 9 employees; small units – from 10 to 49 employees; medium-sized units – from 50 to 249 employees; large units – with over 250 employees (Chira, M. coord., Astalîş, Diana, Buciură, I., Varian, R., Danci, Mirela, 2006, *Anuarul statistic al judeţului Bistriţa-Năsăud,* Direcţia Judeţeană de Statistică Bistriţa-Năsăud, p. 144).

Middle-sized economic agents were in the following towns and communes, in a decreasing order: Sângeorz-Băi, Năsăud, Şanţ, Maieru, Rodna, Ilva Mică, and Rebrişoara.

Percentage of the active economic agents in the economy of the Land of Năsăud, on size classes, according to the average number of employees (%)

Table 1

Town/commune	Type of the economic agent according to the number of employees (%)		
	Micro (from 0 to 9)	Small (from 10 to 49)	Medium (from 50 to 249)
Năsăud	89.47	9.29	1.24
Sângeorz-Băi	87.80	9.15	3.05
Căianu Mic	97.73	2.27	0.00
Chiuza	95.00	5.00	0.00
Coşbuc	88.89	11.11	0.00
Feldru	85.11	14.89	0.00
Ilva Mare	87.50	12.50	0.00
Ilva Mică	86.67	10.00	3.33
Leşu	96.15	3.85	0.00
Lunca Ilvei	89.74	10.26	0.00
Maieru	81.37	15.69	2.94
Măgura Ilvei	78.57	21.43	0.00
Nimigea	100.00	0.00	0.00
Parva	94.44	5.56	0.00
Poiana Ilvei	100.00	0.00	0.00
Rebra	88.00	12.00	0.00
Rebrişoara	85.94	12.50	1.56
Rodna	78.00	20.00	2.00
Romuli	91.30	8.70	0.00
Runcu Salvei	100.00	0.00	0.00
Salva	100.00	0.00	0.00
Spermezeu	100.00	0.00	0.00
Şanţ	82.69	9.62	7.69
Telciu	94.74	5.26	0.00
Târlişua	87.50	12.50	0.00
Zagra	100.00	0.00	0.00

The hierarchy of the towns and communes in the region, according to the total number of economic agents, was the following: Năsăud, Sângeorz-Băi, Maieru, Rodna, Rebrişoara, Telciu, Şanţ, Feldru, Căianu Mic, Lunca Ilvei, Nimigea, Ilva Mică, Salva, Leşu, Rebra, Romuli, Chiuza, Zagra, Coşbuc, Parva, Ilva Mare, Măgura Ilvei, Spermezeu, Târlişua, Poiana Ilvei, and Runcu Salvei[3]. In the table above (table 1), we presented the percentages of the total number of economic

[3] The last two became communes in 2005.

agents in each value class, in towns and communes. We noticed that the number of middle-sized firms was higher in the urban area than in the rural one, as in the case of the micro firms. Despite this, the urban-rural disparities in the region were insignificant from this point of view. 88.91% of the micro firms, according to their average number of employees, were in the urban area (89.47% of the total number of firms in Năsăud and 87.80% of those in Sângeorz-Băi were micro), as well as 9.24% of the small ones and 1.85% of the middle-sized ones (we noticed differences in this case of the two towns of the region: 3.05% of the total number of firms in Sângeorz-Băi were middle-sized, while only 1.24% in Năsăud). For the entire region, the percentage accounting for the three firm types according to the average number of employees, at the end of 2006, was similar to that in the urban area. Thus, in the Land of Năsăud, 88.53% were micro economic agents, 9.92% were small and 1.55% were middle-sized.

3. 1. 2. The percentage of the average number of employees in the economy of the Land of Năsăud according to CAEN[4] activities (taking into account the Land of Năsăud, as a whole)

- In the urban area of the region, 100% coverage in what the average number of employees in the economy of the Land of Năsăud, on CAEN activities, was concerned, belonged to the following activity fields: publishing houses, polygraphy and reproduction of recordings on support (other editing activities); producing chemical substances and products (soap, detergent, and maintenance products); metallurgical industry (precious metal production); industry for electrical machines and apparatuses (production of electric components for motors and vehicles); collecting waste and rests of recyclable materials; water collecting, treatment and distribution; post and telecommunications; auxiliary activities to financial mediatings; other activities of personal services.

In a decreasing order of the percentage focusing on the average number of employees in the urban area, out of the economy of the Land of Năsăud, on CAEN activities, we identified the following hierarchy of the activity fields: financial mediatings (except activities of insurance of institutions in charge with retirement funds) (93.75%); real estate transactions (90.91%); producing rubber and plastic products (90.48%); producing clothes; fur arranging and dyeing; producing clothes for work; producing other clothing articles (excluding underwear); producing underwear; producing other clothing articles and accessories (88.17%); relaxing and cultural activities, and sports (85.71%); education (81.82%); producing textile products (75.81%); leather tawing and finishing; producing travelling and leather articles, harnesses and footwear (75%); eliminating waste and waste water; salubrity and similar activities (75%); wholesale and retail commerce, maintenance and repairment for cars and motorcycles; wholesale and retail commerce of fuel for cars (72.73%); transport connected and auxiliary activities, activities of tourism agents (70%); hotels and restaurants (60.77%); industry for machines and equipment (producing other machines and tools for agriculture and forestry; producing electric portable machines and tools; producing other machines and tools) (60%); other services mainly for factories (54.55%); wholesale commerce and mediating services in wholesale commerce (except cars and motorcycles) (50.57%); retail commerce (except cars and motorcycles); repairment of personal and household goods (50.21%); producing furniture and other industrial activities (38.61%); constructions (35.31%); producing and providing electric and thermal energy, gas and water (33.33%); producing other products

[4] The CAEN code – the list of activity fields (CAEN = short presentation of the classification on national economy activities).

made of non-metallic minerals (28.57%); informatics and connected activities (25.0%); land transport and transport through pipes (24.11%); food and drink industry (16.37%); industry for metallic constructions and for metal products (except machines, tools, and installations) (13.39%); health and social assistance (2.82%); producing wood and cork products, except furniture; producing straw knitted articles and other materials (11.66%); agriculture, hunting and annex services (10.81%); other mining activities (mining for rocks for constructions, mining for calcareous rocks, for gyps and for chalk, mining for pebbles and sand) (6.67%); forestry, wood exploitation and annex services (1.42%).

- *In the rural area of the Land of Năsăud, 100% of the average number of employees in the economy of the region, on CAEN activities,* belonged to the following activity fields: producing cellulose, paper and paper articles (producing paper and waved cardboard and paper and cardboard packages); industry for radio, TV, and communication equipment (producing electronic tubes and other electronic components; producing radio and TV broadcasting equipment, telephonic and telegraphic equipment and apparatuses). *In a decreasing order in this hierarchy, we identified the following sectors:* forestry, wood exploitation, and annex services (98.58%); other mining activities (mining for rocks for constructions, mining for calcareous rock, for gyps and for chalk, mining for pebbles and sand) (93.33%); agriculture, hunting and annex services (89.19%); producing wood and cork products, except furniture; producing straw knitted articles and other materials (88.34%); health and social assistance (87.18%); industry for metallic constructions and for metal products (except machines, tools, and installations) (86.61%); food and drink industry (83.63%); land transport; transport through pipes (75.89%); informatics and connected activities (75%); producing other products made of non-metallic minerals (71.43%); producing and supplying electric and thermal energy, gas and water (66.67%); constructions (64.69%), etc.

Synthesising, at the level of the analysed regional system, *the percentage of the average number of employees in the economy of the Land of Năsăud, on CAEN activities*, was the following: producing wood and cork products, except furniture; producing straw knitted articles and other materials (30%); retail commerce (except cars and motorcycles); repairing personal and household goods (18%); forestry, wood exploitation, and annex services (10%); producing textile articles (10%); constructions (6.5%); food and drink industry (6.2%), etc.

In 2006, the percentage of the urban average number of employees, on activity fields, out of the total average number of employees in the urban area of the region had the following structure: retail commerce (except cars and motorcycles), repairing personal and household goods (23.95%); producing textile articles (21.19%); producing articles made of rubber and plastic (14.28%), etc.

The rural average number of employees, on activity fields, out of the total number of employees in the rural area had the following structure: producing wood and cork products, except furniture; producing straw knitted articles and other materials (41.84%); forestry, wood exploitation and annex services (16.2%); retail commerce (except cars and motorcycles), repairing personal and household goods (13.78%); food and drink industry (8.17%), etc.

3. 2. The importance of the business figure

The economic development of the Land of Năsăud was rendered by the percentage of the business figure that the economic agents in a territorial-administrative unit had out of the business figure of the region. At the end of 2006, Năsăud was in the top, with 35.44%, while *a group of economic dynamic settlements appeared in the north-eastern and central*

part of the region (only Rebra and Parva, along the Rebra Valley in the centre). Except Coşbuc commune, all other communes and the two towns in this region, along the Someşul Mare Valley, positioned in the northern part of the region, were the most dynamic economically. All other communes in the region accounted only for up to 2.5% of the business figure in the Land of Năsăud. In the rural area, we identified to areas: an economic stronger one including three communes: Maieru, Rodna, and Şanţ, and one where communes accounted for 5.01 up to 10% of the total business figure of the rural area of this region.

3. 2. 1. Percentage of the business figure, on national economy branches, out of the total business figure in the Land of Năsăud

- A 100% representation of the business figure of the urban area out of the total business figure in the Land of Năsăud, belonged to the following activity fields: producing chemical substances and products (producing soap, detergent, and maintenance products); metallurgic industry (production of precious metals); industry of electric machines and apparatuses (production of electric components for motors and vehicles); recovering waste and rests of recyclable materials; water collecting, treatment, and distribution; post and telecommunications; financial mediatings (except insurance activities of institutions in charge with retirement funds); activities auxiliary to financial mediatings and other activities of personal services. In a decreasing order: renting machines and equipment, without operator and of personal and household goods (99.45%); relaxing and cultural activities, and sports (99.31%); producing clothing articles; fur arranging and dyeing; producing clothing articles for work; producing other clothing articles, excluding underwear; producing underwear; producing other clothing articles and accessories (99.09%); industry for machines and equipment (producing other machines and tools for agriculture and forestry; producing electric portable machines and tools; producing other machines and tools) (98.1%); producing textile articles (94.93%); real estate transactions (92.78%); education (90.17%); publishing houses, polygraphy and reproducing recordings on support (other editing activities) (89.98%); producing rubber and plastic products (84.56%); wholesale and retail commerce, maintenance and repairing of cars and motorcycles; maintenance and repairing of cars and motorcycles; retail commerce of fuel and cars (75.86%); eliminating waste and waste water; salubrity and similar activities (68.2%); retail commerce (except cars and motorcycles), repairing of personal and household goods (66.48%); other services mainly for factories (64.47%); informatics and connected activities (62.02%); hotels and restaurants (49.41%); annex and auxiliary transport activities, activities of tourism agencies (49.31%); constructions (39,87%); wholesale commerce and mediating services in wholesale commerce (except cars and motorcycles) (38.63%); producing furniture, and other industrial activities (34.77%); land transport and transport through pipes (29.42%); producing other non-metallic minerals (20.92%); leather tawing and finishing producing travelling and leather articles, of harnesses and footwear (16.97%); industry for metallic constructions and for metal products (except machines, tools, and installations) (15.26%); food and drink industry (11.5%); health and social assistance (11.46%); other mining activities (mining for rocks for constructions, mining for calcareous rocks, for gyps and of chalk, mining for pebbles and sand) (7.98%); forestry, wood exploitation and annex services (4.23%); producing wood and cork products, except furniture; producing straw knitted articles and other materials (2.95%); producing and supplying electric and thermal energy, gas and water (2.43%); agriculture, hunting, and connected services (0.27%).

- *Within the hierarchy of the percentage of the business figure, on national economy branches, out of the total business number in the Land of Năsăud, focusing on the rural area*, the following activity fields were relevant: agriculture, agriculture, hunting and connected services (99.73%); producing and supplying electric and thermal energy, gas and water (97.57%); forestry, wood exploitation, and annex services (95.77%); other mining activities (mining for rocks for constructions, mining for calcareous rocks, for gyps and for chalk, mining for pebbles and sand) (92.02%); producing wood and wood and cork products, except furniture; producing straw knitted articles and other materials (90.12%); health and social assistance (88.54%); food and drink industry (88.5%), etc.

- *The structure of the business figure, on national economy branches, in the Land of Năsăud – hierarchy:* producing wood and cork products, except furniture; producing straw knitted articles and other materials (19.54%); retail commerce (except cars and motorcycles), repairing personal and household goods (16.48%); wholesale commerce and mediating services in wholesale commerce (except cars and motorcycles) (12.42%); forestry, wood exploitation, and annex services (7.39%); producing textile articles (6.57%); producing rubber and plastic products (6.55%), etc.

- *The percentage of the business figure, on national economy branches, out of the total business figure of the urban area in this region* underlined the following hierarchy: retail commerce (except cars and motorcycles), repairing personal and household goods (24.53%); producing textile articles (13.97%); producing rubber and plastic products (12.41%), etc.

Percentage of the business figure characteristic of diverse activities, on national economy branches, of the total business figure of the rural area, was the following: producing wood and cork products, except furniture; producing straw knitted articles and other materials (31.81%); wholesale commerce and mediating services in wholesale commerce (except cars and motorcycles) (13.77%); forestry, wood exploitation, and annex services (12.79%); retail commerce (except cars and motorcycles), repairing personal and household goods (9.98%); food and drink industry (6.74%), etc.

3. 2. 2. Best five active economic agents in the two towns of the Land of Năsăud, according to their business figure[5] were*:*

- in Năsăud: SCALA DESIGN SRL (producing textile articles except clothes and underwear); INTEX SA (producing other clothing articles and accessories); SOMPLAST SA (producing plastic boards, plastic sheets, tubes, and profiles); INFLUENT SRL (retail commerce in unspecialised shops, selling mainly non food products); AXA NC COMEXIM SRL (retail commerce in unspecialised shops, selling mainly non food products);

- in Sângeorz-Băi: HEBE SA (hotels); PANLACTO-VICTOCRIS SRL (hotels); FOREST-GOSEN SRL (retail commerce of car fuel); ZANOBETTI SRL (producing sweaters, vests, and similar knitted or crocheted articles); RENEGADE SRL (commerce mediatings with diverse products).

3. 3. The importance of diverse activity fields for economy in the Land of Năsăud

According to the number of employees and to the business figure, we presented the importance of diverse activity fields for the economy in the Land of Năsăud:

[5] This data were valid for December 2006.

3. 3. 1. Agriculture, hunting, and forestry

Although many inhabitants of the Land of Năsăud worked in *Agriculture, hunting, and connected services*, especially those in the rural area, this field was represented only by employees in Chiuza, Rodna, Năsăud, Leşu, and Lunca Ilvei. According to their business figure, Chiuza and Rodna, appeared, in this hierarchy on the first places, followed by Nimigea, Năsăud, and Lunca Ilvei.

Forestry, wood exploitation, and connected services were represented by a *large number of employees* in Maieru (217 employees), Şanț (186), Rebra (42), Ilva Mare (41), Rebrişoara (19), Leşu, Romuli, Sângeorz-Băi, Rodna, Ilva Mică, Chiuza, Lunca Ilvei, Telciu, and in Târlişua. *According to their business figure*, the first three places belong to the three communes with the highest number of employees – Şanț, Maieru, Rebra – followed by Sângeorz-Băi, Rebrişoara, Romuli, Ilva Mare, Zagra, Leşu, Chiuza, Rodna, Telciu, Lunca Ilvei, Târlişua, and Ilva Mică.

3. 3. 2. Fishing and pisciculture

Fishing, pisciculture and connected services, although an economic agent from Sângeorz-Băi (ZMS AQUA INVEST SRL) appeared in our statistical data it was represented neither by employees, nor by any business figure.

3. 3. 3. Mining industry

The mining industry was represented, in this region, by employees in *other mining activities* (for the Land of Năsăud, activities in this category refer to rock mining for constructions; calcareous rock, gyps and chalk mining, and pebbles and sand mining). In a decreasing order of *the number of employees*, this branch was represented by Măgura Ilvei (32 persons), Maieru (15), Rodna (12), Chiuza, Sângeorz-Băi, and Rebra. *According to their business figure*, on the first place was Chiuza, followed by the two communes that were on the first places in what the number of employees was concerned – Măgura Ilvei, Maieru – and by Sângeorz-Băi, Rodna, Rebra, and Năsăud. Although, for the number of employees, in the case of Năsăud, the statistical data mentioned nobody (a frequent case also for other branches of the regional economy), this town was represented by business figures for this branch, according to the financial report of the respective economic agents.

3. 3. 4. Products of the processing industry

Food and drink industry had *employees* in Rodna (75), Feldru (73), Rebrişoara (54), Năsăud (33), Lunca Ilvei (33), Maieru (22), Sângeorz-Băi (22), Rebra (10), Telciu, Zagra, Romuli, and Nimigea. *According to their business figure*, in a decreasing order: Rodna, Rebrişoara, Feldru, Lunca Ilvei, Năsăud, Maieru, Rebra, Sângeorz-Băi, Telciu, Zagra, Romuli, Nimigea, Spermezeu, and Coşbuc. We noticed an overlapping, on the first places, of the settlements where this branch was well represented by the average number of employees with agents with high business figures.

Producing textile articles was represented by a *high number of employees*, in Sângeorz-Băi (354 employees), Rodna (87), Năsăud (69), Feldru (23), Coşbuc (15), and in Rebrişoara (10). The highest *business figure* was characteristic of the economic units in Năsăud, followed by those in Sângeorz-Băi, Coşbuc, Rodna, Feldru, Rebrişoara, and in Căianu Mic (for the last one the number of employees did not appear in our statistical data).

Producing clothes; arranging and dyeing fur (for the Land of Năsăud, out of this category, the following were present: producing clothes for work; producing other clothes, except underwear; producing underwear; producing other clothes and accessories) was

represented through *the average number of employees*, by three settlements: Năsăud (230), Feldru (31) and Sângeorz-Băi (1). *According to the business figure*, this hierarchy was similar, only that, on the third place, appeared Rodna commune, where the data did not mention the number of employees, followed by Sângeorz-Băi.

Leather tawing and finishing; producing articles for travelling, leather products, harnesses and footwear were present in Năsăud (6) and Căianu Mic (2). Still, Căianu Mic was on the first place according to the business figure.

Producing wood and cork products, except furniture; producing articles of straw and of other materials: with employees in Șanț (477), Maieru (294), Rodna (168), Sângeorz-Băi (136), Ilva Mică (127), Telciu (95), Lunca Ilvei (64), Năsăud (54), Romuli(52), Leşu (48), Ilva Mare (35), Parva (22), Feldru (13), Rebrişoara (13), Zagra (9), Nimigea (7), Coşbuc (6), Runcu Salvei, Rebra, Salva, and Chiuza. On the first six places, *according to their business figure*, were economic agents in the same communes that were on similar places according to their number of employees, in this branch: Șanț, Maieru, Rodna, Sângeorz-Băi, Telciu, Romuli, Năsăud, Lunca Ilvei, Leşu, Ilva Mare, Zagra, Parva, Feldru, Rebrişoara, Rebra, Runcu Salvei, Coşbuc, Nimigea, Chiuza, and Salva.

*Producing cellulose, paper and paper products (*referring only to *producing paper and waved cardboard and paper and cardboard packages)* was present in Rebrişoara (4 employees).

*Publishing houses, polygraphy and reproduction of recordings on support (*in the sub-branch of other editing activities*)* were present in Sângeorz-Băi (20 employees). *According to their business figure,* Sângeorz-Băi was on the first place while in Rebrişoara, in the same field, one declared a certain business figure even though statistical data mentioned no employees.

*Producing chemical substances and products (*in the sub-branch *producing soap, detergent, and maintenance products)*: Sângeorz-Băi (4).

Producing products out of rubber and of other plastic materials was well represented by economic agents in Năsăud (285 employees), Feldru (25), Coşbuc (4), and Rodna (1). A similar hierarchy was valid also *according to the business figure,* Salva being the only exception, as it was on the third place, although statistical data mentioned no employees.

Producing other products out of non-metal minerals: Măgura Ilvei (47 employees), Rodna (32), Năsăud (30), Sângeorz-Băi (2), and Coşbuc (1), and *according to their business figure*, Măgura Ilvei, Năsăud, Rodna, Sângeorz-Băi, and Coşbuc.

*Metallurgic industry (*represented by the production of precious metals) was present through one economic agent in Sângeorz-Băi (2 employees).

Industry for metallic constructions and for metal products (except machines, tools and installations): Maieru (96 employees), Năsăud (17), Rebrişoara (11), Feldru (2), and Șanț (1). This hierarchy was identical according to their business figure.

Industry for machines and equipment (represented by *producing other machines and equipment for agriculture and forestry; producing portable electric machines and tools, producing other machines and tools*): was present in Năsăud (3 employees) and in Rebrişoara (2). *According to the business figure,* the order was identical.

*Industry of machines and electric devices (*represented by *production of electric components for motors and cars*): Năsăud (175 employees).

Industry of equipments for radio, television, and communications (production of electronic tubes and of other electronic components; production of radio and television broadcasting equipment, telephonic and telegraphic equipment and devices): Rebrişoara (3 employees) and Rebra (2). The same order was valid according to their business figure.

Industry for medical equipment and instruments, precision, optical and photographical devices, watchmaking (production of medical equipment and instruments) was represented by neither employees nor business figure, but by an economic agent in Rodna.

Production of furniture and other industrial activities: Năsăud (32 employees), Şanţ (21), Maieru (16), Rebrişoara (11), Feldru (8), Sângeorz-Băi (7), Rodna (3), Ilva Mare (2), and Telciu (1). With several exceptions, *according to their business figure*, the order of the settlements with economic agents active in this branch was the same: Năsăud, Şanţ, Rebrişoara, Feldru, Maieru, Sângeorz-Băi, Ilva Mare, Rodna, and Telciu.

Recovering waste and rests of recyclable materials: Năsăud (8 employees).

3. 3. 5. Electric and thermal energy, gas, and water supply

Producing and supplying electric and thermal energy, gas, and water: Maieru (2 employees). *According to their business figure*, Năsăud also appeared on the second place.

Water collecting, treatment and distribution: Năsăud (77 employees).

3. 3. 6. Constructions

Constructions: Maieru (99 employees), Sângeorz-Băi (68), Năsăud (57), Rodna (21), Rebrişoara (14), Căianu Mic (13), Feldru (10), Lunca Ilvei (10), Poiana Ilvei (10), Salva (9), Telciu (8), Măgura Ilvei (8), Nimigea (8), Şanţ (7), Ilva Mică (7) and Târlişua (5). *According to their business figure*: Năsăud, Maieru, Sângeorz-Băi, Rebrişoara, Lunca Ilvei, Şanţ, Rodna, Ilva Mică, Măgura Ilvei, Căianu Mic, Telciu, Nimigea, Salva, Feldru, Târlişua, Poiana Ilvei, and Rebra.

3. 3. 7. Wholesale and retail commerce, repairment of cars, motorcycles, and of personal and household goods

Wholesale and retail commerce, maintenance and repairment of cars, motorcycles; retail commerce of fuel for cars: Năsăud (95 employees), Rodna (38), Sângeorz-Băi (17), Nimigea, Ilva Mică, and Chiuza. *According to their business figure*: Năsăud, Rodna, Sângeorz-Băi, Chiuza, Ilva Mică, and Telciu.

Wholesale commerce and mediating services in wholesale commerce (except cars and motorcycles): Năsăud (82 employees), Coşbuc (55), Sângeorz-Băi (51), Rodna (22), Parva (12), Salva (8), Telciu (5), Maieru (5), Şanţ (5), Rebra (4), Lunca Ilvei, Runcu Salvei, Rebrişoara, and Feldru. *According to their business figure*: Coşbuc, Năsăud, Rodna, Sângeorz-Băi, Parva, Salva, Feldru, Runcu Salvei, Şanţ, Maieru, Spermezeu, Lunca Ilvei, Telciu, Rebra, Rebrişoara, and Căianu Mic.

Retail commerce (except cars and motorcycles); repairment of personal and household goods: Năsăud (349 employees), Sângeorz-Băi (129), Rodna (122), Maieru (75), Telciu (31), Ilva Mică (28), Lunca Ilvei (26), Căianu Mic (21), Rebrişoara, Nimigea, Salva, Şanţ, Măgura Ilvei, Feldru, Târlişua, Coşbuc, Chiuza, Zagra, Ilva Mare, Romuli, Parva, Leşu, Rebra, Runcu Salvei, Poiana Ilvei, and Spermezeu. *According to their business figure*: Năsăud, Rodna, Sângeorz-Băi, Maieru, Şanţ, Lunca Ilvei, Telciu, Căianu Mic, Chiuza, Rebrişoara, Măgura Ilvei, Ilva Mică, Nimigea, Salva, Ilva Mare, Feldru, Târlişua, Romuli, Zagra, Coşbuc, Leşu, Rebra, Spermezeu, Parva, Poiana Ilvei, and Runcu Salvei.

3. 3. 8. Hotels and restaurants

Hotels and restaurants: Sângeorz-Băi (162 employees), Rodna (58), Năsăud (27), Şanţ (13), Lunca Ilvei (10), Telciu, Ilva Mică, Leşu, Feldru, Salva, Coşbuc, Rebra, Maieru, Nimigea, Rebrişoara, Măgura Ilvei, and Ilva Mare. *According to their business figure*: Sângeorz-Băi, Rodna, Şanţ, Năsăud, Lunca Ilvei, Telciu, Feldru, Coşbuc, Ilva Mică, Maieru, Leşu, Ilva Mare, Rebrişoara, Rebra, Nimigea, and Salva.

3. 3. 9. Transport, depositing and communication

Land transport; transport through pipes: Rebrişoara (137 employees), Năsăud (67), Rebra (43), Feldru (23), Maieru (16), Căianu Mic (15), Sângeorz-Băi (14), Parva, Salva, Chiuza, Zagra, Rodna, Şanţ, Ilva Mare, Târlişua, Spermezeu. *According to their business figure*, the order was the following: Rebrişoara, Năsăud, Rebra, Feldru, Chiuza, Sângeorz-Băi, Maieru, Căianu Mic, Salva, Spermezeu, Zagra, Târlişua, Telciu, Parva, Şanţ, and Rodna.

Connected and auxiliary transport activities, activities characteristic to tourism agencies: Sângeorz-Băi (7 employees), Telciu (2) and Rebra (1). *According to their business figure*, data mention economic agents in the following towns and communes: Sângeorz-Băi, Rebrişoara, Rebra, Năsăud, Telciu, and Ilva Mică.

Post and telecommunications: Năsăud.

3. 3. 10. Financial Mediating

Financial mediating (except insurance activities of retirement agencies): Năsăud (15 employees) and Maieru (1).

Auxiliary activities to financial mediatings: Năsăud.

3. 3. 11. Real estate transactions, renting and activities mainly for factories

Real estate transactions: Năsăud (10 employees) and Rebra (1). This hierarchy was identical according to their business figure.

Renting machineries and equipment without operator and of personal and household goods was present in Sângeorz-Băi and in Spermezeu.

Informatics and connected activities: Rodna (3 employees), Năsăud (2), Maieru (2), and Târlişua (1). *According to their business figure*: Sângeorz-Băi, Maieru, Năsăud, Rodna, and Ilva Mică.

Other activities in the tertiary sector mainly for factories: Năsăud (18 employees), Sângeorz-Băi (6), Ilva Mică (6), Poiana Ilvei (5), Salva, Lunca Ilvei, Rodna, Maieru, and Rebra. The first three places were identical *according to their business figure*: Năsăud, Sângeorz-Băi, Ilva Mică, Salva, Maieru, Poiana Ilvei, Rodna, Lunca Ilvei, Căianu Mic, and Spermezeu.

3. 3. 12. Education

According to the number of employees: Sângeorz-Băi (9 employees) and Rodna (2). According to their business figure, besides these two appeared also Nimigea.

3. 3. 13. Health and social assistance

Health and social assistance: Maieru (12 employees), Ilva Mică, Năsăud, Nimigea, Spermezeu, Salva, Lunca Ilvei, Căianu Mic, Rodna, Chiuza, and Ilva Mare. This hierarchy was similar *according to their business figure*: Maieru, Ilva Mică, Năsăud, Spermezeu, Nimigea, Salva, Ilva Mare, Lunca Ilvei, Chiuza, and Căianu Mic.

3. 3. 14. Other activities of collective, social, and personal services

Eliminating waste and waste water, salubrity and similar activities: Năsăud (3 employees) and Lunca Ilvei (1). This hierarchy was the same according to their business figure.

Activities for relaxation, cultural activities, and sports: Năsăud (12 employees), Nimigea (1), and Rodna (1). *According to their business figure*, relevant economic agents appeared only in Năsăud and Coşbuc. *Other activities for personal services*: Năsăud.

According to their business figure[6], the economic activities gave the following *hierarchy of the importance of towns and communes in this regional system:* Năsăud, Şanţ, Maieru, Sângeorz-Băi, Rodna, Coşbuc, Rebrişoara, Feldru, Lunca Ilvei, Rebra, Chiuza, Telciu, Măgura Ilvei, Parva, Romuli, Leşu, Salva, Ilva Mare, Căianu Mic, Zagra, Ilva Mică, Nimigea, Runcu Salvei, Spermezeu, Târlişua, and Poiana Ilvei.

4. CONCLUSIONS

The economic features of the settlements in this region underlined two evolution areas (one polarised by Rodna and another including Feldru and Rebrişoara), three balance areas (the Ilvas, that of Sângeorz-Băi town, and that of the Sălăuţa Valley), and an involution area determined by the low regional impact in what economic development was concerned in the Ilişua Valley, with a significant effect on human resource (especially, population loss). We considered it was super flu to mark the area of Năsăud town as an evolution area taking into account that it was highly above the development of other communities from several points of view.

Commerce and wood exploitation supported economy, but under the circumstances of an ageing population and population loss. Therefore, medium and long term regional evolution was unpredictable within a Romanian society characterised by continuous and fast changes.

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[6] The business figure in the urban area of the region was: 276,588,837 RON, in the rural area – 342,967,130 RON and 619,555,967 RON in the Land of Năsăud.

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11. *** *Codul CAEN - Lista domeniilor de activitate (CAEN = prezentarea schematică a clasificării activităților din economia națională).*

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STATUS OF RURAL ECOSYSTEM AND POVERTY. A STUDY OF JORHAT DISTRICT OF ASSAM, INDIA

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ABSTRACT. – Status of Rural Ecosystem and Poverty. A Study of Jorhat District of Assam, India. This paper tries to debate the state of the rural ecosystem in connection with the demographical pressure in Jorhat district, India. The domination of agrarian economy and the process of high rate of increasing of the population (more than 20 % per year, at the Indian national level) have resulted in a rapid process of "consumption of the nature". The lack of agricultural land for most of the rural population and the small percent of forest areas led to the decrease in capacity for feeding the population accompanied with the poor quality of the whole rural ecosystems. As a result of social practices and the lack of the land, the Index of Human Development is at a low level. The illiteracy rate reaches near 60 percents of the rural population. Without an international assistance, despite the large world democracy, the population of this area and of the entire India continues to be born in poverty, live in poverty and die in poverty.

Keywords: *rural society, ecosystem, poverty.*

1. STATEMENT OF THE PROBLEM

The concept of ecosystem has a much larger history. Many attempts were made to characterize the immense complexity and holistic character of the natural World. The interactions of living and non-living things and the exchange of products arc being regulated by nature through its various material cycles. The regular cycling of materials is important to sustain living being in the ecosystem including the human being. Man is also an integral part of nature. Food, clothing, shelter and virtually everything - we have to extract from natural environment. From the time immemorial, man is interacting with natural environment. This rate of interaction and the degree of dependence have been increasing day by day.

After the industrial revolution, the rural environment faced a rapid change throughout the World. The technology that has been utilized by rural masses, the economy, the social institution, its ideology, art and religion has undergone a ceaseless change. This change has some time been low, sometimes strikingly rapid and some moments even quantitative in character resulting into the transformation of one type of rural society to another type. Therefore, it is important to examine the objective and subjective forces, which accelerates the process of change, and also identify the trend of change whether positive 01- negative.

Rural ecosystem that contains rural population is differing from urban ecosystem or environment in various aspects. The occupation and social composition of population, the degree of complexity of social structure, and social life, the intensity and variety of social contact are quite different in urban environment from rural environment. The rural ecosystem (environment) consists of human population, livestock, and natural resources, which occupy rural areas (land, air, water, wildlife and other non-living things).

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The Indian economy is an agrarian economy where more than 73 percent of its population (70.89 scores, 2001 Census) is living in the rural areas spreading over six lakhs villages. These villages are the main sources of potential economic, social, cultural and recreational areas of India. For a sustainable rural living standard, Rural India needs better local ecosystem.

Rural society needs not only a good ecosystem but also sustainable ecosystems. It means that ecosystem should satisfy the present and future generations without ecosystem depletion. It is true in fact, the rapidly increasing population, limited natural resources, indiscriminate consumption of natural resources and competition for economic development may lead to uncertainly for future generation. It is quite evident from the present trend of development that the growth in economic production has not been able to meet the basic needs of the poor people.

This situation is true in case of rural India where enormous natural resources are available but due to lack of sustainable development and the over-increasing population pressure (2.2 % per annum) nearly 26.10 % (2003) of its population is living below poverty line. Indiscriminate or unwise utilization of rural resources are not only enhancing the incidence of poor people but it also degrades the quality of rural ecosystem and its habitat: the vary means of sustenance of rural habitation. If the ecological impact on poverty can be identified and managed, then a great step will be taken in removal of poverty. When people will be knowledgeable about their ecology, this will not only upgrade their life style but also ensure sustenance of life for a long time to come.

Therefore, the present study attempts to examine the status of rural ecosystem of Jorhat district and its carrying / ecological capacity to combat rural poverty. The paper also attempts to suggest some remedial measures and how 10 regenerate rural ecosystems for sustainable living.

2. DATA BASE AND METHODOLOGY

2. 1. Database

Both primary and secondary information have been used to conduct the present study. The primary data collected from the field were mainly on ecological parameters, population, socio-economic and land use data pertaining to five selected villages for the study. The secondary information on various elements of ecosystem, poverty and its related phenomena, population, available rural resources, agriculture, land use and settlement, socio-economic etc. in the study area were collected from various census publications, District Statistical handbooks, Reports on Human development, Economic survey, Government departments, Research and Educational Institutions etc.

2. 2. Methodology

Since, the study is dwelt on the collection and the processing of primary and secondary sources of data on transformation of rural ecosystem and the incidence of rural poverty, therefore, the study is divided into two parts:

The first part of the study is devoted on the present status of rural ecosystem and poverty for the district as a whole. The principal components that comprises of rural ecosystem were studied in detail. In the second part of the study, an attempt has been made to identity different ecosystems on the basis of existing ecological parameters at village level. The selection of village level ecosystem were definitely helped us to develop data set pertaining to rural ecosystem and poverty.

The determination and measurement of poverty was carried out by using "Human Poverty Index" (HPI-1) NHDR, Planning Commission, 2001). The HPI-1 focuses on deprivations in three basis dimensions: Longevity, as measured by the probability at birth of not surviving to age 40; Knowledge, as measured by the adult illiteracy rate; and over all economic provisioning, public and private, as measured by the percentage of people not using improve water resources and percentage of children under five who are under weight.

3. STATUS OF RURAL ECOSYSTEM AND POVERTY IN JORHAT DISTRICT

3. 1. Geographic position

Jorhat district situated in the eastern part of Assam. It is bounded in the North by North Lakhimpur district, in the east by Sibsagar district, on the South and South East by Nagaland State and in the West by Golaghat district of Assam. With a geographical area of 2,853.3 sq km, Jorhat accounts for about 1.3 percent of the State's total geographical area. The general elevation of the district ranges from 80 to 200 m above MSL. The Tiru Hills in the southeastern part of the district have elevations ranging from 120 to 200 m above MSL. The hill areas of the district have moderate to steep slope. Piedmont plains dominate Mariani, Titabor and Borholla area with an elevation ranging from 100 to 120 m. The vast flood plains in the south of Brahmaputra around Jorhat, Teok and Titabar have elevation ranging from 80 to 100 m. The Majuli river island and a small area in the north of western part near the south bank of have elevation ranging from 70 to 80 m above MSL.

The river Brahmaputra is the main river of the district. It has 39 tributaries and the main tributaries are - Jhanji, Teok, Bhogdoi and Kakadonga. The rivers and tributaries have occupies about 19 percent of the total area of the district. On the basis of' land forms' and rock formation, the district can be divided into two groups: the alluvial flood plains and the sedimentary (Tipam group). Nearly, 73 of the total area fall under alluvial flood plains and only 8 percent falls under sedimentary (Tipam group) groups of rocks.

3. 2. Population

Human population is one of the principal elements that comprise the rural ecosystem. Among the principal elements that comprise the rural ecosystem, the human population is one of the most dynamic and important elements. Rural ecosystem is differing from urban ecosystem in many ways. The occupations of population, social composition, the cultural heritage, the ethnicity, the magnitude of material wealth, the degree of complexity of social structure and social life, the intensity and variety of social contact are quite different in urban environment from rural one. According to the Census of India, 2001 the population of Jorhat stands at 9,99,221, of which 5,17,015 are males and 4,82,206 females. The table - 1 and figure-1 show the decadal percentage variation in population of Jorhat district since 1901.

The decadal growth rate of district's population works out 15.84 percent during 1991-2001 as against 18.85 percent for the State as a whole. The population growth rate of the district during the last 100 years remained lower than the State level. Table-2 shows the Circle-wise area, population and density of Jorhat district 2001.

The density of population of Jorhat has gone up to 350 in 2001 as against 305 in 1991 Census. The increase in population density over the decade is 45 persons per square kilometer only. Among the revenue circles, Jorhat East Circle has recorded the highest density of population i.e. 949 persons per square kilometer followed by Titabar circle (499), Jorhat West circle (468), Teok circle (402) and Majuli subdivision (166).

Decadal percentage Variation in Population of Jorhat District, since 1901

Table 1

Period	India	Assam	Jorhat District
1901-11	5.75	16.99	16.90
1911-21	-0.31	20.48	17.26
1921-31	11.00	19.91	8.88
1931-41	14.22	20.40	15.27
1941-51	13.31	19.93	14.87
1951-61	24.80	34.95	24.17
1961-71	24.66	34.95	17.47
1971-81	24.66	23.56	N. A.
1981-91	23.86	24.24	33.10
1991-2001	21.34	18.85	14.69

Source: Govt. of Assam, Assam Human Development Report -2003.

Population Density of Jorhat District, 2001

Table 2

Name of Circle/Sub-division	Population 2001	Area (Sq km)	Density (persons/sq km)
Jorhat East Circle	177548	187.08	949
Jorhat West Circle	187782	400.95	468
Teok Circle	219753	546.21	402
Titabor Circle	260738	522.48	499
Jorhat sub-division	**845821**	**1656.72**	**511**
Majuli sub-division	153400	924.60	166
Total Reserved forest		272.00	-
Jorhat District	**999221**	**2853.32**	**350**

3. 3. Natural Resources

3. 3. 1. Land Resource

Jorhat district occupies only 1.3 percent area of State's total area. Table- 3 indicates the Circle-wise per capita availability of land in the district.

Per Capita Land Availability in Jorhat District (Circle-wise), 2004

Table 3

Sl. No.	Per Capita Land Availability in ha (bigha)	Name of Circle
1	<0.25 (<1.87bighas)	**Jorhat East, Jorhat West, Titabar**
2	0.25 - 0.50 (1 .87 - 3.73 bighas)	**Teok**
3	>0.51 (>3.81 bighas)	**Majuli**

Source: Soil Resource Atlas, Jorhat District, NBSSLUP, Jorhat 2004.

The entire district is thickly populated except Majuli sub-division. The per capita land availability of Jorhat East, Jorhat West and Titabar circles is 0.25 ha or below 1.87 bighas. Majuli sub-division is showing high per capita land availability with more than 0.51 ha or about 4 bighas per person.

The soils of the district are acidic in nature. The pH value is ranging from extremely acidic (3-5 - 4.4) to strongly acidic (5.1 – 5.5). Soil erosion causes considerable damage to soil productivity as fertile surface is removed. The southeastern hilly parts of the district are subjected to moderate erosion by water as the forests are being degraded. The upland soils of Teok and Mariani are under tea gardens and they are slightly eroded. The soils of Majuli River Island have slight erosion.

3. 3. 2. Livestock Population

Livestock sector is an important resource in rural economy. It has a significant role in rural economy. The Animal Husbandry and Veterinary Department of the State Government is implementing a variety of socio-economic developmental schemes, such as, livestock, Piggery and Poultry development schemes etc both in rural and urban sectors to generate not only employment opportunities for the under privileged and particularly to the Women folk but also for increasing various livestock products in the district as well as in the State. Table - 4 shows the Livestock and Poultry Population of Jorhat District, 2003.

Livestock and Poultry Population of Jorhat District & Assam, 2003

Table 4

Livestock Spices	Jorhat District	Assam State	% To the State's Total
1. Total Cattle	575270	8419647	6.83
a) C.B. Cattle	35148	440321	7.98
b) Indigenous Cattle	303765	7979326	3.81
2. Buffalo	42513	677669	6.27
3. Sheep	809	154579	0.52
4. Goat	157091	2986913	5.26
5. Horse & Ponies	2535	11642	21.77
7. Dogs	49368	656354	7.52
8. Rabbit	1012	4647	21.78
9. Poultry	683808	14757979	4.63
10. Ducks	1294201	6888679	18.79

Source: District Animal Husbandry & Veterinary Department, Govt of Assam, 2003.

As per the Livestock Census, 2003, the total Livestock Population in Jorhat was 29.75 lakhs as against the 360.92 lakhs population that of the State. The district has contributed only 8.24 percent of the State's Livestock Population. The cattle population in the district constitutes the largest group numbering 3.38 lakhs followed by pig 1.68 lakhs while buffalo is 42.5 thousand. The production of Poultry is 6.83 lakh, which is about 5.0 percent of the State's population. The Duck population is 12.94 lakh that has contributed about 19.0 percent of State's total.

3. 3. 3. Water Resource

The district falls under humid sub-tropical climate. It receives an average of 2076 mm rainfall of which about 87 percent falls between April and September. The other months also receive occasional rainfall. The period between November and March remains dry and deficit. The district receives normal and regular monsoon rain and that is why, it has plenty of water for various uses. The level of ground water is shallow and is easy to harness. It is to be noted that the portable water or drinkable water is scares in the district although it has plenty of water. The ground water has high iron content and therefore it cannot be used directly for drinking. More than 21 percent area of the district comes under rivers and marshy areas. The water available in the district has the potentiality for future use in agriculture through irrigation systems.

3.3.4. Forest and Wild life

The bulk of the forest area in the district is categorized as reserved forest these reserved forest are Tiru Hill reserved forest, Dissoi reserved forest and Dissoi Valley reserved forest. The total forest area of the district as per the latest assessment by the Divisional Forest Office (D.F.O.) is 9.0 percent, out of which about 8.8 percent and 0,7 percent forest area identified as reserved and others categories, respectively. The district has a Wild life sanctuary. It is known as Gibbon Wild life sanctuary. Gibbon Wild fife sanctuary has occupied a place in the map of Wild life sanctuary of the country for her rich, varied rare primates, other mammals, reptiles, birds and invertebrates. It is also famous for seven numbers of primates.

The forest products of the district mainly comprises of wood, fuel wood, bamboo, thatch, sand etc. At present the production of wood is banned in the district. The government from its other forests products earns a good amount of revenue.

3. 3. 5. Mineral resource

The Crude oil is the only mineral resource available in the district. There are more than 20 numbers of oil wells found in the Titabar and Borholla area of the district.

4. Human Development Index (HDI) in Jorhat District

It is seen that economists have measured well being of societies, economies and people by the yardsticks of income. If an economy produced more goods and services, then it was deemed to be better off than an economy that produced fewer goods and services. Growth was consequently measured by the increase of aggregate income in an economy. This approach has been challenged by successive UNDP's Human Development Reports, that' the objective of human development is not only simply to produce more goods and services for material well enrichment, but to increase the capabilities of all people to lead full, productive and satisfying lives.' UNDP stressed that" the real wealth of a country is its people and the purpose of development is to create an enabling environment for them to enjoy long, creative and healthy lives.

There are three principal indicators - namely, life expectancy at birth as a gauge of health, literacy as a measure of education, and per capita GDP as in indicator of material well-being are used as the basis for the computation of the Human Development Index (HDI).

The Human Development Index for the State and the corresponding indices for the districts have been calculated by Assam Government on the basis of the latest available data, for the year 2001.

Table 4 shows the district-wise Human Development Indicators for Assam, 2001.

District-wise Human Development Index for Assam, 2001

Table 5

Rank/District	HDI Value	Income Index	Education Index	Health Index
l. Jorhat	**0.650**	**0.564**	**0.722**	**0.664**
2. Kamrup	0.574	0.573	0.701	0.450
3. Golaghat	0.540	0.409	0.650	0.564
4. Karbi Anglang	0.494	0.491	0.535	0.457
5. Morigaon	0.494	0.562	0.551	0.371
6. Dibruagarh	0.483	0.162	0.654	0.636
7. Sibsagar	0.469	0.242	0.702	0.464
Assam	**0.407**	**0.286**	**0.595**	**0343**
8. Cachar	0.402	0.266	0.634	0.307
9. Barpeta	0.396	0.385	0.527	0.279
10. Tinsukia	0.377	0.082	0.571	0.479
11. Hailakandi	0.363	0.234	0.563	0.293
12. N.C. Hills	0.363	0.211	0.650	0.229
13. Sonitpur	0.357	0.071	0.552	0.450
14. Nagaon	0.356	0.179	0.583	0.307
15. Kokrajhar	0.354	0.145	0.474	0.443
16. Nalbari	0.343	0.076	0.641	0.314
17. Lakhimpur	0.337	0.154	0.657	0.200
18. Golapara	0.308	0.146	0.536	0.243
19. Karimganj	0.301	0.078	0.620	0.207
20. Dhemaji	0.277	0.026	0.622	0.186
21. Bongaigaon	0.263	0.103	0.557	0.129
22. Darrang	0.259	0.057	0.514	0.207
23. Dhubri	0.214	0.102	0.454	0.086

Source: Govt. of Assam, Assam Human Development Report -2003.

The HDI value for the State as whole is 0.407. While, Jorhat district is ranked first, has a HDI value 0.650 which is more than three times that of Dhubri district, the lowest ranked district. There are significant variations of HDI Value across the districts. Most of the upper Assam districts and the districts of Kamrup and Karbi Anglong have higher HDI values than the average for the State. All the lower Assam (except Kamrup) districts have lower HDI values than the State average.

The figures for income index are very skewed. Only six districts namely, Kamrup, Jorhat, Morigaon, Karbi Anglong, Golaghat, and Barpeta have income index values higher than the State average and the remaining 17 districts have income index values lower than the State average.

The educational attainments measured by the education index are evenly speeded through out the State with 11 districts ranked above the State average and 12 districts with educational index values below the State average. The highest ranked district, Jorhat has an educational index value is little over one and a half times that of Dhubri, which is ranked lowest.

In the health sector, Jorhat district has the highest ranked indicating 0.664 health index value. There are ten districts having health index values higher than the State average.

District-wise Human Poverty Index in Assam

Table 6

District	HDI (1999)
Sibsagar	10.31
Dibruagarh	13.98
Golaghat	14.52
Nalbari	15.63
Kamrup	17.44
Nagaon	19.16
Dhemaji	19.60
Lakhimpur	20.23
Morigaon	20.28
Jorhat	**21.94**
Barpeta	22.83
Assam	**23.24**
Darrang	23.30
Bongaigaon	24.03
Sonitpur	24.68
Goalpara	26.30
Hailakandi	27.00
Tinsukia	29.14
Cachar	29.22
N.C.Hills	31.44
Kokrajhar	31.51
Dhubri	31.98
Karimganj	33.38
Karbi Anglong	33.52

Source: Govt. of Assam, Assam Human Development Report – 2003.

5. Human Poverty Index for Assam, 1999

In 1999, the Directorate of Economics and Statistics, Government of Assam and Omeo Kumar Das Institute conducted a joint survey for the State Human Development Report for Social Change and Development. The Study covered 17,140 sample households, in the 219 blocks and 52 urban centers in Assam to measure human poverty. The three determinants utilized are deprivation in longevity, knowledge and decent standard of living. The deprivation in longevity relates to survival that is the vulnerability to death at relatively earlier age and is represented by the percentage of people not expected to survive beyond 40 years of age. The deprivation in knowledge is measures by the percentage of illiterate persons. Finally, the deprivation of a decent standard of living is represented by percentage of people without access to health care services, safe drinking water, pucca dwellings and sanitation facility and the percentage of malnourished children. Human Poverty Index (HPI) concentrating on the deprivation of the three essential determinants of the quality of life was calculated. Table - 6 shows District-wise Human Poverty Index in Assam, 1999.

Karbi Anglong district has the highest HPI value of 33.52, indicating that this district has the highest number of people in human poverty, while Sibsagar district has the lowest HPI value (10.31), demonstrating that the district has the least number of people in human poverty. The rank of the HPI for Jorhat district is 10, among the districts of Assam. On the other hand, this district has secured the top position in me Human Development Index value (0.650).

6. Status of Village Ecosystem and Human Poverty Index

There is a long history of evolution of human life. Perhaps, people started to live a settle life, with event of agriculture. The introduction of agriculture made us to live a settle life and in this way the villages have emerged in our life.

People living in the villages have direct interaction with their immediate natural environment. They meet their food, clothing and shelter from their locality. At times, villages were bountiful with natural resources but after the industrial revolution and due to ever increasing population pressure and human activities on rural resources, get depleted and creating an imbalance in the village ecosystem. The fast degradation of village ecosystem not only raising the level of poverty, hungers and malnutrition it is also posing a big threat to the sustenance of rural living as well as urban.

It is with this background; a five numbers of villages of Jorhat district have been identified and worked out the level of Human Poverty Indices for each village. About one-third household samples were collected from each village with the help of random sampling method.

The following table shows Area, Population Growth, Density, ST & SC population, and Literacy rate of the selected Villages.

Area, Population Growth, Density, ST & SC population and Literacy rate, 2001

Table 7

Name of the Village	Ecosystem Located at/related to	Total Area (in sq. km.)	Population 2001	Growth rate in % per year	ST (in %)	SC (in %)	Literacy rate in %
Medeluajan Gaon	Forest Ecosystem	0.67	743	1.21	28.0		52.0
Gorumora Kaibatya Gaon	River Ecosystem	5.16	1994	2.03		26.0	75.0
Mudoijan Gaon	Inhabited by Assamese	2.96	1347	1.82			86.0
Bhatemora Gaon	Urban-Fringe Ecosystem	2.14	2830	9.96		1.4	83.0

Source: Census of India, 2001.

A very high annual growth rate of population is recorded for Bhatemora gaon indicating 9.96 percent followed by Gorumora Kaibatya gaon (2.03 %), Mudoijan gaon (1.82 %), Medeluajan (1.21 %) and Bandar Chalia Gaon (0.21 %). The density of population is high in case of Bhatemora gaon, Medeluajan and Mudoijan, showing 1322, 743 and 455 persons per sq km, respectively. Bandar chalia and Medeluajan villages have a sizable amount of ST population, showing 37.0 percent and 28.0 percent population, respectively. On the other hand, Gorumora Kaibatya Gaon and Bhatemora Gaon have 26.0 percent and 1.4 percent SC population, respectively. The villages have high literacy rates.

Among the villages, the highest literate village is Mudoijan showing 86.0 percent followed by Bhatemora (83.0 %), Gorumora Kaibatya (75.0%), and Bandar chalia (65.0 %). The literacy rate of Medeluajan is shown as 52.0 percent, which is lower than the national average as whole,

Table 8 indicates the Human Poverty Index for the five selected Villages of Jorhat District, 2007.

Human Poverty Index for Selected Villages, 2007

Table 8

Name of Village	Ecosystem related to/ located at	HPI
1. Medeluajan	Forest Ecosystem	53.837
2. Gorumora Kaibatya Gaon	River Ecosystem	30.261
3. Bandar chalia Gaon	Plantation Economy Ecosystem	26.477
4. Mudoijan Gaon	Inhabited by Assamese	38.440
5. Bhatemora Gaon	Urban-Fringe Ecosystem	23.769
Jorhat District, 1999	Ecosystem related to/ located at	21.940
Assam State, 1999	Forest Ecosystem	23.240

Source: HPI of different villages have been calculated by using UNDP's Method.

Medeluajan Gaon has the highest HPI value of 53.837, indicating that this village has the highest number of people in human poverty, while Bhatemora gaon has the lowest HPI value, demonstrating that this village has relatively the least number of people in human poverty. The HPI value for all the five villages has shown relatively high values that of the district HPI value as whole.

8. Major Findings

The main objective of the study was to assess the status of rural ecosystem and its ecological carrying capacity to sustain rural living and to combat rural poverty. The natural resources, which occupy rural areas of the district, have shown a sharp declining trend. Land is the most important and basic natural resource for the rural people of Jorhat. The per capita land availability among the villagers of Jorhat East, Jorhat West and Titabar circles has shown a very low ratio, indicating less than 1.87 (< 2.5 ha) bighas. On the other hand, the availability of per capita agricultural land is also below the national level (0.15 ha 1990). The size of land holding is very small and fragmented in all the sample villages. That is why; the farmers could not apply modern agricultural techniques in their fields.

Villages are the potential producer and supplier of vegetable, fruits, medicinal plants, different valuable commercial plants, livestock's etc. In case of sample villages it is seen that none of the villages could able to supply the total requirements of the villagers. This proves that there is a clear indication of the degradation of the rural ecosystem in the sample villages. The applications of herbal medicines are still popular among the rural people but surprisingly the villagers could not maintain the use of medicinal plants in their localities. Livestock production has a significant role in rural economy. As per the Livestock Census, 2003, the district has shown 29.75-lakh populations as against the State's total 360.92 lakhs. The production of livestock is not sufficient for the district. The total numbers of livestock are not sufficiently enough in the sample villages also. The small amount of

livestock cannot fulfill the villagers' calories and protein in takes requirement. Traditionally, village people have been meeting their daily protein requirements from the livestock only. The causes of declination of livestock in the villages may be the sharp declination of their living places and also insufficient grazing land.

It is seen that forest serves as a multipurpose natural resources. The village people depend on forest for housing, fuel, medicine and many other purposes. The percentage of forest cover available in the district accounts 9.0 percent only. This small amount of forest cannot fulfill the rural requirements as well as the ecological balance. There is an alarming situation in the availability and the distribution of forest resources in the sample villages. The district has a Wild life Sanctuary known as Gibbon Wild life Sanctuary, Gibbon Sanctuary famous for her varied rare primates, other mammals, reptiles, birds and invertebrates. In case of mineral resources, the district is rich in the reservation of crud oil only. There ate more than twenty numbers of oil wells spreaded over Borholla and Titabar region.

The Human Development Index for the district shows a very satisfactory index value among the districts of Assam. The district is ranked first, has a HDI value 0.650, indicating a higher value than the State HDI value (0.407). This may be due to the fact that the district has the highest ranks in the education and the health indices, showing 0.722 and 0.664, respectively. The studies of sample villages reveal the fact that rural ecosystem is not in stable stage in the present time. All the major components of rural ecosystem have been deteriorating both in qualitatively and quantitatively. Similarly, a very high and moderately high HP! value for the sample villages arc also revealing the highest numbers of people living in human poverty. The status of village ecosystem and poverty were carried out by selecting five villages of the district. These five villages have shown relatively very high HPI values^ indicating that these villages have the highest number of people in human poverty. The HPI values for all the five villages have shown higher values than that of the district HPI value as a whole.

From the above discussions, the following tentative remedial measures can be forwarded: for a sustainable rural development and the removal of poverty it is necessary to rejuvenate the rural ecosystem, to do this; awareness about the rural resources is a vital step; proper assessment of resources, their optimum utilization, profitable market facilities must be assured by the Government; NGOs may also play an important role to create awareness about the scientific utilization of resources.

Without proper utilization of rural resources sustainability never attained and poverty of rural people is also sustain. The rural ecosystem management or regeneration will be the right step to eradicate rural poverty. Otherwise, under the biggest democracy of the World, vast number of rural people in India will continue to born in poverty, lives in poverty and die in poverty.

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THE ROLE OF HYDROGRAPHY IN THE GENESIS AND INDIVIDUALIZATION OF THE SYSTEM OF SETTLEMENTS AND IN THE SOCIO-ECONOMIC EVOLUTION OF LĂPUŞ LAND (I)

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ABSTRACT. – The Role of Hydrography in the Genesis and Individualization of the System of Settlements and in the Socio-Economic Evolution of Lăpuş Land (I). In the complex process of organizing and planning the geographical space, the evenly capitalization of water resources and setting optimum balances between the socio-economic activities and the hydrological resources becomes a necessity, even in the case in which – at first sight - the analysed territory is the possessor of significantly quantitative and superiorly qualitative of potability. Bearing these in mind, the first part of the present study analyses their best usage, their impact and specific manner in which their management has played a major role in the process of anthropogenic evolution of Lăpuş Land (locating settlements, level of accessibility, supporting life and cohesion of human communities, etc.), by adopting and adapting a variety of techniques and traditional hydraulic installations that would allow both to supply life sources, and the overall evolution of Lăpuş society up to present. In this context, we tried to accomplish a thorough analysis of the underground water quantitative and qualitative characteristics, its spatial distribution, its best usage, as well as the manner in which it influenced the apparition and development of human settlements and activities of Lăpuş Land's population.

Keywords: *hydrography, system of settlements, management, spatial distribution, qualitative and quantitative characteristics*

1. GENERAL FRAMEWORK

Water resources have constituted the major issue in the context of organizing and planning the geographical space. Hence, the optimum management of these resources and establishing the optimum balance between the socio-economic activities and the hydrological resources have become necessary, even in the case when, at first sight, the analyzed territory disposes of important and high quality drinking water resources. Being located at the contact aria between the vast Transylvania Depression and the mountainous space of the Eastern Carpathians, an area of morphological structures characterized by the presence of tectonic fractures and faults, that made possible the existence of valuable subsoil resources as well as of a various range of mineral waters, and standing against the general air circulation on West direction, Lăpuş Land disposes of significant quantities of hydrographical resources both at surface and underground, these having a major role in structuring the network of settlements and the types of habitat.

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Much more, water represents one of the elements that determined almost decisively the process of inhabiting Lăpuş Land, favouring, by the water resources stocked in piedmonts, plains, alluvial cones or by the emergence of springs on terraces, or disfavouring the extension of inhabiting the depression, due to the presence of areas dominated by the humidity access or exposed to the risk caused by excess of water during floods.

The important functions water completes in social life are more than well-known, taking from the fact that water is the sine qua non condition to the existence of life and society and the main support of hygiene and health, and, at the same time, it represents an important production factor in various fields, such as: agriculture, industry, transports, etc. Much more, hydrological resources set their footprint, very decisively most of the times, in the structural, compositional and functional characteristics of human habitats and their settling.

Hence, between the demographic density and the level of socio-economic development of a society and its water necessities a relation of direct proportionality establishes, being known the fact that the genesis and evolution of the majority of blooming civilizations was strongly related to the existence of some hydrographical axes well represented and dimensioned in the space – a valid truth available both for the Romanian and Lăpuş Land. Therefore, there have been a few cases in which Lăpuş Land's communities lack in the presence of a water course thus being obliged to find sites with enough underground water to supply their needs, easy to exploit and providing superior quality fresh water or springs with a constant debit and quality water.

The multiple use of hydrological resources, along with the continuous increase of need of water, both for different economic sectors, and for the regular consumption of inhabitants in their households, imposes a thorough knowing of the aquatic resources, Lăpuş Land disposes of, especially when the anthropogenic works affecting them can bring a series of complex alterations in the structure, as well as in the quality of aquatic resources, and in the organizing of the regional geographical space.

The hydrological resources of Lăpuş Land consist of permanent or temporary rivers network, lakes, springs, underground water, whose configuration, genesis, regime and quality is the result of the collaboration between the internal and external agents, the most definite factors being the local and general climatic conditions, along with the petrographic structure, the relief orientation, the local subsidence movements, the particularities of vegetation, and, last but not least, the human activities.

Taking advantage of all the positive aspects of hydrography and the major role it has played in the process of anthropization, we evaluate the way in which the hydrographical elements coordinated and created the background for properly locating the human settlements, so that they would benefit of a more easy access, as well as how it has supported life and cohesion in a specific community. The long and complex evolution process was analyzed as compared to the particularities of local resources, the priorities in usage and the way in which the discovery, the assimilation and the upgrading of technical solution have managed to fulfill some social needs along with their continuous increase and intensification.

Both two major categories of water (underground and surface) have generated the development of a large variety of techniques and traditional hydraulic installations, continuously improved in time - by discovering or assimilating some technical solutions adequate to the social demands continuously improving and becoming priorities, respectively according to the local resources' specificity- in a way in which it would allow it to assure life source as well as the overall evolution of Lăpuş society.

Much more, even since The Brazen Age, the surface hydrographical network has considerably contributed to the humanization of the mountainous and pre-mountainous areas and has also influenced the concentration of habitation along the valley, in this depression space (i.e. the necropolises at Lăpuş and, from the middle – late Brazen Age, the archaeological deposits at Suciu de Sus). The inhabitants used to exploit hydrographical resources as fresh water for various household's needs, for feeding (fishing), as a means of communication and transportation and as a hydraulic force (energy) for home traditional installations, which were characteristic to specific historical periods (mills, gold washing machines, retteries, foundries). Through their richness, the hydrological resources of the Lăpuş Land have not only offered the main source of existence, but they also represented a fundamental element in initiating, assimilating and improving some traditional economic activities, proven necessary for the surviving and evolution of the human community inhabiting this space, such as: milling and fishing. Along with this permanent fight for a superior management of the local productive potential, Lăpuş Land communities have acquired and developed an entire range of techniques and installations specific to the traditional rural society, be it individual or communitarian at first, and in accordance with the hydrographical particularities of each locality and of the entire region, and subsequently becoming elements of their own region rural identity.

The use of hydrographical resources has evolved during times from simple, less evolved practices, mostly particular to the rural households or traditional rural community, to the most complex ones, aiming to fulfill the continuously increasing and broaden needs of the contemporary Lăpuş society.

As a result of the demographic growth and, subsequently, to the apparition and expansion of the industrial-urban phenomenon in Lăpuş space as well, the last decades registered the achievement of new techniques and installations with a higher level of complexity, capable to comply with the latest social and economic demands. In fact, this process supposed to reach the equilibrium between the natural and anthropogenic elements through which the population adapted itself and adopted some environmental elements by introducing specific techniques and partially altering them.

Under these circumstances, the gradual consolidation of human habitats and anthropogenic intervention that carried on along this long process, supposed an active and continuous interaction, having major consequences on the location and profile of settlements, with underground water, as well as with surface water in the analyzed space, whose regime and natural configuration were partially altered. This process intensified especially during the sixth and the seventh decades of the last century, alongside with some large operations of land improvements that were initiated and imposed by the morphological, hydrological and soil particularities of the central depression area that, due to its low altitude was frequently affected by outflows and marshes during spring floods and due to the water stagnation caused by large quantities of precipitations and snow melting, and favoured by the defective drainage together with the reduced infiltration in the impermeable substratum.

Having all these, we notice the fact that, overall, the water resources of Lăpuş Land are able to qualitatively and quantitatively satisfy the nowadays consumption necessities of the local communities.

2. THE QUALITATIVE AND QUANTITATIVE CHARACTERISTICS OF THE UNDERGROUND WATER, ITS SPATIAL DISTRIBUTION AND CONNECTION WITH HUMAN SETTLEMENTS AND ACTIVITIES

If, the hydrological factor has limited the humanization process rather more than the orographical one, especially in the areas of aquatic overabundance, conditions favourable to create marshes, also found in some meadow areas of Lăpuş River, especially at the Rogoz-Răzoare convergence area, and on some of its tributaries, mainly Dobric and Suciu rivers, it is still the one who determined the habitation along valleys, and later on, along with the increase of opportunities to catch springs and intersect the underground water, it allowed the extension of settlements on the terraces, plateaus and even on some interfluves**.** Hence, it is necessary that we know the characteristics of the underground water resources, because they have a major role in providing water supplies for households, and, under certain local circumstances, they could determine the upholding of the humidity excess.

Not many researchers have given much attention to the underground water resources of Lăpuş Land, therefore the three drillings carried out in the sixth decade of the 20th century (1953 and 1959) were located at Strâmbu-Băiuţ (one of them) and at Stoiceni (the other two), the last being completed so as to establish the chemical composition of the mineral water bottled here, the analyses aiming to set if the water was potable and its therapeutic prescriptions. These resulted by determining the concentration of acid and basic ions stock, to which amidogen, and other acids were added. By completing such special analyses, besides illustrating the presence of chemical elements such as Mn, Pb, Zn, Al, Cu, F, Br, I, other physical characteristics of water, like radioactivity and electrical conductibility were identified.

There are significant reserves of underground water on the territory of Lăpuş Land. Its exceptional quality and its quality of being potable, along with the quite reduced depth for its stocking, make that the underground water become the main supplier for Lăpuş localities.

Within the central depression area the underground water is stocked in the Pannonian permeable sedimentary rocks that also contain mineral water. In the terraces of Lăpuş River there can be found underground water, stocked in the coarse material at their base, having quite high hydrostatic levels, sometimes reaching the depth of 1,5 m from the surface and having a slight ascensional character. Much more, the mineral water has an aggressive character over concrete (i.e. carbonated, sulphurous and rather acidified). In Lăpuş meadow the underground water stratum is of about 3 m thick, the used debits ranging from 0,20 to 6,60 l/sec.

The underground water in the central-area of the depression is stocked mostly in the terraces of Lăpuş River, in strata formed by gravel and cobble alternating with interspaces filled with sand clay. The depth at which the underground water is intercepted varies according to the altitudes of the terrace. At the inferior terrace level the underground water emerges at depths of –1,50 m … –2,50 m, and at the levels of the second and third terraces, the level of underground waters is intercepted at a depth of –2,50 m … –5,00 m as compared to the surface level. Another important aspect is the quite ascensional character of the underground water, at drillings that stabilize at the level of –0,50 m … –1,00 m from the surface.

The depth of underground water increases towards the high circle-depression frame, measuring from 5 to 25 m, at the central-depression interfluves and the piedmont morpho-structures and plains that form the periphery of the depression, and over 25 m depth in the Pre-Carpathian sector of Lăpuş Land.

In the mountainous area in the North-West and North-East parts of the region on the territory of Șatra Massif, Lăpuș and Țibleș mountains, the high level of underground water accumulated by rain and snow are determined by the massive presence of volcanic rocks, mainly pyroclastics, and the sedimentary ones, therefore locally appearing in the areas of fissures especially under the form of low flow springs, but with high potable characteristics, reason for which, some of them are used to supply the dwellings, folds, forestry lodges. One of the most known springs in the mountainous area of Lăpuș Land is „Fântâna lui Pintea" spring, located in the highlands of Șatra Mountains.

In the Eastern and South-Eastern compartments of Lăpuș Land, in the areas of Vârtoapele, Preluca Masssif and Pietriș Hill (Dumbrava), and at their contact, the presence of Eocene crystalline limestone creates various conditions for the accumulation of the underground water, thus its infiltration through fissures and its accumulation in the limestone's blanks allowing the formation of some underground water to come to surface like descendant or intermittent springs. For example, such types of conditions are locally found on Păltinișului Valley in Preluca Massif, where a water course, which after a distance of 400 m underground course, comes to surface like a carst spring with high debit.

In the depression area of Lăpuș Land, the underground water with the most abundant accumulations is mostly stocked in the piedmont deposits and alluvial cones, as well as in the terraces and alluvial deposits formed of cobble, gravel, sand, mixed with clay (more coarse in the east and finer towards west), where the underground water has its lower depths. In the meadow areas of the main water courses, the underground water can be found mostly at low depths, being in direct connection with the river's level, thus managing to regulate the water level.

Therefore, if at high waters the river contributes quantitatively to the underground water, the moment it decreases the river draining the underground water. This phenomenon is very well individualized at the confluence between Lăpuș and Dobric rivers and on the Suciu River, downstream Groșii Țibleșului and Suciu de Jos villages, where, the presence of some clay strata with various types of soil cumber water infiltration, thus determining the formation of marshes in the meadows and some of river terraces and the formation of a surface water stratum (i.e. the bridge if the third and the fourth terraces at the confluence area between valleys of Suciu and Lăpuș rivers, crossed by the highroad along Suciu Valley). At the lower side of the valleys, where the drainage becomes insufficient, the quality of water decreases, becoming in some of the cases non-potable, and the level of mineralization increases, thus making them improper for the home use or in the farming sector (i.e. localities of Vima Mică, Suciu de Sus, Suciu de Jos etc.).

The Neocene volcanic manifestations that shaped the gas emanation area of the Oriental Carpathians are the source of several mineral springs (called "borcuturi" in slang, they each have a unique mineral structure, subscribed to various hydro-chemical subtypes, of a pronounced carbonate character), which emerged at the line of contact between the depression area and the volcanic and sub-volcanic massifs from the North-East and North-West quadrant of Lăpuș Land (i.e. the South-West side of Țibleș and Lăpușului mountains, and the South-East side of Șatra Massif).

The main emerged springs are those from Stoiceni, bicarbonate, sodium chlorinate, calcium, magnesium and carbonate mineral water, Borcut, on Drăgoiasa/ Drăgoaia Valley, where there emerged a carbonated mineral water spring and where we find a carbon dioxide bubbling mire area, Băiuț, with" „Izvorul principal" and „Izvorul de jos" on Băiuțului Valley, both of them strongly chalybeate-carbonated, the one from Apa Neagră on Tocila Valley having a great sulphurous content, and Poiana Botizii area, holding four carbonate, chalybeate, slightly sulphurous mineral springs, which influence the black Eocene marl, not to forget Rogoz village.

Another carbonate spring has appeared in the Ţibleşului mountain area. Unfortunately its hydro-geologic and hydro-chemical structure has not been studied yet, though some say that its position suggests some connections of the gas emanation area of Oaş-Gutâi mountains eruptive with that of Rodna, Bârgău and Călimani mountains.

The most important mineral waters, economically and medically speaking, due to the great range of afflictions they are used for, helpful in different degrees and having various therapeutic indications, are those from Stoiceni. The six emergences creating the spring from which water used to be, up to recently, bottled, hold in their chemical structure different degrees of bicarbonate, chlorine, sodium, calcium, magnesium, and carbonate components. The value of mineralization of these waters is of 9283,28 mg% (cf. Mineral waters and therapeutic mud in R.P.R. 1965). Their extremely rich and complex chemical composition (Table 1) is dominated by the bicarbonate ion (almost 3500 mg/l), followed by the carbon dioxide component (almost 1750 m/l), and used in the treatment or prophylaxis of a wide range of afflictions such as: digestive, hepatic-bilious and nutrition diseases, arterial pressure, different chronic diseases.

The chemical composition of mineral waters from Stoiceni (mg/l)

Table 1

Chlorine (Cl^-) Mg‰	**Bicarbonate (HCO_3^-) mg‰**	**Calcium (Ca^{++}) Mg‰**	**Magnesium (Mg^{++}) Mg‰**	**Carbon Dioxide (CO_2) Mg‰**
1668,5	3477,0	349,8	87,2	1752,6
Spring no. 1				
803,4	2699,2	242,7	71,9	1809,2
Spring no. 2				
1549,7	3385,5	355,8	73,2	2151,9
Spring no. 3				
1658,6	3477,0	358,8	62,5	2411,9
Spring no. 4				
1621,0	3477,0	357,3	80,1	2048,8
Spring no. 5				
1508,1	2836,5	301,9	68,2	1581,8
Spring no. 6				
1628,9	3446,5	344,2	75,5	1948,5

Source: Apele minerale şi nămolurile terapeutice din R.P.R. (1965).

One should mention that the mineral waters from Stoiceni can be bottled without needing any technological modifications, and can be stored for an extended period of time without losing their properties, and without any treatment previous to consumption. These special properties have enabled our country to export this water over the ocean, even before World War I. The bottling process of mineral water excludes the decantation of the suspensions, any type of physical or chemical treatment, the introduction of foreign bacteria-static substances, granting it profitableness and competitiveness in comparison with other potable mineral waters.

Bearing in mind their high quality, these mineral waters could represent a future polarizing point for economic investments (considering both their bottling and consumption purpose and their touristic, spa and therapeutic scope), with positive effects upon the future organization of the geographical space, both at a restricted local level and at a more extended, regional level.

The hydro-curb-line orientation reveals the general trajectory of the aquifer overflows to an East-West direction, in conformity to the general inclination of the relief, and implicitly of the surface drainage, from elevations of over 800m (upstream Băiuț) up to an elevation of 300m (at the border with Răzoare locality or at the confluence of Big Valley with Lăpuş, at Vima Mică locality). If per ensemble the hydro-curb-lines configuration finds itself in direct relationship with the orographical peculiarities, the variation of surface water regime, the anthrophic interventions are at their turn a strong perturbation factor, influencing their pressure level. Perturbation factors such as excavation, drainage and retention works have been executed on the following lakes Lighet, Dobricel and Gardului Valley. In this context we highlight that the regime of the underground water stratum has its maximum at the end of winter and the beginning of spring as a consequence of snow melting, its minimum being registered at the end of summer and the beginning of autumn, during the months September and October, when evaporation is more intense and precipitation less frequent.

The predominance of surfaces with low and medium degree of inclination within the corridors of the valleys from the central depression area, along with some areas in which their longitudinal profile register minimum values, favoured the appearance of some sectors characterized by humidity excess, the appearance of hydrophilic vegetation, of altered soils and mire areas, imposing the need for special drainage and banking works that would permit agriculture practices. Such areas are signalled in the meadow sector corresponding to the hydrographical convergence of Lăpuş River from within the perimeter Târgu Lăpuş-Răzoare. These constitute the vastest with humidity excess from Lăpuş Land. Other areas which are representative from this point of view are those from Suciu de Sus-Groşii Ţibleşului sector, due to the alluvial banking of Suciului Valley stream, by its left tributaries, those of Dobricului Valley, caused by the high debits generated by the piedmont mantle of Şatra neck, and those from the Lăpuş winding at Rogoz commune.

The emergence of such areas determined the natural reaction of settlements avoiding them, the orientation of the villages being restricted to their periphery. The communication axes were affected as well, taking for example the route between Rogoz and Suciu de Jos, which does not follow the stream course, ascending instead the III and IV terraces over a segment of several kilometres. Another consequence of the formation of the above mentioned areas was the modification in the specific usage of the terrains, i.e. pasture for cattle.

Subsequently, the humidity excess, caused by the underground and surface water, accelerates the restrictions in the location and further extension of human settlements, damaging the agricultural terrains. The existence of sectors characterized by aquatic overabundance and other environmental elements such as forestry areas also impose the settling of human habitats only to areas where rivers and/or anthrophic interventions have lowered the underground water pressure level (i.e. between Dămăcuşeni and Suciu de Jos, Borcut and Dumbrava villages, situated on the right side of Dobricului valley, in the North part of the mire perimeter from the confluence of Lăpuş and Dobric Valleys etc.).

The development of Târgu Lăpuş locality has also been compromised besides the emergence of some location, social and economic factors specific to the feudal period, by the extended mire terrains resulted from the frequent overflows on the right side of Lăpuş River, South-West from the heart of the locality, and on the left side, North-East of the locality. Some moments in history used the unfavourable relief for defensive purposes. Once the defence element was ceased to be a stringent necessity, and under demographic pressure with the help of modern technology some of the unfavourable relief characteristics were eliminated. Starting with the post war period, Târgu Lăpuş begins a new phase of development once the communist authorities have decided to promote them into the category of urban settlements.

The great depth of the underground water stratum is in some areas, such as the interfluve heights, piedmonts and plains that marginally cover the depression area, an important limitation, difficult, if not impossible, to overcome, for the location of human settlements, due to the difficulty in accessing the indispensable water resource.

The greatly affected areas of this factor's insurgence can be found on the Preluca Massif Plateau, on the great plain that borders Breaza Crest, Şatra piedmont, as well as a series of areas from the Muncelelor surface and Vârtoapelor calcareous surface, even if here not all the spaces present geomorphologic restrictive conditions for the insertion of habitats. Hence, the human settlements and the agriculturural fields avoid such types of location, the lands being destined – due to the reduced productivity of the vegetation floor – almost exclusively to pasturage for cattle.

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MUTATIONS IN THE PRIMARY SECTOR (I) OF THE GEOECONOMIC SYSTEM OF CLUJ-NAPOCA AFTER 1990

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ABSTRACT. – Mutations in the Primary Sector (I) of the Geoeconomic System of Cluj-Napoca after 1990. The following article wishes to analyze, from a geographical perspective, the evolution of the primary sector (I) of the Cluj-Napoca economic geosystem, after the threshold moment of 1989/1990, and to identify the mutations that occurred in this subsystem's economy during the transition period of 1990-2005. The geographical analysis of the primary sector starts from the status quo of the geoeconomic system, prior to the threshold moment, and emphasizes the pressure factors, both internal and external, that acted on the stability of the geosystem, and consequently on its subsystems, and brings forward the "rebalance phenomenon", a rebalance that was based on dramatic mutations, thus leading to a new system, with a new structure and new relations between its components. In the geoeconomic system of Cluj-Napoca, before 1989, the primary sector had a sustainment role. Once the old system collapsed, the primary sector suffered changes that lead to structural-systemic mutations in the number and profile of agricultural units, in the system's ability to attract workforce, in agricultural surfaces, in the number of livestock per category of units.

Keywords: *mutations, primary sector, geoeconomic system of Cluj-Napoca, pressure factors, threshold moment of 1989/1990, transition.*

What this article is trying to achieve is the geographical evaluation and analysis of the economic evolution of the Cluj-Napoca geosystem, after the threshold moment of 1989/1990 and especially *the identification of mutations in the primary (I) sector* of the geoeconomic system of Cluj-Napoca.

By saying economic mutation we refer to a radical change, excluding the meaning of "mutationism", that is a sudden change in the development of a system. This radical change is the result of the evolution of the city's primary sector, which is in fact a subsystem of the upper economic geosystem represented by the city.

The geographical and economic features of the primary (I) sector, belonging to the economic geosystem of Cluj-Napoca, were and still are closely connected to the economic features of the region where the city is situated. There are, however, a series of special features that have arisen from the city's status and urban role at a regional and national level. For the city of Cluj-Napoca, agriculture, forestry and pisciculture had a sustainment role. This meant the supply, either with fresh food products or with specific products that could be processed and added a future market value.

Prior to 1989, when the state owned or cooperative system permitted the organization and the agricultural exploitation in massive specialized units, there were agricultural units with the capacity to substantially contribute to the geosystem's economy. Once the old

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system went into a state of disequilibrium, this economic sector suffered major changes, which lead to structural mutations.

Starting from the statistical data of 1989/1990, I will identify the main subsystemic mutations and extrapolate the cause and effect of each of them.

The overall development of agriculture in Cluj-Napoca in 1989/1990

Table 1

Number of units

Agricultural surface (ha)	Arable surface (ha)	Global agricultural production in CAP (million Lei)
10 831	5 390	32.4

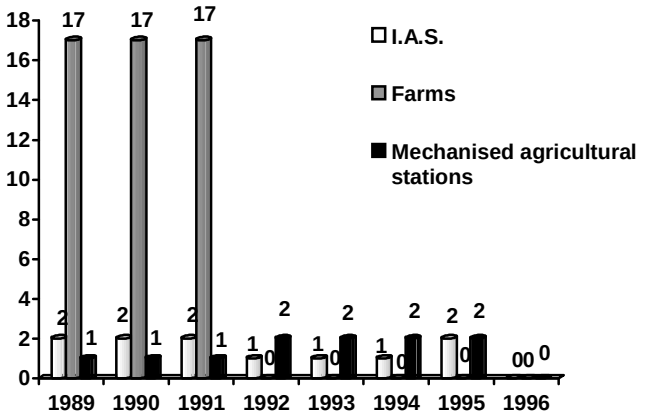

Fig. 1. The number and profile of agricultural units in the geoeconomic system of Cluj-Napoca from 1989/1990 until disbandment (1996).

The number and status of active farmsteads (1989-1995)

Table 2

Number and specificity of units	1989	1990	1991	1992	1993	1994	1995
Total	8365	8365	8274	8040	8040	7660	8042
Farmsteads owned by CAP members	742	742	0	0	0	0	0
Private owned farmsteads	7623	7623	8274	8040	8040	7660	8042

The total surface in the primary sector, after usage, per category of units - ha (1989-1995)

Table 3

D e t a i l s (ha)	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**
Total surface	17926	17926	17952	17952	17952	17952	17952
Units 100% state owned	11353	11353	2120	2052	2052	2052	2052
Private owned units	5374	5374	0	0	0	0	0
Individual farmsteads	1199	1199	15832	15900	15900	15900	15900
AGRICULTURAL SURFACE	10831	10831	10468	10468	-	-	-
State units – Total	5128	5128	2857	-	-	-	-
C.A.P. and intercoop associations	5073	5073	-	-	-	-	-
From which: adjacent lots	563	600	-	-	-	-	-
ARABLE SURFACE	5390	5390	4886	5242	4942	4942	5132
State units – Total	1662	1662	1172	-	-	-	-
C.A.P. and intercoop associations	3242	3242	-	-	-	-	-
From which: used by members	481	518	-	-	-	-	-
Private producers' farmsteads	589	589	3714	-	-	-	-
PASTURES	1819	1819	2838	1623	2601	2601	2934
State units – Total	1429	1429	269	-	-	-	-
C.A.P. and intercoop associations	390	390	-	-	-	-	-
Private producers' farmsteads	-	-	2569	-	-	-	-
HAYFIELDS	1778	1778	1411	1411	1814	1814	1022
State units – Total	549	549	608	-	-	-	-
C.A.P. and intercoop associations	1212	1212	-	-	-	-	-
Private producers' farmsteads	17	17	803	-	-	-	-
VINEYARDS AND WINE GROWING NURSERIES	33	33	34	34	34	34	110
ORCHARDS	1831	1831	1229	1229	1077	1077	1270
State units – Total	1457	1457	791	-	-	-	-
C.A.P. and intercoop associations	136	136	-	-	-	-	-
Private producers' farmsteads	142	142	508	-	-	-	-
FORESTS AND FORESTRY SURFACES	2566	2566	2697	2698	2698	-	-
State units – Total	2526	2526	2697	-	-	-	-
C.A.P. and intercoop associations	39	39	-	-	-	-	-
Private producers' farmsteads	1	1	-	-	-	-	-
OTHER SURFACES	4509	4509	5786	5786	5786	-	-
State units – Total	3362	3362	201	-	-	-	-
C.A.P. and intercoop associations	262	262	-	-	-	-	-
Private producers' farmsteads	333	333	55	85	-	-	-

The cultivated agricultural surface with its main crops and total production values (1989-1995)

Table 4

Production (tons) / Surface (ha)	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**
Wheat; rye	***3452***	***3556***	***2870***	***1976***	***4660***	***8116***	***12386***
	1383	1426	859	415	2478	2103	2752
Barley	***1168***	***1560***	***738***	-	-	-	-
	273	365	610				
Corn	***3720***	***2886***	***2350***	***1950***	***3794***	***2064***	***2447***
	2114	1206	753	1295	1299	934	674
Sugar beet	***424***	***1045***	***832***	***625***	***90***	***400***	***3615***
	34	45	23	33	4	72	132
Potatoes	***2110***	***2884***	***1048***	***1953***	***4069***	***3677***	***3906***
	246	191	122	157	324	280	259
Vegetables	***3335***	***3415***	***1690***	***2491***	***1757***	***2641***	***3780***
	460	471	357	312	288	378	333
Fruit	***13842***	***15432***	***18565***	***7704***	***12197***	***4030***	***8854***
	-	-	-	-	-	-	-

The previous table emphasizes mutations concerning the cultivated surface and the agricultural production in the Cluj-Napoca geosystem, on a timeline of 6 years. The only examples of significant expansion in terms of production and surface are those of wheat (crucial for the food industry), potato and sugar beet. The potato is a cheap and plentiful crop (yields over 15 000 tons/ha), which can be raised in a wide variety of climates and locales, on large surfaces as well as small lots. Concerning sugar beet, trade liberalization, the high demand of sugar on the market and its high economic efficiency (a production of 20-50 tons of roots/ha will yield 4-6 tons of sugar/ha), among other factors, make it a paramount crop within the agricultural subsystem of Cluj-Napoca.

As for the rest of the crops (barley, corn, fruit), the relative decrease in production and surface may be linked to the external food trade, meaning imported goods were cheaper, thus more appealing for the market, than local crops, and to the disbandment of all cooperative run farmsteads that had the ability to yield vast amounts of crops. This paved the way for the retrocessions of the early 90s and the emergence of a type of agriculture based mainly on small, mechanically defficient, private farms, able to produce only an insignificant quantity of crops.

The number of livestock per category of unit (1989-1995; 2003)

Table 5

Category of livestock		1989	1990	1991	1992	1993	1994	1995	2003
All sectors (number)	horned cattle	5328	5516	5375	5510	5282	5120	8219	3406
	pigs	14581	15252	16542	17246	2767	4380	12678	14434
	sheep, goats	13601	12612	15653	16334	12348	12787	6201	10426
	poultry	230500	136978	159277	146737	123981	114692	126786	338159
State units (number)	horned cattle	2260	2124	2785	-	-	-	-	-
	pigs	8759	9350	11046	-	-	-	-	-
	sheep, goats	5161	74563	7343	-	-	-	-	-
	poultry	180000	174000	99000	-	-	-	-	-
CAP and intercooperative associations	horned cattle	2848	2324	1440	-	-	-	-	-
	pigs	-	-	-	-	-	-	-	-
	sheep, goats	3012	2530	583	-	-	-	-	-
	poultry	-	-	-	-	-	-	-	-
Private farmsteads (number)	horned cattle	421	811	811	1150	1825	2020	1472	-
	pigs	4821	2856	5496	3660	2767	3880	5050	-
	sheep, goats	3292	1699	7727	7222	8727	8027	5200	-
	poultry	44393	47392	60277	47066	34520	40692	2600	-

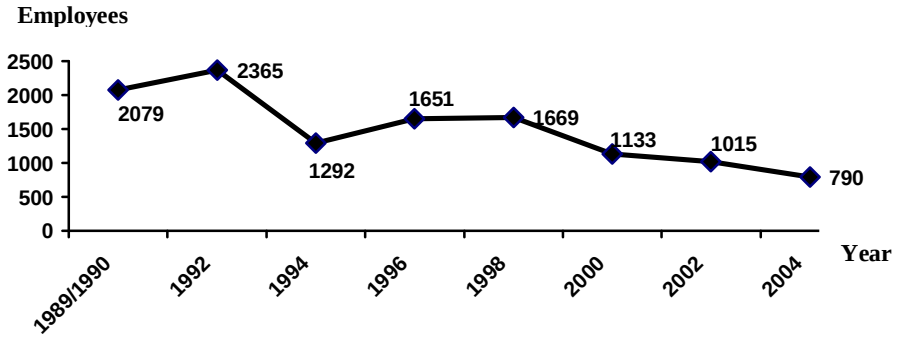

Fig. 2. The fluctuation of the workforce involved in the primary (I) sector (1989-2004).

By comparatively analyzing the statistical data on the activity of this sector, during 1989-2005, even in the difficult situation of lacking information from The Statistics Service or change in the statistical benchmarks, it is clearly visible that there were massive mutations in this field. In the next pages, some of the most important mutations will be emphasized, both graphically and numerically. These include *mutations in the ownership of land, mutations in the structure of agricultural units, the disappearance of collective-cooperative forms of agricultural management, the dramatic decrease or severe production fluctuations in field crops, dramatic fluctuations of livestock productions and the disappearance of massive livestock farmsteads, substantial mutations in the sectors ability to attract workforce and changes in the hierarchy of land categories (usage).*

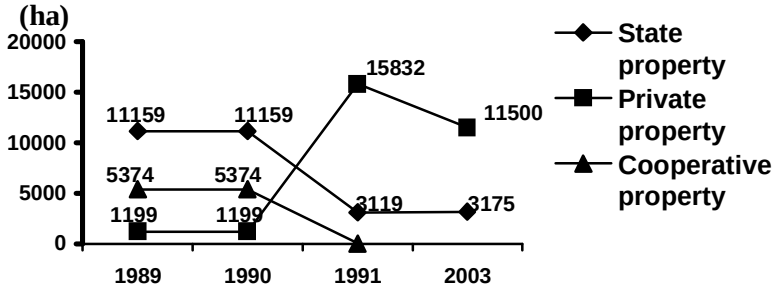

Fig. 3. Mutations in land ownership after 1990.

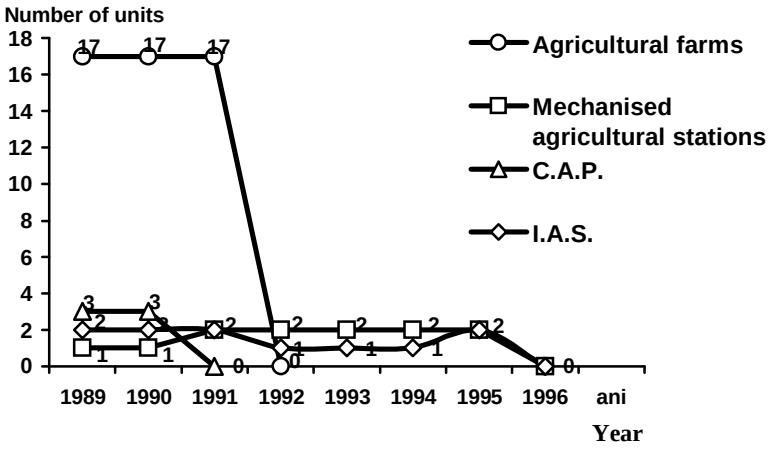

Fig. 4. Mutations in the structure of farmsteads – the disappearance of collective cooperative farms and agricultural mechanized units or stations (1989-1996).

Once the retrocession law (Law 18/1991, published in the Official Monitor nr. 37 from 20/02/1991) went into effect, the farmsteads no longer had the necessary resources to continue production. Consequently, by the year 1996 they were all disbanded. Unfortunately, the legislative and organizational chaos also made the agricultural mechanized units or stations disappear.

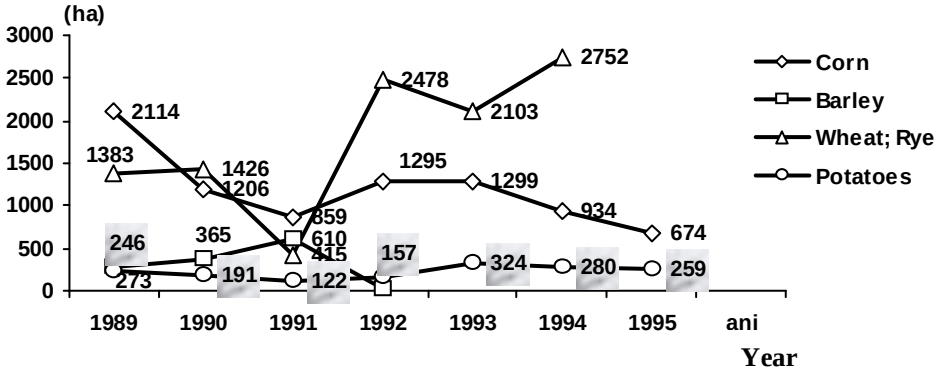

Fig. 5. Mutations in field crop structure and fluctuations in cultivated agricultural surface (1989-1995).

After a period of 15 years in which it went through tremendous pressures: legislative (national and local), political, restructurings, extension of the "intra-muros" and expansion of the urban infrastructure, retrocessions to former owners, the primary (I) sector of the geoeconomic system of Cluj-Napoca had the following features.

The situation of agricultural surfaces per category of units in 2003 (ha)

Table 6

Details	Total number of units	Individual farmsteads	Registered units	From which:		
				Agricultural enterprises and associations	Trade firms	Public administration units
Number of units	12536	12477	59	3	30	26
Total surface (ha)	14676	6665. 10	8011. 13	2. 29	3535	3181. 10
Agricultural surface used in the place of residence (ha)	8505	3891. 69	4613. 53	0. 23	1371	2772. 44
Irrigated surface (ha)	328	2. 80	325. 43	0	243	50. 43

Table 6 emphasizes a negative aspect of the Cluj-Napoca agricultural subsystem, after the threshold moment of 1989/1990. Even though, in 2003, individual private farmsteads made most of the agricultural sector in terms of units and surface, they also had the smallest irrigated surface, only 0.85% of the total irrigated surface. This phenomenon can be explained by the lack of interest and financial resources, necessary for the maintenance of these extremely costly irrigation systems, from the new owners.

The overall situation of the primary (I) sector per category of units (2003)

Table 7

Details	Total number of units	Individual farmsteads	Registered units	From which:		
				Agricultural enterprises and associations	Trade firms	Public administration units
Number of agricultural units	12536	12477	59	3	30	26
Arable land (ha)	8411	3915.08	449. 41	0. 20	2369	2001. 98
Cereals (ha)	4013	2357. 6	1655. 9	0	1254	9360
Pulse (ha)	8. 99	8. 99	0	0	0	0
Industrial plants (ha)	339. 37	44. 47	249. 90	0	239	34. 60
Potatoes (ha)	213. 33	173. 63	39. 70	0	30	8. 70
Sugar beet (ha)	173. 71	30.71	143	0	123	0
Vegetables; fruit (ha)	186. 18	159. 49	26. 69	0	11. 10	16. 59
Flowers (ha)	26 . 35	2. 52	23. 83	0. 18	0	20. 65
Fodder plants (ha)	1178. 8	287. 74	891. 14	0	677. 7	100. 35
Plants for seeds (ha)	33	0	33	0	0	0
Land not used (ha)	2186. 1	830. 11	1356. 2	0. 02	33. 91	1322. 08

What the previous table brings into view is a major post 1989/1990 mutation within the agricultural subsystem of Cluj-Napoca, that is the ever-increasing significance of the individual farmsteads (a private form of property), due to retrocessions. In 2003, this type of property held 99% of the agricultural units of the Cluj-Napoca geosystem (also see figure 3), 46% of the arable surface, 100% of the surface cultivated with pulse, as well as a very high percentage of potato (81%) and fruit/vegetables (85%) cultivated land.

The number of livestock per category of agricultural units in 2003 (heads)

Table 8

Details	Total number of units	Individual farmstead	Registered units	From which:		
				Agricultural enterprises and associations	Trade firms	Public administration units
Cattle	3106	2026	1180	0	1036	101
Sheep	10147	9222	905	0	0	905
Goats	279	279	0	0	0	0
Pigs	14437	9821	4606	0	98	4416
Poultry	538159	58520	479639	0	456026	23613
Horses	504	443	61	0	23	38

The sector's organization is also available from the statistical data provided by the Administration of Public Finance Cluj-Napoca, on registered firms active in agriculture, forestry, pisciculture and hunting in 2005.

The situation of registered agricultural units in 2005

Table 9

Activity	Number of firms	Social capital (lei)	Income (lei)	Income tax (lei)
Growing cereals	33	521968	14670516	114635
Growing vegetables	15	16211	2090362	11638
Growing fruit	4	8119	2795746	49960
Cattle raising	9	2754	32545	499
Sheep/goat raising	1	200	78	0
Pig raising	6	1200	521076	2759
Poultry raising	20	1927239	18044023	38059
Other animals	11	3200	643650	14718
Activities in mixed farms	12	2612721	4279256	19791

Activity	Number of firms	Social capital (lei)	Income (lei)	Income tax (lei)
Landscape architecture	35	7118406	10874759	447357
Services for raising animals	1	50000	76676	0
Hunting	4	12050	1975299	2665
Forestry	11	3468418	4973696	31095
Fishing	1	200	116557	254
Pisciculture	5	558200	778962	0
Total	**168**	**16 300 906**	**61 873 251**	**733 430**

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NEW NATION STATES, DOUBLE NATION STATES OR GEOPOLITICAL ANOMALIES ON THE MAP OF EUROPE?

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ABSTRACT. – New Nation States, Double Nation States or Geopolitical Anomalies on the Map of Europe? The Case of Cyprus, the F.Y.R. of Macedonia, Kosovo, Montenegro, Bosnia-Herzegovina and the Republic of Moldova. The political division of the world in the cold war period resulted among others in the creation of divided nation states in Europe and Asia. The fall of the communist regimes led to the reunification of these countries, but the disintegration of the socialist federal states in Europe generated the formation of new states on the map of Europe, so that at present almost each nation in the Balkans has at least two political entities. Though each of these represents a unique case both from the historical-political and from the socio-economic points of view, there are some important similarities between the historical and the more recent evolution of these states. This study aims to point at the similarities and at the differences between the evolution of the South Eastern European countries, in the context of the geopolitical situation of the Balkans' region and of the Euro-Atlantic integration.

Keywords*: nation states, ethnic structure, divided nations, integration.*

The division of the states is not a new phenomenon in the world history. The conquering wars, the peace treaties following them, the dynastic alliances or even peaceful agreements between the great empires offer more than sufficient examples of former countries (such as Burgundy, the Czech and Hungarian mediaeval kingdoms, or Poland in the late 18th century) that lost important parts or the whole of their territory in favour of the more powerful conquerors.

The formation of the modern nation states in the 19th and early 20th centuries (Germany, Italy, Greece, Romania, Poland, Czechoslovakia, Yugoslavia) seemed to put an end to the political division of many peoples sharing the same language, culture and traditions, but the problem of the other peoples living in the same space remained open. The national ideology supported the creation of "big nation states" and disregarded the interests of their neighbours and the very fact that these "ideal" political entities were significantly covering each other on the map, threatening not only the regional stability, but the whole "balance of power" in Europe.

However, after World War II, most of the nation states remained stable within roughly the same borders (except Germany, Poland and the newly annexed USSR territories) during several more decades, as a result of the post World War II peace treaties, stable democracies and a fast economic growth in the countries situated to west of the Iron Curtain, and of strongly centralized, communist governments in the east. The centrifugal tendencies within the nation states were of course not unknown even in the west (let's just

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mention the separatist movements of Northern Ireland, Corsica or the Basque Country), but the liberal democracy practiced for decades, the freedom of movement between the countries and a carefully managed minority policy in the former EEC members was able to keep the "nationalist problem" behind reasonable limits, with few extremist features.

The division of the countries in the cold war era (Germany, China, Korea, Vietnam and Yemen) was a completely different, new phenomenon, a consequence of the newly created occupation zones (in Germany and Korea), of the communist revolution in China, and of the colonial war in Vietnam. The maintenance of these divisions soon became strongly connected to the logic of nuclear dissuasion: the possibility of a total mutual destruction in a nuclear war stopped both camps from a decisive confrontation, even if periodically they were strongly supporting opposing sides in civil wars (like in Korea, Vietnam, Angola, Nicaragua or Afghanistan) or in other regional conflicts (the Middle East or East Africa). Instead, they accepted as a compromise the division of certain countries, with a communist regime in one part of it (East Germany, China, North Korea, North Vietnam, South Yemen), and a pro-western regime, even if often not so democratic, in the other (West Germany, Taiwan, South Korea, South Vietnam and North Yemen). As it is well known, the war in Vietnam ended in 1975 by the total collapse of the Saigon government and it resulted in the reunification of the country by military force. The fall of the pro-eastern regimes in two other states (Germany and Yemen) resulted in a peaceful reunification, while the Kuomintang regime is still flourishing in Taiwan and the Kim dynasty still reigns in North Korea, reinforced by the army, in spite of its disastrous economic and social situation. The only exception was the case of Cyprus, where actually two NATO member states (Greece and Turkey) were confronting each other and which is still divided today, though the southern part of Cyprus joined the E.U. in 2004.

The last period of the cold war (1980-1989) was not only that of a deepening economic crisis, but it also resulted in a political instability in the Eastern European countries ending at first by the anticommunist revolutions of the soviet satellite states in 1989 and soon followed by the collapse of Yugoslavia and the USSR itself in 1991. The map of Europe was significantly redesigned, with the division of Czechoslovakia in 1993 as a peaceful epilogue. However, the process of disintegrating national territories, thought at the time as unique and internationally accepted only because it was considered a result of exceptional historical circumstances, seems now far from being over. The tragedy of Yugoslavia was soon followed by several wars in the Caucasus region (first between Armenia and Azerbaijan, then in Chechnya and in Georgia), and other centrifugal tendencies appeared in the C.I.S. (and within the Russian Federation itself), in the Balkans or in other parts of the world.

There are two basic principles on which the national states rely as geopolitical entities: the first one is the *principle of self-determination*, stipulating that every nation shall be enabled to possess its own national territory and finally a sovereign state. The other one is the *principle of the inviolability of the frontiers*, declaring that once a state is formed with internationally recognized frontiers, these cannot be changed without the mutual agreement of both neighbours or of all interested parts. Though apparently very nice and correct, the contradiction between these two principles is obvious, especially if we consider that on the world map there are more nations (or at least ethnic communities) than states, this is why the already existing states are interested in reinforcing the second principle, while the usually smaller or "new nations" (i.e. Palestinians, Kurds, Chechens, Ossetians, Abkhazians, Kosovars, Basques, Corsicans etc.) claim for their self-determination.

The contradiction between the two mentioned principles is not a new phenomenon. As a matter of fact, if the principle of self-determination was formulated as a result of the national bourgeois revolutions of the 19th century and represented a crowning of the legitimate fight for freedom of the peoples, the principle of the inviolability of the frontiers appeared as a response to this fight, claimed mainly by the multinational dynastic empires who were trying to preserve their power and territorial integrity. Any attempt to modify these frontiers was thus considered as a separatist and irredentist movement.

Though the basic contradiction between these tendencies remains until today, the historical and political context of the question, at least in Europe, is much different than two centuries ago. Firstly, there are no more dynastic empires to subjugate the smaller peoples of Europe and the aggressive totalitarian systems of the 20th century (like nazi Germany or the Soviet Union) disappeared hopefully forever. Secondly, while present Europe is with a few exceptions dominated by pluralistic democracies, the political regimes of the 19th century empires in continental Europe (France, Germany, Austria-Hungary, Russia and the Ottoman Empire) were all authoritarian regimes reinforced by the military. Even the British Empire, though a parliamentary monarchy, was less democratic than it is today, especially if we consider the social structures and the colonial policy. Last but not least, the international organizations (the E.U. and NATO) managing the present European political matters are not only stronger and more democratic, but cover the most important part of the continent, while the international structures of the 19th century were dominated by permanently changing alliances and a constant fight to maintain the "balance of power" between the major states.

The birth of new peoples and nations is a natural phenomenon in European history. The present picture of the European nations is the result of a long and complex evolution, marked by massive demographic movements and constant melting, with the formation of new peoples and also the disappearance of others. The proof for the birth of new nations is also the differentiation of new languages from the ancient ones (like the Romanic languages from the ancient Latin, the German languages from the ancient German, or more recently the Ukrainian and the Belarusian from ancient Russian). This process is also going on at present, but in the modern times the natural formation of the languages was often strongly influenced by political purposes: the nationalist ideology claimed the existence of a well-defined, separate language, in order to emphasize the cultural individuality of an ethnic group and finally justify the formation of a new nation state (like the case of Macedonian, Montenegrin or Moldavian languages) or, on the contrary, assimilate a language to another one only to justify the political unity of some otherwise different territories (like in the case of the Serbo-Croatian language). The very definition of some languages and cultures was thus submitted to the actual political requirements.

In the first half of the 20th century, the ethnic structures and the evolution of the nation states were merely influenced by the two major conflagrations, by the evolutions preceding these wars and by the peace treaties following them. The international borders were established by the war winners and the situation of smaller ethnic groups or minorities was considered as marginal.

After World War II, the centrifugal tendencies within the European nation states followed different paths in different parts of the continent: while some western countries (like Italy, Switzerland, the Benelux states, Finland) accepted cultural diversity as a precious heritage and took important measures to preserve it, others (France, Britain) followed rather the "melting pot" model, while the non-democratic western regimes (Spain, Portugal, Greece) had an openly repressive policy toward minorities and the communist regimes chose to freeze the ethnic problem under the slogans of socialist internationalism.

The consequences of these policies became obvious in the next decades, when Spain, France and Britain were facing the radicalisation of separatist movements, and the national conflicts exploded after 1989 in the Balkans and the former USSR. The process of political fragmenting in Eastern Europe resulted in the appearance of new nation states (like Ukraine, Belarus, the Baltic States, the Czech Republic, Slovakia, Slovenia, Croatia), but also of an important number of "special cases", taking into consideration that in the Balkans and in the former USSR there are large areas of ethnically very mixed population, making impossible the formation of typical nation states.

As a result of the conflicts, peace treaties and bilateral negotiations during the nineties, the map of South Eastern Europe after the crossroads of millennia shows now in a larger context the existence of at least two states for each nation in the classical meaning of the term: there are two Greek states (Greece and Southern Cyprus), two Turkish states (Turkey and Northern Cyprus), two Bulgarian states (Bulgaria and the F.Y.R.O.M.), two Albanian states (Albania and Kosovo), three Serbian states (Serbia, Montenegro and the Republic of Srpska), two Croatian states (Croatia and the Muslim-Croatian Federation), and even two Romanian states (Romania and the Republic of Moldova).

Though these political entities have much in common, each of them had a different evolution, therefore their differences are stronger than the resemblances and it is almost impossible to include them in a typology, because they are rather special cases than typical phenomena. A short presentation of the evolution of each problematic case will show how complex the phenomenon is:

Cyprus is geographically the remotest territory from the Balkan area: situated in the Eastern Mediterranean, some wouldn't even include it into Europe, though its history, culture and economy is much closer to Europe than to Asia. The island was conquered by the Turks in 1571 from the Venetians, and taken by Great Britain in 1878 as a compensation for the British support of Turkey at the Congress of Berlin. A British colony until 1960, it attained independence after an agreement between the United Kingdom, Greece and Turkey, granting the three states guarantor rights.

Dissatisfied with the policy of president Makarios, the Greek military government organized a coup on 13 July 1974. Nikos Sampson was declared president and declared union with Greece. Turkey protested, unsuccessfully sought British intervention, then invaded Cyprus, 37% of the land becoming a Turkish occupation zone. In 1983 Turkish Cypriots unilaterally proclaimed independence, which was only recognized by Turkey (Clogg, R. 2006). The Republic of Cyprus is at present a constitutional democracy with a booming economy, member of the United Nations and since 2004 of the European Union, while the Turkish Republic of Northern Cyprus remained underdeveloped and over-dependent on help from Turkey. The two opposite parts made several attempt toward reunification, but the unsolved question of refugees, land ownership and confiscated real estate makes difficult any agreement. The plan for reunification of U.N. Secretary General Kofi Annan was rejected in 2003 by the Cypriot Turkish leaders and a new version was rejected in 2004 at a referendum by the Greek Cypriots. At present more moderate leaderships on both sides seem to be more favourable towards reunification and the negotiations are going on.

The Former Yugoslav Republic of Macedonia represents the northern part of historical Macedonia, inhabited predominantly by Slavic population (speaking a Bulgarian dialect), with important Albanian, Aromanian, Greek, Turkish and Gypsy minorities. The historical region of Macedonia was part of the Ottoman Empire until 1878, when for a short period (after the peace of San Stefano), it became part of Greater Bulgaria (supported by

Russia). At the Congress of Berlin, the western powers did not agree with the creation of a strong Bulgarian state under Russian protectorate, this is why Macedonia was given back to Turkey, where it remained until the First Balkan War (1912). The northern part came back to Bulgaria in 1912, after the Second Balkan War (1913) it was annexed by Serbia, then again by Bulgaria during World War II, and retaken by Serbia in 1945. Yugoslav president Josip Broz Tito separated Yugoslav Macedonia from Serbia after the war. It became a republic of the new federal Yugoslavia (as the Socialist Republic of Macedonia) in 1946, with its capital at Skopje. Tito also promoted the concept of a separate Macedonian nation, as a means of disconnecting the ties of the Slav population of Yugoslav Macedonia with Bulgaria (N. K. Martis, 1984, Ch. & B. Jelavich, 2006).

In 1991 Macedonia declared its independence from Yugoslavia as the Socialist Republic of Macedonia. The appropriation by the "Republic of Macedonia" of what Greece held as its "Greek symbols", raised concerns in Greece as well as fuelling nationalist anger, this is why the Greek government objected formally to any use of the name Macedonia and also to the use of Macedonian symbols. The United Nations recommended recognition of the "Republic of Macedonia" under the temporary name of the "former Yugoslav Republic of Macedonia" (FYROM), which would be used internationally while the country continued to use "Republic of Macedonia" as its constitutional name.

Kosovo was a historical region within mediaeval Serbia until 1455, when the whole kingdom became part of the Ottoman Empire. Though initially predominantly Serbian, the ethnic structure of Kosovo changed gradually due to the northward migration of Serbs and to a higher fertility of Albanians, so that at present Albanians represent more than 90% of the population. Part of modern Serbia since 1913, Kosovo became an autonomous province within the Yugoslav Socialist Republic of Serbia under the leadership of president Tito, after whose death in 1980 the nationalist Serbian government withdrew the autonomy of the province, triggering the radicalisation of Albanian nationalists and the creation of parallel state structures (with official Serbian and underground Albanian institutions) within the territory. On July 2, 1990, an unconstitutional Kosovo parliament declared Kosovo an independent country, the Republic of Kosova.

The Milosevic regime of Serbia decided a military solution of the Kosovo problem in 1999 and started the invasion of the province with massive ethnic cleansing, which caused the intervention of NATO forces, notably air raids on Serbia between March 24 and June 10. After the war, the province came under NATO administration reinforced by peacekeeping forces (KFOR). On 17 February 2008 the Assembly of Kosovo approved a declaration of independence, recognized by several states the following days, despite protests by Russia and others in the UN. The Security Council remains divided on the question: of the five members with veto power, USA, UK and France recognized the declaration of independence, and China has expressed concern, while Russia considers it illegal, therefore Kosovo has no prospects for United Nations recognition due to Russian and Chinese veto in Security Council.

Montenegro (Crna Gora) was the last free monarchy of the Balkans, finally falling to the Ottomans in 1499, who annexed it to the sanjak of Skaters. In the 16th century it became a special autonomy within the Ottoman Empire, and later it became a theocracy led by the Serbian Orthodox Metropolitans. The Principality of Montenegro achieved recognition of independence in 1878 and in 1910 became a Kingdom. In World War I Montenegro sided with Serbia against the Central Powers, suffering a full scale defeat to Austria-Hungary in early 1916. In 1918 the Allies liberated Montenegro, which was subsequently merged with

Serbia. In 1922 Montenegro formally became the Zeta Area of the Kingdom of Serbs, Croats and Slovenes, and in 1929 it became a part of the Kingdom of Yugoslavia. In World War II the Axis forces established a puppet Independent State of Montenegro, liberated by the Yugoslav Partisans in 1944, after which Montenegro became a republic within the Socialist Federal Republic of Yugoslavia (B. Jelavich, 2006).

After a referendum on remaining in Yugoslavia in 1992 (boycotted by the Muslim, Albanian and Catholic minorities as well as by the pro-independence Montenegrins), Montenegro remained in the federation with Serbia. In 2002, Serbia and Montenegro came to a new agreement and in 2003 the Yugoslav federation was replaced in favour of a looser state union named Serbia and Montenegro. On June 3, 2006, after a new referendum, the Parliament of Montenegro declared the independence of Montenegro.

Bosnia-Herzegovina was a typical border zone since ancient history, as situated at the frontier between the Western and Eastern Roman Empire. The principalities of Serbia and Croatia split control of Bosnia and Herzegovina in the ninth and tenth century, later the area was contested between the Kingdom of Hungary and the Byzantine Empire, then Bosnia emerged as an independent state under the rule of local bans.

The four centuries of Ottoman rule had a major impact on Bosnia's ethnic structure, which changed several times as a result of conquests, wars with European powers, migrations, and epidemics. A native Slavic-speaking Muslim community emerged and finally became the largest of the ethno-religious groups, as a result of a gradually rising number of conversions to Islam. The Herzegovinian rebellion, a widespread peasant uprising in 1875, rapidly spread and came to involve several Balkan states and Great Powers, which eventually forced the Ottomans to cede administration of the country to Austria-Hungary through the Congress of Berlin in 1878. The imperial decision to formally annex the province in 1908 reinforced the Serbian nationalists' struggle for reunification and hastened the eruption of World War I, after which Bosnia-Herzegovina joined the newly formed Kingdom of Serbs, Croats and Slovenes.

During World War II, Bosnia was ceded to the Independent State of Croatia, when at least 700,000 Serbs died as a result of genocide perpetrated by the Croatian Ustasha. Many Serbs in the area took up arms and joined the Chetniks, a nationalist and royalist resistance movement that conducted guerrilla warfare against both the fascist Ustashe and the communist Partisans. In 1943, Bosnia and Herzegovina was reestablished as a republic within the Yugoslavian federation (Ch. & B. Jelavich, 2006).

After the collapse of Yugoslavia, the Serb members of Bosnian parliament, abandoned the central parliament in Sarajevo, and proclaimed Republika Srpska in August 1992. In November 1991, the party branch in Bosnia and Herzegovina of the ruling party in the Republic of Croatia proclaimed the existence of the Croatian Community of Herzeg-Bosnia, as a separate whole on the territory of Bosnia and Herzegovina, with Croat Defence Council as its military part. After this Bosnia-Herzegovina became for years the theatre of military disputes between Serbian and Croatian nationalists (Bosnian War, 1992-1995), with the Muslims caught in the middle. Ethnic cleansing and civil rights violations especially against non-Serbs were rampant in these areas. In March 1994, the signing of the Washington Accords between the leaders of the republican government and Herzeg-Bosnia led to the creation of a joint Bosniak-Croat Federation of Bosnia and Herzegovina. A NATO bombing campaign began in August, 1995, against the Army of Republika Srpska, then in December 1995, the signing of the Dayton Agreement brought a halt to the fighting, roughly establishing the basic structure of the present-day state.

The Republic of Moldova was created in its present frontiers in Stalin's Soviet Union, the historical region also known as Bessarabia representing the eastern half of the Mediaeval Principality of Moldavia (which came under Turkish rule in the 16th century), situated between the rivers Prut and Dniester. The repeated wars between Russia and the Ottoman Empire in the 18th century finally resulted in the access of Russia to the Black Sea, and at the Treaty of Küçük-Kainarji (1774), Russia also got the protectorate for the orthodox population in the Danubian Principalities. Another war between the two empires took place in 1812, and Russia won again, but the threat of Napoleon's armies on the western front hastened Russia to finish the Turkish war, so at the Treaty of Bucharest (1812) emperor Alexander I had to accept as war capture only the land between the rivers Prut and Dniester.

Part of the Russian Empire until its fall in 1917, Bessarabia (and the northern part of the historical Bucovina) came back to Romania by the declaration of the National Council of the province in 1918. In 1924 the Moldovan Autonomous Soviet Socialist Republic was established on a strip of Ukrainian land on the left bank of the Dniester River. This situation was never accepted by Stalin's Russia, who declared Bessarabia to be Soviet territory under foreign occupation and claimed it back in 1940, when Romania was in a desperate international situation. The Soviet occupation of Bessarabia became the main reason for Romania to finally join nazi Germany in the war against the USSR.

In 1944 the Soviet Union regained Bessarabia and Northern Bucovina, and the Red Army occupied Romania. While Northern Bucovina was incorporated into the Ukraine, Bessarabia was divided between the newly created Moldovan Soviet Socialist Republic (the northern and central parts) and Ukraine (the southern part also known as Budjak, with a very mixed ethnic composition). As a compensation, a narrow land strip situated on he left bank of the Dniester River, with an initially predominantly Romanian population and later known as Transnistria, was added to the Moldovan Republic. In the meantime, the ethnic composition of Moldova was significantly modified by the immigration of Russians and Ukrainians, and the locally spoken Romanian was stated as a separate, Moldavian language and declared in 1989 the official language of the republic.

After the fall of the USSR in 1991, the Republic of Moldova declared independence, recognized by Romania among the first states. The declaration of Transnistria as a separate soviet republic in 1990 lead to military conflict between the armed forces of Chişinău and the separatists of Tiraspol (Bendery), and was finished by the intervention of the 14th Russian Army, still stationed in the eastern bank of the Dniester.

Each of these cases is unique and none of them typical for the whole of the region. Nevertheless, there are some similarities that have to be underlined:

- the "double nation states" are all situated (with the exception of the larger part of Turkey) in South Eastern Europe, used to belong (except Croatia) until 1878 to the Ottoman Empire (Bessarabia until 1812), and most of them (except Greece and Turkey) were communist countries from 1948 to 1989;
- though the "division of the nations" has different historical causes for each case, the mixed ethnic structure is the main cause for all of them;
- each of the greater nation states followed in the past strong nationalist policies with a tendency to oppress or assimilate ethnic minorities;
- the smaller states were in the 20th century repeatedly subjects to military conflicts and occupation;
- the smaller states have a generally underdeveloped, poor economy, dominated by agriculture, with a high rate of unemployment and with specific social problems;

- the political status of the smaller nation states (or at least of some parts of their territory) is today still undefined and therefore their future is uncertain.

The political long-term solution for the divided nation states would be the future E.U. membership of all of them, which would not only provide economic stability, but also redo the disrupted connections between the territories separated by borders. On the short term, these territories must however solve their disputes first, whether they are of ethnic, religious, political or economical nature, and give up forever the military solution. The image of a peaceful Balkan Peninsula fully integrated to the European structures, though not impossible, will probably take a few more decades to come true.

On the other hand, the idealistic geopolitical picture of the 21st century that seemed to take shape in the early nineties (a world dominated by liberal democracy with only one superpower) seems now to be shadowed by some revivals of the cold-war attitudes and challenged by the emergence of new global powers, like China and Russia. The recent disastrous foreign policy of the United States resulted not only in a bitter opposition of the Arab world and a reinforcing of radical Islam, but also undermined the prestige and power of the United Nations and especially of the Security Council. New political and military pacts seem to take shape under the slogan of anti-American opposition, putting together very different states and regimes like China, Russia, North Korea, Iran and Venezuela. There are many other conflict regions in the world (like the Caucasus or the Middle East) facing long-term developments, and compared to these the Balkans are apparently an easy case, however the traditional political mentalities and attitudes have to be changed in order to make this region prosper at its full potential.

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NATURAL AND ANTHROPOGENIC PREMISES OF TOURISM PLANNING AND DEVELOPMENT IN THE LITTORAL ZONES

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ABSTRACT. – Natural and Anthropogenic Premises of Touristic Arrangement and Development in the Littoral Zones. The study accomplishes an analysis on the categories of factors with implication in the territory's arrangement, with a special view upon the touristic arrangement of littoral zones. The anthropization of the littoral zones was a continuous process, recalling, as intensity, the beginning of the Great Geographical Discoveries period and having an explosive character in the 20th century. The conditions and natural resources which stimulated this process, evolutionally and specifically, were also involved in the outlining and imposing the most ample and complex touristic arrangement at a world level, with a linear character, of strip. The conditions of relief determined the type of touristic arrangement. The climate contributed to a different extension of the touristic activities during the year. The water of the seas and oceans in the littoral zone, with certain physical and chemical specific features, have nuanced and differentiated the types and forms of tourism practiced, but also the aquatic touristic arrangements. The aquatic ecosystems increased the degree of touristic attractivity. The settlements, some with a duration of millenniums, intensely populated and with complex activities, predominantly related to the harbours, initially constituted themselves as first destinations of an incipient littoral tourism, forming subsequently the armor which constituted the basis of the touristic mega-arrangements, unleashed from the second half of the last century and continuing till nowadays.

Keywords: *littoral touristic arrangement, littoral tourism, littoral touristic resorts, touristic potential of the seacoast.*

1. GENERAL ASPECTS

Dependent on the major morphology of Terra, on the repartition of dry, oceanic and marine surfaces, as well as on the particularization of the contact among them, the littoral zone spreads on more that 400 000 km length, from which 47,8 % belongs to the continental littorals, 31,0 % to the littorals of the big islands and 21 % to the small islands, with a great degree of dissemination, but cumulating wide areas, especially in Oceania. On the other hand, the littoral zone was the one that in time polarized population and stimulated the development of a specific habitat and complex activities, related to the natural conditions and the access to multiple sources, continental and maritime, to their processing and transport on long distances, with the cheapest transportation, the transport on water.

As a result, the littoral concentrates today, on a very narrow, linear habitat-strip, that became nowadays a very fragile environment, almost two thirds from the globe population, which has put an irreversible imprint upon it. On the other hand, as a result of the turning into

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account, in a special manner, of all the natural and anthropic conditions specific for the littoral of the temperate and tropical zones, it became also the most important touristic zone. It attracts in a differentiated way hundreds of millions of tourists yearly, determining, besides the primary touristic offer, formed of natural and anthropic touristic resources, a complex touristic arrangement, of great dimensions, with an impact on a global scale.

2. THE NATURAL CONDITIONS

The natural conditions, by their characteristics, constituted themselves as factors with differentiated implication in littoral zones' anthropization, even from the antiquity of the Mediterranean, Extreme Eastern and South-Asian civilizations.

2. 1. The littoral relief, both the sub airy one, as the submersible one, from the nearby vicinity of the coast led, by its traits, to the development of specific settlements. Most of them initially had harbour and commercial functions, as well as activities related to the immediate contact sea-dry land, naval construction, agriculture, fishing, and later related to the processing of products from the import from a great distance on water way, especially those power-fossils or those metalifferous and nonmetalifferous. The arrangement in time of these activities has frequently required a high shore, fragmented with gulfs for sheltered ports with deep waters for the access of the vessels with increasing displacement and draught. Also, ever increasing surfaces were needed for the port and urban arrangements which occupied greater and greater areas.

Thus, the sea coasts became the destination of one of the most accentuated anthropic pressure, due especially to the tourism in the last half of the century. This was manifested at the same time with the starting of the industrial revolution that depended directly on the progress of the communication ways and of the mechanic, air, on water and on land means of transport. It had as a polarizing destination the seashore arranged with touristic ports, the international and local airports, the railway stations and the systems of roads culminating with the highways. All of these were conditioned by the morphological local traits reflected in the types of shores. The way of touristic arrangement is directly dependent on the relief of the littoral zones, which is different for the low or high seashores or the littoral sectors, modeled and affected by the water movements, waves, streams and not in the last turn, by the tides.

In the case of high sea shores, they present cliffs from tens of meters to hundreds of meters. As concerns the mountainous littorals, they have the conformation and the extension of those three essential components:

The front of the sea on a distance of outside one km from the sea shore, with a rocky and generally deep bottom, less favorable to those who practice marine baths frequently, having fragments of dry lands in the shape of some islands with different dimensions;

The narrow strip of seashore with beaches, discontinuous as a rule and slightly extended in width, edged by cliffs or mountainous steeps;

The dry land from the proximity of the shore.

Typical examples in this respect are the French seashore from the east of Marsilia, the Spanish Mediterranean seashore, with Costa Brava, Costa Dorada and even a great part of Costa del Sol etc. In the frame of this type of shores, the coasts of ria type, with branched gulfs, are to be differentiated after the landscape, being positioned on the inferior courses of some rivers, partially awash, as Spanish of north-west, Galicia, Bretagne Peninsula and Provence in France or on sectors from the littoral of the Red Sea (Posea, Gr. 1970, and

others); coast of a Dalmatian type specific to the Croatian littoral, with alignments of islands and channels parallel to the coast, corresponding to some anticlines and synclines similar to some sectors from California gulf or New Zealand; coasts with fiords found especially in the temperate-cold zone, with a great landscape impact specific to Norway, Scotland, or to the extremity of the South-American continent. In the insular Mediterranean, but also in Hawaii archipelago high coasts are also present, often due to the volcanic activity, with the individualization of some insular complexes of a caldera type, as it is the one of Santorin island, with remarkable morpho-landscape contrasts. Specific to the high coasts in general is the very accentuated sinuosity and energy, which imposes the fragmentation of the touristic arrangements, the more or less individualization of their character of insularity and of their development in altitude, from the sea level to hundreds of meters, with efforts of integration in the landscape till the micro-scale.

2. 2. The low coasts are less articulated, with a right outline, delimiting extended alluvial plains, submerse, with continental platforms with reduced slope, maintaining the depth of only several meters to more kilometers of coast. The cliffs are unrepresentative and the terrestrial relief is prolonged submerse, where there can be reconstituted sectors of old courses or of deltas branches. The small slopes favor, especially in the case of the seas without tides, the forming of large beaches, spread on hundreds of meters, fields of dunes, in their back, or banks and belts of littoral sand, comprising lacustrian aquatic surfaces of lagoon type or maritime bank.

The beach is one of the most important components-touristic resources of the natural littoral space's organization, with accumulation of sand, gravel, shells, with differentiated slope, but generally reduced, dependent on granulometry, beaches' profile, depth of the sea besides the seashore, partially flooded at high tide or at an agitated sea. The submerse beach is a prolongation of the first one, until a depth of a few meters, offering an easy and without any risk access of injury for all the categories of tourists. The granulometry, the colour and the differentiated absorption of the categories of solar radiations depend on the geologic origin, predominantly calcareous-organogenous, often with a coralligenous, siliceous or volcanic origin. The seashores with lido are to be noticed, with littoral belts specific to the north-west of the Adriatic Sea (Rimini, Ravenna, Lignano and Venice) or of that around the Mexic Gulf (for instance the zone of Can-Cun resort), but also of the central part of the Black Sea littoral, at Mamaia. The low, deltaic coasts have frequently among the branches vast sandy surfaces, with a mixed origin, maritime and river one, of the deposited material. In the north-eastern Australian tropical zone, but also in the islands of a coralligenous origin from the Pacific, the Caraibe, reef-islands are developed, forming The Great Barrier of Corals, respectively of circular atolls. These close lagoons of variable dimensions and depths of several tens of meters. This type of coast has a double impact upon the tourism, namely the beaches with a coralligenous sand highly appreciated and, not in the last turn, the richest and most diverse submerse coralligenous biotopes from the sub aquatic environment, contributing decisively to the development of the subaquatic tourism.

The littoral of the Black Sea spread on a distance of only 245 kilometers is characterized by genetic and physiognomic diversity, from low deltaic littoral to low lagoonal littoral with littoral belts to high littoral with cliffs, of 10-20 m, alternating with low sectors, with beaches, corresponding to the sandy accumulations from the maritime mouth of the banks.

2. 3. The climatic conditions, by the component elements, contribute directly to the development of the touristic phenomenon, influencing its intensity, but also the duration of its unfolding. The thermal factor is essential, its optimum values having to override 25^0 C. At this, the abundant solar radiation is added, with the U.V. component, but also the bright radiation component, air ionization, in which the negative ions are imposed with salted and iodide aerosols, as well as the local circulation of the air, in the shape of marine breezes which moderates the stressful effect of the high temperatures. All of these have a direct impact upon the physical characteristics of the seas and oceans waters in the littoral zones, leading to the cohabiting of the pleasure tourism with that of maritime-climatic cure and to the individualization of the most polarizing world touristic offer.

The latitudinal zoning of the climatic conditions leads to the differentiating of the regime of tourism unfolding in the littoral zones: from the uninterrupted or fluctuating continuity during the whole yearly course, in the tropical zone, to the intense one, subtropical Mediterranean, in the warm season, at least six months and, with compensatory character, temporally at the level of the two hemispheres, in the transition seasons or even in the winter. (A fact that must be spotlighted is that the tourism of the Mediterranean French littoral – Coastal of Azure – was initially introduced, by the British people, as tourism of winter); to a pure aestival tourism in the temperate zone specific to the Black Sea or to the north-eastern American littoral of Atlantic; the tourism from the months of July and August of the Baltic Sea, North Sea and Norwegian Sea littorals.

2.4. The water of seas and oceans nearby the seashores is directly involved in the setting up of the whole natural conditions conferring favourability, attractivity and contributing to the achievement of the most ample and complex touristic arrangements, at a global scale.

The physical characteristics of the seas and oceans' waters, at the coast, impose themselves, first of all by their temperature, related directly to the climatic thermal values, which needs to oscillate between $24 – 28^0$ C, in order to produce the state of thermal aquatic comfort. The climatic and bioclimatic conditions and the thermal values of the seas and oceans waters determine the extent of the season for tourism practicing in the littoral zones, from a perpetual activity in the inter-tropical space, to several weeks at the contact of the temperate and cold zones. The transparency of water is proportional with the lack of pollution, with the quantity of the suspended matter or of the plank tonic organisms and algae. The degree of calorific radiation's penetration and the profound warming depends on it, too, reaching several meters, but also the solar illumination, favouring the practicing of sub-aquatic tourism, closely related to the capacity of absorption or of reflecting of the sandy or rocky bottom and of the colour of the rocks.

Very important is the *depth of the waters* in the coasts' neighbourhood, which permits the access, in the sea, of those who make bathe and are usual swimmers till several tens of meters or hundreds of meters of coast. Also, the same characteristic permits the emplacement and the arrangement of touristic ports, for pleasure vessels and ships with a greater tonnage, of cruise. The cost of their arrangement is closely related to the bathymetric specific features, but also to the degree of coast's articulation and fragmentation.

The chemical characteristics of the seas and oceans water are dominated by salinity, influencing, at their turn, the colour, which is blue, an intense, azure blue, by higher values, in the case of quasi-closed seas, as the Mediterranean or the Red Sea, with an arid climate.

The sub aquatic ecosystems, by the diversity of vegetation species, but especially the fauna, are closely related to the physical qualities of the water, temperature and transparency, but also by the chemical ones, content of O2, salinity and chemical nutrients, or by the presence of plankton in the superficial strata or at a small depth. The coralligenous ecosystems impose themselves submerse in the landscape, both those of atolls as those of a barrier type, up to a depth of several tens of meters, from the warm seas and oceans, considered to be the richest in species, picturesque, multi-chromatic, where a sub-aquatic tourism can be practiced, of knowing, photographing or filming, with an increasing interest for different categories of tourists.

3. THE SOCIAL-HISTORICAL AND ECONOMIC PREMISES contributed to the arrangements of the shores, with ports, settlements-ports, that became, in time, big cities, with complex functions, where huge quantities of products, brought on the waters' way or derived from their own territory, were marketed and processed.

The circum-Mediterranean littoral was, even from the antiquity, the space of moulding the human civilization and culture spread by the communities of navigators with special aptitudes of merchants, but also by colonizers and conquerors, as the Greeks, Phoenicians, Carthaginians, and then by Romans, who transformed the Mediterranean in Mare Nostrum. The effect on the span of a half of a millennium was the development of urban littoral complexes and focal points of culture with an universal impact which perpetuated their importance till nowadays: Athens, Alexandria, Roma with the port extension, from antiquity, Ostia, Byzant-Constantinople, or the Greek towns-colonies Massala-Marsalis, Naples, Syracuse or Tomis-Constanța, at the black Sea, or Cartaginese town-colonies as Cartagena. In the first part of the Middle Age, their place is taken by the two Italian republics, Venice and Genoa, which maintained the importance of the Mediterranean space and the connection with the Asian Orient and the north-African space. The second part of the 15^{th} century marks the overthrown of the center of geopolitical and economic-commercial influence from the Mediterranean to the Western European façade of the Atlantic with the town-ports Lisbon, Cadiz and Palos, for Spain, from which the heroic poetry was launched, with unimagined consequences for the mankind's destiny in the following half of millennium, of the Great Geographical Discoveries, which imposed the European Civilization. This tendency continued with almost a half of a century later, with the implication of the Lower Countries – Holland with the two gates towards ocean, Amsterdam and Rotterdam, England, having as irradiation centers, London, Bristol and Liverpool, France with St. Malo and Le Havre.

All these, at which the cities-ports are added, developed in 18^{th}-19^{th} centuries from Europe as Nice, Barcelona, Valencia or metropolis-ports from the continents America, Eastern Asia, Australia, will constitute the structure on which the immense complex of touristic arrangements will be built with a predominantly linear developed character on thousands of kilometers.

4. THE IMPACT UPON THE LITTORAL ENVIRONMENT is of long term and was determined by the arrangements and port activities extended on spread surfaces alongside the coasts and on depths of kilometers in the offing (the example of Euro port belonging to Rotterdam) and in the depth of dry land with arrangements of basins and port spaces, of industrial activities, processing the import products with the autochthonous ones, of development of the residential zones, often sheltering millions of inhabitants. At these, the rural space of proximity is added, with settlements and surfaces used in agriculture,

depending on the pedo-climatic conditions, but also with cultures and agricultural activities specific to the neighbourhood of the seas - seas cultures. The littoral zones are connected with the interior of the territory, with a dense, complex and modern infrastructure of communications, which entropizes even more the littoral environment.

The tourism imposed itself as a factor with an intense and major modification of the littoral environment in all of these, occupying all the spatial niches, which did not remain introduced in one of the previous economic circuits, or superposing and modifying, through specific arrangements, the urban and rural habitats. Moreover, the temporary, demographic multiplication was added, with direct effects of the sojourn of million of persons by the consumption of the touristic product. It resulted by arrangement and stimulation by that known (from now on) multipliable effect of tourism. It had a major impact upon the explosive, demographical increase (inclusively due to the migrationists tourists from other countries belonging to the third age who have permanent residences in the littoral zones of the European Mediterranean countries, Spain, France, less Italy or Greece). The impact was also to be seen upon the economic activities with role of complementary support for tourism, upon the rate of population's occupation and of new professions genesis and, generally, on the social-economic level of autochthonous population.

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CHARACTERISTICS OF THE PRESENT INTERNATIONAL TOURISM TRAVELING

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ABSTRACT. – Characteristics of the Present International Tourism Traveling. The large volume of the present day international touristic traveling confers to it a character of mass with profound economical and social implications. The study enters upon a setting on stages of the evolution of the international touristic traveling, each stage having different rhythms of the evolution of the phenomenon and of its consequences, mainly the encashement out of tourism and a regional analysis of the unfolding of the international touristic phenomenon.

Keywords: *international touristic traveling, evolution of the international touristic arrivals, regional ratio of international touristic arrivals, touristic expenses of the main emitting countries, the main touristic destinations from the world*

In the unroll of the economic relationships between states, the international tourism is one of the most active promoters, the international touristic traveling belonging to the commerce with international services, mediations and promotions, banking services etc.

In the last decade, it was established that services contribute to the forming of the rough worldwide product with 60-65%, outrunning the traditional economic branches – primary and secondary economic districts.

In the case of international tourism, the carrying out of the service takes place on the customs territory of the country to which the one who carries out the service belongs. The characteristic of tourism as an activity of production and consumption, of being fixed on the territory of the exporting country, derives out of this. The main characteristic of the international touristic fluxes results out of the grouping the travel of the people as consumers and not the circulation of the services as values (Cristiana Cristureanu, 1992, read work, pages 47-64). The touristic service is established on the territory of the offering country through the touristic potential (natural and anthropic), hence, where the consumption takes place. This consumption generates currency incomes, equal to the value of the touristic carryings out.

The Worldwide Organization of Tourism, the main international organism of this field, has estimated the total of the tourist traveling realized in 2004 at over 6 billion. This evaluation, according to which 95% from the worldwide population would travel in touristic purposes, has to be regarded with reserved prudence. The evaluation is aggravated by the difficulty of mixing, in the same estimation, the movements observed in the inner and in the outer sides of the national territory and by numerous accounts: at each and every toruistic travel outside his residence, belonging to the same individual that is taken into consideration.

Out of this impressive total, 764 millions represent the touristic travels, the so-called international travels, the ones that allow the crossing of a border for a length of time that is superior to one day, that is to say 12,3% out of the worldwide population (table 1).

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The greatest mass, of almost 90% of the general total it is represented by the national, internal traveling. In 2004, 763, 9 million foreign tourists were recorded, tourists that have generated encashements of over 633 billion dollars. In the period during 1950-2004, the development of the international tourism happened in an average annual rhythm of 6, 8% for arrivals and of 12, 5% for encashements (table 2).

The evolution of the number of international touristic travels in the period between 1996-2005

Table 1

Year	Worldwide total	Europe+ North America
1996	573	444,5
1997	598	467,2
1998	616	482
1999	639,5	491
2000	686,7	522
2001	686	515,5
2002	706,4	521,6
2003	693,2	518,2
2004	763,9	548,6

Source: The processing of the official data of OMT, from Tourisme *Market Trends* 2005, OMT, Madrid.

Very few socio-economic phenomenon came to know, in the course of the past four decades, a rhythm of growth comparable to the one of tourism: the international displacements have grown for over 54 times since 1948, when only 14 million tourists were recorded. The number of 50 million was reached in 1955, the one of 100 million in 1964, 200 million in 1975, 300 million international tourists in 1984, 400 million in 1989, 500 million in 1944, 600 million in 1998 or an average growth of a hundred million in one decade in the past quarter of the 20th century. In the period between 1950 and 2004, while the worldwide population doubled, the international touristic travels grew 54 times, that is to say in a rhythm that is 22 times more rapid (table 3).

The rhythm of development of the international tourism, on decennial intervals, in the period between 1950-2004

Table 2

Interval	Arrivals (%)	Encashments (%)	Encashments / Arrivals
1950-1959	10,6	13,9	1,31
1960-1969	9,1	10,3	1,13
1970-1979	5,3	18,4	3,47
1980-1989	4,7	8,2	1,74
1990-1999	4,6	7,03	1,52
2000-2004	2,7	9,24	3,42
Average1950-2004	6,6	11,2	1,8

Source: The personal processing of the statistical data from Tourism Market Trend, 2005, OMT, Madrid.

In the same time, two attitude of reserve can be expressed in regard with this progression:

- on one side, it is partially the result of the progressive opening of numerous new countries for the touristic sector and it is not only due to a powerful growth of the activity in the countries whose census was taken of at the beginning of the 1950's.

- on the other side, the rhythm of the progression marks a period of slowdown of the phenomenon.

The economic and social crisis from 1968 and especially the ones that took place in the period between 1980-1983 and 1992-1996, followed by spectacular re-launchings, does not mark this regular tendency. The annual growth has diminished from 11% between 1950-1960 to 9% between 1960-1970, to 6% between 1970-1980, to 3% in between 1980-1985 and 1% between the years 2000-2002, so that the development of the worldwide tourism has reduced its rhythm, reaching a slower rhythm of development, better adapted to the worldwide context, with periods of difficulty and even crises.

The very powerful increase of the arrivals, but of the worldwide touristic encashments as well, from 1950 and until 2004, has recorded periods of sub unitary advancements (1982, 1986, 2001), circumstantial consequences of the economic recessions and of the terrorist attacks. The regions that were the mostly affected were Africa and America. The period in between 1950-2004 can be structured in six great stages of the evolution of the worldwide tourism, stages that correspond to the following decades (table 2).

The evolution of the number of the international tourists in the period between 1950-2004

Table 3

Year	Number of international tourists (in millions)	Worldwide population (in millions)	The poderability of tourists, out of the worldwide population (in %)
1950	25,3	2500	1
1960	69,3	3000	2,3
1970	165,8	3600	4,6
1980	277,6	4300	6,6
1990	437,8	5300	8,6
1995	539,5	5600	10
2004	763,9	6228	12,3

Out of the above presented data we can draw the following conclusions:

a) the average annual rhythm of the international arrivals records a continuous decrease, fact that prooves that the international tourism phenomenon entered in a phase of maturity, of balancing;

b) the annual average rhythm of the encashments records circumstantial increases and decreases, some economical – energetic crisis, inflation, the devaluation of the dollar; others political – local conflicts, the liberation of Eastern Europe from under the tirany of communism, the liberalization of the visa regime, etc;

c) the report enchashments / arrivals has a tent of growth, more emphasised in the 8th and the 9th decades, and in the first decade of the 3rd milenium, fact that demonstrates the worldwide economic growth through the increase of the purchasing power of the tourists.

In 2004, the incomes, still in current money, added up, to approximately 633 billion US dollars. The comparisons to other economic phenomenon are interesting: in this way, the value of the touristic exchanges are equivalent to 1/3 from the one of oil exchanges and with 40% from the worldwide exchanges from the agroalimentary field, from in between 2000-2004 (table 4, figure 1) expresses the following:

- Europe absorbs over half of the incomes of the international tourism (52%), the American continent (Northern and the Southern) 20,8%, and Asia-Pacific 20,2%. Africa records only 3% and the countries of the Near East, which are rich in oil, 4%.
- Compared to the average value of the incomes on one international touristic arrival (ITA) on a worldwide level, which in 2004 was of 830 USD, America recorded a better efficiency, the value being situated at 1050 USD, being followed by Asia-Pacific, with 880 USD and by Europe with 780 USD. Africa has recorded the smallest average income per one arrival, 565 USD.

With regard to the international touristic arrivals to great continental and regional ensembles, Europe holds 55,4% of the total of the arrivals, followed by Asia-Pacific region with 19,0% that is the more dynamic and with large increases in comparison to the year of 2003, of over 27%.

The incomes obtained from international tourism, in absolute and relative figures, in the period between 2000-2004

Table 4

Continent	YEAR					Medium value on a ITA (USD)	Ponderability (%) of the worldwide market in 2004
	2000	2001	2002	2003	2004		
Africa	11,4	11,7	11,8	15,9	18,9	565,0	3,0
America	109,4	122,2	114,3	114,1	131,9	1050,0	20,8
Asia and Pacific region	81,0	88,0	94,7	97,0	127,8	880,0	20,2
Europe	221,3	225,8	240,5	284,1	329,2	780,0	52,0
The Near East	9,8	11,8	13,0	21,9	25,3	695,0	4,0
Worldwide total	**432,9**	**459,5**	**474,2**	**533,1**	**633,0**	**830,0**	**100,0**

Source: OMT, 2004.

The American continent follows next with a ponderability of 16, 5% and with an increase of 20, 9% in comparison to the year of 2003.

Africa holds the last place, with a ponderability of 4,4% but with an increase of 8,5% compared to the year of 2003 (table 5).

Numerous other countries benefit from substantial advantages that allow them to re-balance the external trade balance and the stimulation of their national economy.

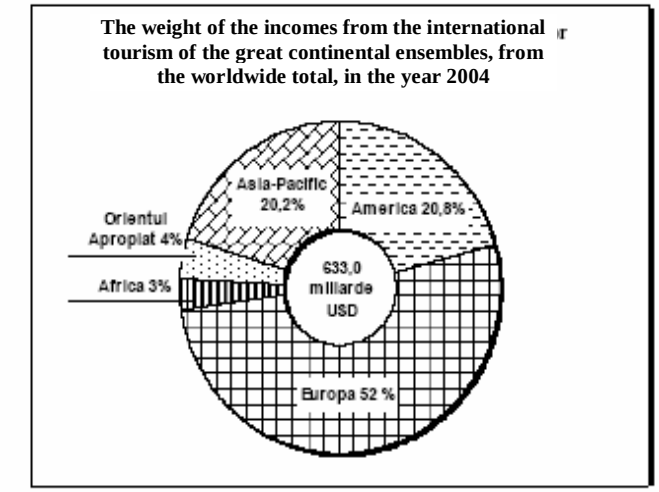


Fig. 1. The a ponderability of the incomes from the international tourism of the great continental ensembles, from the worldwide total, in the year of 2004.

The international touristic incomes represent therefore, over 10% from PNB in approximately 20 countries, and over 25% in 10 tropical islander countries. For many of them, tourism became a kind of last hope compared to the persistent difficulties from other economic branches: different strategies are developed and are put into practice in order to impound the very coveted touristic fluxes, competitive tensions are born, whose force is sometimes disregarded or ignored by the public opinion. The international tourism reflects, is an accurate manner, the major worldwide inequalities. It has been ascertained, that in this way, the third world receives approximately one quarter of the total flux of the international tourists, which is the exact equivalent of its relative importance in the economic production of the globe, while it accumulates over ¾ of the worldwide population. However, the worldwide map of tourism is structured in great regions dominated by a country or a group of countries that organize their space according to their strength and dynamism. The image of an orderly world in center-periphery, that is widely utilized in other fields, economic and geopolitical ones – it also conveys for the characterization of the international tourism distribution. All the countries of the world are finally in the position of receiving or in the position of being the receivers, or the suppliers, of sending or of being the emitters, of international tourists (table 5).

The international touristic arrivals to the great geographical areas, in the year of 2004

Table 5

No.	Region	International arrivals		
		Million tourists	% from worldwide total	2004/2003 report (%)
1	Europe	422,9	55,4	4,4
2	America	125,7	16,5	11,1
3	Africa	33,4	4,4	8,5
4	Middle East	36,3	4,7	20,9
5	Asia-Pacific	145,5	19,0	27,4
Worldwide total		763,6	100,0	10,2

Source: OMT 2004.

This double function and this trade are produced with intensity, with proportions and with results that are extremely different from one country to another. Some of these, as underdeveloped exotic countries, will appear, first of all, as receiver countries; others, like the countries with a less favorable climate, but endowed with financial means, will be registered as emitter countries. As a matter of fact, the majority combines the two activities in a various equilibrium, alternating the advantages of the "emissions" for countries like Germany, Japan or USA with the prevalence of the receiver fluxes like France, Spain or Italy.

The international touristic expenses of the main emitting countries, In the year of 2004

Table 6

Continent	Country	Total in billion $ USA
Europe	Germany	78,553
	United Kingdom	68,778
	France	28,520
	Holland	10,417
	Austria	12,811
	Switzerland	10,599
	Belgium	15,295
	Sweden	11,309
	Italy	24,062
	Denmark	7,279
	Spain	13,337
North America	USA	92,217
	Canada	19,730
Asia-Australia	Japan	48,175
	New Zeeland	2,358
	Australia	13,004

Source: xxx, 2006, *Compendium of Tourism Statistics*, OMT, Madrid.

At global level, the essential phenomenon is the extreme concentration of the two functions of "emission" and of "reception" in the developed industrial world: over ¾ of the total touristic fluxes originate and turn back to this. As a matter of fact, the first five "emitter" countries, Germany, USA, The United Kingdom, Japan and France, accomplish over 52% of the international expenses, situation that strengthens the impression felt by the tourists, the one of often meeting, all over the world, German, British, Japanese tourists (table 6).

With regard to the spatial dynamics of the international tourism, for the first years of the 3rd millennium, are recorded, according to the OMT account, the following average annual rhythms of the touristic arrivals in the great touristic regions: Asia-Pacific 6,9%, Africa 4,4%, North and South America 0,5%, Europe 1,8% and the Middle East 9,5% comparing to a worldwide mean of 2,7%. The differentiation that can be observed is due to the phenomenon of saturation of the market, but also to the desire of the tourist to travel further, to exotic places. In Asia-Pacific and Africa, tourism is at the beginning of its affirmation as a sector of production and exportation branch and it is already recording high rhythms. In Europe and America, tourism was already established as a traditional economic

sector. The touristic exportation is mainly accomplished within the continents, and the saturation of the demand imprints a low rhythm to the increase of the international touristic arrivals. In addition, on the American continent, the recoil, the rebound, recorded in the touristic travel, caused by the terrorist attack that took place on 11th of September 2001, still produces consequences.

As far as the "map of the international tourism" is concerned, it is diagrammatically structured in four great basins, which are the main regions on which the majority of the touristic fluxes, from the supplier areas, converge. Out of this major ensemble of the fluxes, a series of branches with a lower intensity of the phenomenon, detach themselves toward Dark Africa, Inner Asia, etc.

The main touristic basins are:

- the Mediterranean Basin. In chronological order, this was the first one that developed itself and it is situated on the first place, with approximately 250 million international touristic entrances, due to an exceptional density of its attractions and of the easy access from the great emitter regions, from the northern side of Europe; next to the major trio of attraction: Spain-France-Italy, the flux covered the eastern side of the basin as well – Greece – Israel, then the African shores, from Egypt till Morocco, as in all the islands, from the Balneal region until Cyprus.

- the Caribbean Basin, which from the chronological point of view, has developed in the second stage, but in the present day it holds the third place; the tourists come mainly from North America, the flux discharges annually over the Antilles Archipelago, from Bahamas to Trinidad-Tobago and to the shores of Central America, 45 million foreign tourists.

- **the third great *"lake of holiday"*** appeared later, but today witnesses a spectacular touristic expansion which promoted it to the second place; it is about the Asia-Pacific Basin. From Japan to New Zeeland, it records diverse continental and islander ensembles that stand out this Asian arch, with approximately 146 million touristic arrivals recorded, that is 68% out of the Mediterranean total and five times the African total. It is a figure that outstands, almost two times, the arrivals from all the Eastern European countries, with their 86 million foreign tourists from 2004.

- the fourth great *„lake of holiday"* formed after the fall of the „iron curtain" occured in 1990, it is represented by Eastern Europe, with an annual volume of ITA of aproximately 100 milions, where Poland, Chechoslovachia, Croatia, Bulgaria and Hungaria are favourite destinations.

The spatial dynamic of the international tourism also shows us that a small number of countries dominate in an overwhelming proportion the scene of the international tourism. In this way, out of a total of 213 countries and territories whose census was taken by OMT in 2004, the first 25 hold 71, 6% out of the total of the arrivals (table 7).

The three Mediterranean leaders, Spain, Italy, and France concentrate approximately 173, 6 million arrivals, or 22, 7% out of the worldwide flux. From the opposite sense, approximately 2/3 of the countries considered to be less demanded by the tourists share only 15% of this flux. In the worldwide record, the order of apparition of the great continental ensembles are not lacking in significance: Europe occupies 1,2 and 5 with France, Spain and Italy, North America reached the 3rd place in 1995, Central America (Mexico) on the 7th place, Asia on the 3rd place.

The main touristic destinations from the world, in the year of 2004

Table 7

Rank	Country	Population (mill. residents)	Year and mass of thetouristic international arrivals (millions ITA)			Variations/ 100 residents		Arrivals / 100 residents	Ponderability (%) out of the total of the international touristic arrivals
			2002	2003	2004	2003/2004	2004/2003		
1	France	60	77,012	75,048	75,121	-2,6	0,1	129	9,8
2	Spain	40	52,327	50,854	52,430	-2,8	3,1	129	6,9
3	USA	300	43,582	42,218	46,085	-5,4	11,8	15	6,0
4	China	1279	36,803	32,970	41,761	-10,4	26,7	3	5,4
5	Italy	58	39,799	39,604	37,071	-0,5	-6,4	69	4,8
6	Great Britain	60	24,181	24,715	27,754	2,2	12,3	40	3,6
7	Mexico	103	19,667	18,665	20,617	-5,1	10,5	19	2,7
8	Germany	82	17,969	18,399	20,137	2,4	9,4	22	2,6
9	Russian Federation	145	21,279	20,443	19,892	-3,9	-2,7	5	2,6
10	Austia	8	18,611	19,078	19,373	2,5	1,5	228	2,5
Rank	**Country**	**Population (mill. residents)**	**Year and mass of thetouristic international arrivals (millions ITA)**			**Variations/ 100 residents**		**Arrivals / 100 residents**	**Ponderability (%) out of the total of the international touristic arrivals**
			2002	2003	2004	2003/2004	2004/2003		
11	Canada	32	20,057	17,534	19,152	-12,6	9,2	63	2,5
12	Turkey	67	12,750	13,341	16,826	4,3	26,1	19	2,2
13	Malaysia	23	13,292	10,577	15,703	-20,4	48,5	59	2,1
14	Ukraine	51	10,517	12,514	15,629	19,0	24,9	30	2,1
15	Poland	39	13,980	13,720	14,290	-1,9	4,2	36	1,9
16	Hing Kong	7	10,698	9,676	13,655	-9,5	41,1	227	1,8
17	Reece	11	14,180	13,969	13,271	-1,5	-5,0	133	1,7
18	Hungary	10	15,900	13,856	12,212	-12,9	-12,9	158	1,6
19	Thailand	64	10,873	10,082	11,737	-7,3	16,4	17	1,5
20	Portugal	10	11,644	11,707	11,617	0,5	-0,8	116	1,5
21	Holland	16	9,595	9,181	9,646	-4,3	5,1	60	1,2
22	Saudi Arabia	24	7,512	7,332	8,580	-2,4	17,0	32	1,2
23	Macao	0,4	6,565	6,309	8,324	-3,9	31,9	2081	1,1
24	Croatia	4	6,944	7,409	7,912	6,7	6,8	158	1.0
25	Egypt	63	4,906	5,746	7,795	20,3	21,5	12	1,0
			706,4	**693,2**	**763,9**	**-1,9**	**10,2**	**12,2**	**100,0**

Source: xxx, 2006, *Compendium of Tourism Statistics*, OMT, Madrid

A significant "leap" was made by China who recorded over 41 million international touristic arrivals in 2004. It expects to exceed 100 million in 2008, due to a high attractiveness caused by its effervescent and emergent economy, due to the Olympic Games from 2008 and to a prosperous Chinese community, with its residence outside China that visits its country of origin. Great Britain occupies a honourable place six, with over 27,7 million international touristic arrivals, due to an exceptional anthropic potential, of an infrastructure of transportation and of very modern accommodation, and due to a cultural environment and to a prestigious and prosperous business environment.

Italy has recorded a significant rebound at the beginning of the years of 2000, of approximately 40 million international touristic arrivals, a little more above 37 million, due, in a great part, to the saturation of its touristic market.

Mexico has a meritorious position with over 20, 6 million international touristic arrivals and a high degree of attractiveness.

Austria has a position, worthy to be envied, being on the 10^{th} place in the worldwide hierarchy of the mass of the international touristc arrivals, alongside with Portugal, Hong Kong, Croatia, Macao and Hungary, having one of the highest international touristic index arrivals (ITA) / 100 residents, respectively 228, in comparison to a worldwide average of 12,2 ITA / 100 residents.

The pour countries, in general, are quasiabsent of this classification: forty countries have low incomes, fewer than 400 dollars per resident / year, and do not record, overall, more than 2% from the worldwide arrivals.

France, Spain and Italy have occupied the first places, depending on years and on conjuncture, alongside with USA in the past three decades.

A very important place, less mentioned until recently because of an unfavorable geopolitical context, is taken by Eastern and Central Europe.

Statistically, this region represents a place of destination of some strong fluxes of animation. It has an active maritime appearance through Slovenia, Romania and Bulgaria, to which Croatia can be added as well. Countries as Hungary, Poland and Czechoslovakia stood out in this particular area, after 1990, and they record high values of international arrivals, outrunning countries with tradition as Switzerland, Greece, Portugal, Holland and Belgium.

In 2004, Eastern Europe has recorded, in total, approximately 86, 3 million tourists. Hungary occupies an honorable place 18, with the other over 12, 2 million international touristic arrivals, due to the high quality of its services, of hospitality and due to some constant, tenacious and professional actions of promotion on the international market.

Poland records over 14, 2 million international touristic arrivals, due to a remarkable landscape and cultural attractiveness. Czechoslovakia, with its over 6 million ITA, occupies an honourable place as well, but the volume has diminished drastically. On the other side, the quality of the tourists and the average income / ITA has increased.

In this context, we may observe Croatia as well, a country that has inherited the Dalmatian Coast with an exceptional touristic potential, which she knows how to develop, coming to record over 7,9 million international touristic arrivals in 2004. If we make a reference of the number of the international touristic arrivals to the population, the situation appears to us under a total different aspect, as being dominated by the small countries and territories, specialized, in a form or in another, in international tourism. In this case, Andorra is situated on the first place, with its 4953 ITA / resident; it is followed closely by Macao with 1422 (2081 in 2004!) and by the Virgin Islands with over 1330. It can be observed that the islander states from the Caribbean Sea and from the Pacific Ocean predominate, where the tourism represents the main economic component of the society (table 8).

The hierarchy of the touristic destinations on states, according to the international touristic index arrivals of ITA / resident, in the year of 2002

Table 8

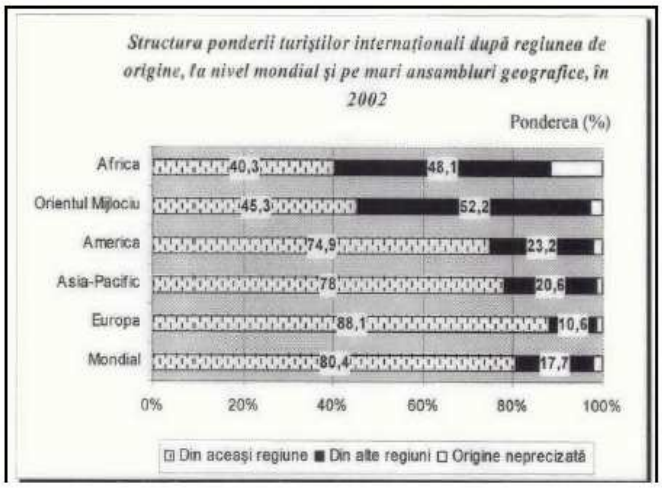
Rank	Country	Population (thousand)	International touristic arrivals / 100 residents	International touristic arrivals (millions)			The variation of the arrivals of the international tourists (± %)	
				2000	2001	2002	2001/ 2000	2002/ 2001
1	Andorra	68	4953	2,9	3,5	3,4	19,2	-3,6
2	Macao	462	1422	5,2	5,8	6,6	12,4	12,4
3	British Virgin Islands	21	1338	0,3	0,3	0,3	5,2	-3,7
4	Aruba	70	913	0,7	0,7	0,6	-4,1	-7,0
5	Monaco	32	822	0,3	0,3	0,3	-10,1	-2,6
6	Caiman Island	41	743	0,4	0,3	0,3	-5,6	-9,3
7	Guam	161	659	1,3	1,2	1,1	-9,9	-8,7
8	Marianne Island	77	603	0,5	0,4	0,5	-15,3	6,4
9	Bahamas	295	525	4,4	4,1	4,4	-0,4	0,9
10	Bahrain	656	482	2,4	2,8	3,2	15,2	13,6
11	American Virgin Islands	124	448	0,6	0,6	0,6	-2,5	-6,6
12	Bermuda	64	444	0,3	0,3	0,3	-16,3	2,1
13	Antigua and Barbuda	67	356	0,6	0,6	0,5	-0,1	-10,5
14	Anguila	12	353	0,0	0,0	0,0	9,5	-8,3
15	Cook Island	21	351	0,1	0,1	0,1	2,2	-2,1
16	Cyprus	767	315	2,7	2,7	2,4	0,4	-10,3
17	Palaos	19	304	0,1	0,1	0,1	-6,9	9,3
18	Brunei	351	293	0,9	0,8	0,8	-10,0	-0,9
19	Malta	398	285	1,2	1,2	1,1	-2,9	-3,9
20	Austria	8 170	228	18,0	18,2	18,6	1,1	2,4
21	Hong-Kong	7 303	227	13,1	13,7	16,6	5,1	20,7
22	United Arabian Emirates	2 446	223	3,9	4,1	5,4	5,8	31,7
23	Luxemburg	449	195	0,9	0,8	0,9	-2,6	5,6
24	Barbados	276	180	0,5	0,5	0,5	-6,9	-1,8

Source: xxx, 2003, *Aperçu sur le tourisme mondial*, Madrid, page 70, OMT.

Other small European entities stand out – Malta, Luxembourg, Monaco, Cyprus and the Arabian ones as well – Bahrain, that value their exceptional natural, anthropic, of position and of financial opportunities.

Few others like Austria, Hong Kong and the United Arabian Emirates, are an exception because they are countries with more numerous population, but with a greater afflux of international touristic arrivals, hence with arrival indexes / 100 residents of 228, 227 and respectively, 223.

Studies of OMT (*Aperçu sur le tourisme mondial*, Madrid, pages 95-100) show that, at the level of the year of 2002, out of the 706,4 million international touristic arrivals, 80,4%, that is to say 565 million originate from the same geographical region (interregional tourism), 17,7% or 124 million come from other geographical regions (interregional tourism), and 1,9% that is to say 17,4 million did not state precisely the origin (figure 2)



□ From the same region ■ From other regions
□ Unspecified origin

Fig. 2. The ponderability of the international touristic arrivals in the year of 2002, on regions of origin (page 97);

Source: xxx, 2003, *Aperçu sur le tourisme mondial*, OMT, Madrid, page 97.

If in Europe, in Asia-Pacific and in America, the ponderability is approximate to the worldwide values, the situation is the opposite in Africa and in the Middle East, where, given the weak development of the international inter-regional tourism, the majority of the arrivals originate from other regions, respectively 52,5% in the Middle East and 48,1% in Africa. According to the OMT data (*Aperçu sur le tourisme mondial*, Madrid, pages 98-99.), the most important interregional touristic fluxes are the trans-atlantic ones, that is to say from America to Europe (23 million arrivals, out of which 10 million in Western Europe), and in the opposite sense, the volume is of 18 million arrivals, out of which 12 million in North America.

From Europe to Asia-Pacific, the mass of the international touristic flux comes up to the standards of 16 million arrivals, and from Africa, it is of 11 million arrivals. America provides other 9 million international touristic arrivals to the region of Asia-Pacific.

From Asia-Pacific, 8 million arrivals are directed toward America, 7 million toward Europe and 5 million toward the Middle East.

Africa provides 2, 6 million international touristic arrivals towards Europe, and the Middle East with only 1, 5 million arrivals. 1 million is from America towards Africa, 0,9 million arrivals towards the Middle East, 0,9 million arrivals from the Middle East towards Africa and 0,8 million arrivals from Asia-Pacific, and from Africa towards Asia-Pacific 0,7 million international touristic arrivals in the year of 2002.

The fluxes of international touristic arrivals from Africa towards America are much more reduced; they are of only 0, 3 million arrivals and of 0, 2 million arrivals from the Middle East and from Africa.

With regard to the tourism of emission, the OMT data (xxx, *Aperçu sur le tourisme mondial*, 2003, Madrid, pages 101-102) show that Europe provides over half (57,6%) of the international touristic arrivals, the most important issuing countries being Germany, Great Britain, France, Italy, Holland, Belgium, Russia, Austria, Switzerland and the northern countries.

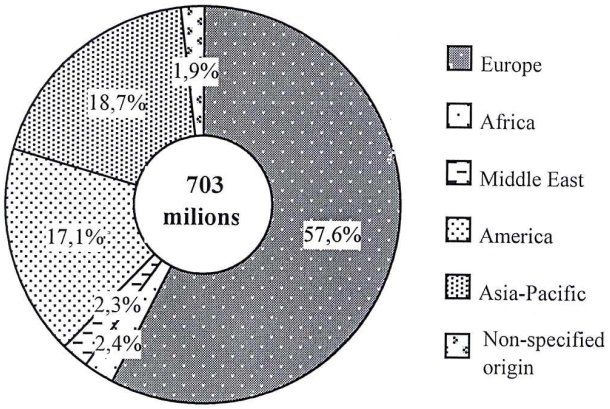


Fig. 3. The ponderability of the great geographical regions as suppliers of international touristic arrivals in the year of 2002; Source: xxx, 2003, Aperçu sur le tourisme mondial, OMT, Madrid, p. 97.

The following is Asia-Pacific that provides 18, 7% of the total of the international touristic arrivals; the most issuing countries here are Japan, South Chorea, China and Australia. America is situated on the next place by having 17, 1% of the total of the emissions of international touristic arrivals, USA clearly dominating (70%), followed closely by Canada (12%) (fig. 3).

The most important fact from the last two decades is, without doubt, the progressive enlargement of the international touristic phenomenon, both as number of tourists and as spatial expansion.

In proportion as the new destinations appear on the worldwide offer, the tourists have the tendency to cross a larger number of borders and to travel longer distances.

In this way, little by little, the dominant image of a touristic travel conditioned by the tyranny of proximity is modified.

The great axels are formed in the areas situated in the immediate vicinity of the areas of emission, and very few countries and regions escape them, in the measure in which the traveled distance gets longer. It has already been shown that the international tourism organizes itself, "grosso modo", in "peripheries", "aureolas", or in "concentric waves", starting from more centers, that belong to the great areas of emission.

The distance, that is not always physical or spatial, because it can be expressed in financial, cultural and linguistic terms, function as a kind of filter.

The more massive movements start from the national territory towards the neighboring countries, in the nearest countries and regions; in this way, in the European area, as in the American one, in between 85-90% of the recorded arrivals come from the emitter countries, which belong to the same geographic ensemble (see figure 2).

Only 5% from the citizens of the state of Benelux, 7-8% from Germany and Switzerland, 11% from France and 16% from the United Kingdom surpass the European region while their touristic displacements. Table 9 gives emphasis to the fact that in the last fifty years, the development that characterized the touristic industry was remarkable, from both the social and the economic point of view. In parallel to its development, tourism has diversified and has distinguished more and more through its structure, seasonality, spatiality, motivational and temporary. For a long time, international tourism was associated with a concentration in a spatial plan – seaside regions, urban areas, lakes and watercourses, temporarily – in the summer, motivationally – rest, spa treatments, and on states. Therefore, in 1950, 71% from the international touristic arrivals were concentrated in the first five countries (see Table), and the first 15 states held 97% from the arrivals!

The evolution of the main touristic destinations from the world, in between 1950-2004

Table 9

Rank	Ponderability of the worldwide market (%)							
	1950		1970		1990		2004	
1	USA	71%	Italy	43%	France	38%	France	33%
2	Canada		Canada		USA		Spain	
3	Italy		France		Spain		USA	
4	France		Spain		Italy		China	
5	Switzerland		USA		Hungary		Italy	
6	Ireland	17%	Austria	22%	Austria	19%	Great Britain	14%
7	Austria		Germany		Great Britain		Mexico	
8	Spain		Switzerland		Mexico		Germany	
9	Germany		Yugoslavia		Germany		Russia	
10	Great Britain		Great Britain		Canada		Austria	
11	Norway	9%	Hungary	10%	Switzerland	10%	Canada	11%
12	Argentina		Czechoslovakia		Greece		Turkey	
13	Mexico		Belgium		Portugal		Malaysia	
14	Holland		Bulgaria		Malaysia		Ukraine	
15	Denmark		Romania		Croatia		Poland	
	Other countries 3%		Other countries 25%		Other countries 33%		Other countries 42%	
Total foreign tourists	25 million		166 million		456 million		764 million	
Total incomes	2,1 billion USD		17,9 billion USD		273,4 billion USD		633 billion USD	

Source: xxx, 2005, *Compendium of Tourism Statistic*. Date 2000-2004, OMT, Madrid

At present, from the spatial point of view, the international tourism has spread on the entire planet – the vectors of the worldwide spatiality of tourism being the modern transportation. Therefore, only 35% of the arrivals from 2004 were driven by the first 5 touristic states, and the first 15 only 58% and the rest of 42% being dispersed at the level of the entire planet. Here is the proof of the spatial spreading of the international touristic phenomenon (figure 4).

The international touristic offer is enriched with new states of destination, more remote ones, the motivations of traveling multiplied and became more sophisticated, with a higher degree of personalization, whence a enormous diversification of the touristic offer.

After the year of 2000, the tendency maintained itself, on one side, by concentration through fusions, acquisitions of the market actors – traveling agencies, touristic operators, hotel chains, forwarding agents, and so on, and on the other side, by the increase of the number of small and medium companies belonging to this field, that predominate in the sector of restoration and of the services.

With regard to the great companies cited above, the concentration, the fusions and the acquisitions are a variable. For example, three great alliances of the air transporters were built: Oneworld, Star Alliance and Skyteam. In the field of the touristic operators,

there is an evident tendency toward concentration, especially in Europe, where great organizations as TUI, C&N Touristic, Airtours and Rewe hold, with their over 50 million devoted tourists, an important segment of the collective tourism. In the hotel business, the tendency toward concentration is very high as well, so that the first five hotel chains – Cedant Corporation, Six Continents Hotels that became Intercontinental Hotels Group, Mariott International, Accor and Choice Hotels Internationals administrate approximately 21.000 hotels with a capacity of 2, 3 million rooms. The desire to travel to foreign countries is directly and strongly dependent on the level and evolution of the individual incomes: in this way, in the European region, the level of the departures to foreign countries is the highest in the Scandinavian countries, in Germany, Switzerland and Holland. The disposal of the sunny seaside shores is an important parameter, but not a sufficient one; if this explains the relatively low level of the departures in France, Spain or Italy, it is difficult to accept it in the case of the United Kingdom.

The evolution of the international touristic arrivals (ITA), in between 1950-2005, on great geographical ensembles

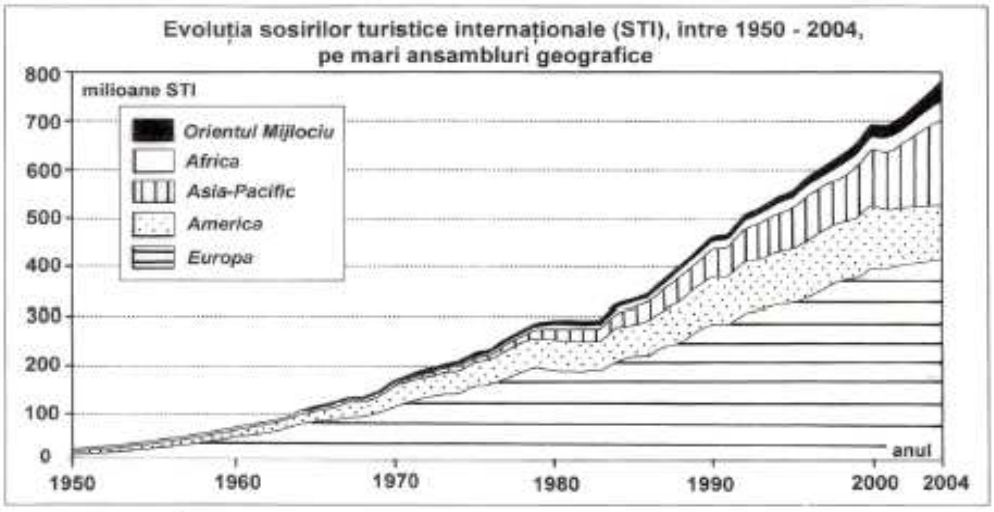


Fig. 4. The ITA evolution, in between 1950-2004, on great geographical ensembles.

Source: xxx, 2003, *Aperçu sur le tourisme mondial*, OMT, Madrid, page 133.

On the other side, the tendency of increase of the journeys to foreign countries, that follow a more rapid rhythm than the one of the tourism from national territory, it is observed in all the industrial countries and especially in Scandinavia, Spain and Italy. In France, after a long period of limitation, the journeys to foreign countries record a powerful growth after 1983-1984, with important consequences over the touristic balance of payments.

The tourists that leave their national territory desire, especially, to travel as far as it is possible. It can be observed that the level of the extra-European destinations is still pertaining to a minority.

The general touristic opening of the world, which is on the point of being brought forth, takes a spectacular turn, because it contains both the phenomenon of "emission" and that of "reception". New countries appear on a market, that progressively internationalizes itself, with a level of the incomes and of the consumption in rising, therefore furnishers of tourists (that is to say, new furnishers of tourists appear) and, simultaneously, new destinations, less known until now, that open themselves to this touristic flux.

The expansion of paid vacations, the economic progress, the raise of the incomes on a long term as the implementation of some modern transportation systems are on the point of allowing to the countries, discretely until now, to impose itself on the market of the "emitters" alongside of the traditional furnishers from North America and from North-Western Europe. For some countries, the ones form Eastern Europe, the most developed countries from Latin America and from Near East, the international asserting is still modest, while this one, is spectacular for the new suppliers from the Asia-Pacific region: Japan, Hong Kong, Australia, New Zeeland, South Korea, Thailand, India, China and so on. In the bosom of OCDE, Japan records de greatest deficit (relative) of the touristic balance, with a "level of covering" of the expenses by incomes of only 29,8% in the year of 2004, in comparison to 45,3% in Germany, 38,7% in Norway, 60,8% in Holland, 64% in Sweden, 121% in USA, 54,1% in the United Kingdom, 142,7% in France and 383,3% in Spain (from 797% in 1986!).

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THE DEVELOPMENT OF RURAL TOURISM THROUGH THE SAPARD PROGRAMME. A THEORETICAL VIEW

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ABSTRACT. – The Development of Rural Tourism through the SAPARD Programme. A Theoretical View. The process of studying the applicability of the policy of rural tourism development through the European funds allocated for rural development programmes functions on the basis of an entirely different mechanism than the one that guides the approach of financing from the standpoint of rural tourism development as known so far. Up to now, this has been the trend used in qualifying the main policy of development of rural communities that stand at the extreme opposite margins of economic progress. In the newly above mentioned approach, the rural communities, subjects of the analysis, are selected either in accordance with their low level of development, thus being included in the category of less favoured areas, or in accordance with their higher level of economic development, that allows the focusing on the role tourism practices have in their local socio-economic evolution, more or less becoming their main economic activity. Therefore, by the end of such a financing programme, tourism development should become a priority policy, not only a priority axis, element of a national rural development policy, considering the population's attitude towards the evolution of this economic sector in certain areas of the national territory. This becomes an issue of maximum importance, having in view that the decision-making factor is represented by the rural community itself, the individuals or family associations, which indirectly depends on the financing opportunities it has been offered. Consequently, the community was more or less guided towards specific directions, either by the extent of information promoted and given by the official authorities at a national, regional and county level and absorbed by the communities at a local level about the priorities set by the national and regional plans and strategies of development, or by the financial facilities offered through the European Programmes for Rural Development in the pre-accession period. Presently, rural tourism may not be considered a phenomenon similar to the classical form of tourism anymore, as appreciated by most of the specialists in the field. Nevertheless, it can be considered a sum of all other existing and practicable types and forms of tourism. The only delimitation we can perceive is that established between rural and urban, in which case, any other type and form of tourism is being transferred to the field of alternative economic activities within the rural space. Assessing the impact of the SAPARD financing Programme, at a national level, supposes a cumulative analysis resulting in quite positive effects. The verified differences of scale stress upon punctual growths, which cannot set forth the process of economic development, at a locality and at a communal level, but rather cause the appearance of income stimuli that grow weaker within a general underdeveloped economic background, counterbalance the classical perspective, since the gradual growth of the analysed territorial level determines concentrations of financial input, which provide economic growth, new jobs, and other premises of economic development.

Keywords*: rural development policy, the SAPARD Programme, rural tourism, agritourism.*

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1. RURAL TOURISM – PART OF AN INTEGRATED RURAL DEVELOPMENT POLICY

As an immediate consequence of the elaboration of tourism promoting policies at a European level, the Romanian national policy of rural development and that of rural tourism development set and define the opportunities given by the natural and anthropic potential and by the specific investment directions. The top priorities focused by these policies, symmetrically reflect the same necessities, independently of the scale level they refer to, which emphasize the compulsoriness of identifying new job opportunities of employment for untrained young active workforce, especially female workforce living in the rural space (*A Renewed EU Tourism Policy: Towards a stronger partnership for European Tourism*, Communication from the Commission, Commission of the European Communities, Brussels), by diversifying economic activities, and also by reactivating the less favoured areas from the economic and demographic standpoint. The obvious interest and involvement of the EU institutions, in which regards the tourism issue, reveal the importance it gained, currently being necessary to acknowledge it as having a major impact upon the European economy. (*Tourism and Industry in the European Union*). Beginning with the 1980s, all the institutions, together with the European Parliament, the Socio-Economic Community and the Regional Committee, have decided to annually allocate an important share of the budget for investments in tourism development.

The concept or the process of rural tourism development, or even of rural development through tourism practices and services, requires a complex model of implementation and functioning within the territory. The current policies for rural development have not yet created such a particular policy specific to rural tourism. The development of rural tourism and agritourism is obviously included in the axis of rural development as a strong priority in terms of a new approach of the Romanian rural space evolving towards an alternative economic development. Yet, it becomes compulsory when approaching this subject in a most coherent manner and directly addressed to the socio-economic specificity of the national rural area. If, up until the present, the main national priority during the implementation of the SAPARD Programme has been the financial absorption within specific time coordinates, the main purpose being to make a start to the rural development process, the next stage of the application in course, which will happen over a new specified period of time, and implementing a different type of European funding for the rural space, will focus mainly and especially on the issue of in course development, which will surely require a certain amount of financial allocations. Important to be highlighted here is the dependency relationship created when Romania, trying to to play its part in and, at the same time, actively participate to the entire process of integration, firstly focused on how to spend the money as fast as possible in order to respect the imposed deadlines and avoid to be penalised by the withdrawal of funds. This resulted in a superficial and unorganized planning of a proper strategy in the benefit of an integrated and coherent rural development, and consequently we might say, the same European budget, initially considered necessary for implementation, was improperly spent.

Assessing the economic impact of rural tourism in the Romanian rural space represents a very difficult objective to be illustrated and, at the same time, a very difficult subject to be explained and defined, on medium and long term. As for the policy for promoting and supporting rural tourism and agritourism, as an alternative economic activity for the socio-economic development of the rural communities, and of rural space, still lacks

in a diagnostic analysis, particularized and rightfully integrated in the regional and national policies and strategies of development. So as to initiate, develop and stabilize tourism activities and channel major investments towards the construction of new buildings with tourism function in certain areas within the national territory, it is necessary to take into consideration a number of factors that would positively or negatively affect the material results of such a planning, such as: the local community involved in the development process; the financial resources the inhabitants of a rural administrative unit dispose of; the physico-geographical conditions; the natural and anthropic tourism potential of the region purposed for investments; the level of tourism development in the area.

2. ADVANTAGES AND IMPACT OF LOCATING TOURISM IN RURAL AREAS – FACTORS AND NEW PERSPECTIVES FOR THE RURAL LIFE

The issues taken in discussion within the present article should also deal with the relativity of accommodation and integration of the newly built units with tourism function within the areas and in the economic context of the considered settlements. This relativity is basically the big "if" of the possibility for such units to accede to the network of national or regional rural boarding houses and, by this, if they really contribute to the on going process of rural development.

These being considered, we cannot pretend to prescribe here an exhaustive analysis of the impact of the SAPARD Programme and of the axis of development in which rural tourism and agritourism are concerned. The results, or, better said, the interpretation of a quantitative research results, may show real facts, however, their overall relevance is somehow questioned by the relativity aspects highlighted by the qualitative interpretation of territorial distribution, this mainly being due to some previously established analysis directions, such as:

a) the presence of some new tourism households, which presupposes an evaluation, in matters of number and location, at a regional and county level;

b) the modernization of already existent accommodation places, which presupposes an evaluation, in matters of number and location, at a regional and county level. Out of the total investments registered in the Romanian rural territory, we notice the low ratio of projects for modernization, which can only mean that the existing units already function at high standards, being ready to successfully comply with all the compulsory classifications of tourism services quality. However, we can also interpret this as a mutation in the local economy, by the assumption of new practices and new tourism services, facts that could have determined a new functionality for those settlements;

c) the effects of imitation or multiplication in some areas of interest, phenomena explained by the high number of projects of investment;

d) the scattered distribution, at random, of new touristic households in the territory of the country, and their presence in areas that do not present a high touristic functionality, can be evaluated as the product of a missed administrative and institutional organization, or as the effects produced by the confusion state of the inhabitants of certain communities. This represents the conflict between the principle of individual economic development versus the principle of coagulated group development. The substantial contribution of the investments within the local economy cannot be accomplished by the involvement of only one actor, or of an insignificant number of actors within a community. The infusion of capital within a rural community does not necessarily bring forth its economic development, this being possible only through a coherent progressive and uninterrupted evolution of the practiced economic activities;

e) the improper administrative and institutional organization of local councils and county and regional agencies for the benefit of the community, the insufficient information of the population, of which tourism investors could efficiently use in a more organized formula. Again there arises the need for the application of a program that would serve an integrated tourism infrastructure development.

The ratio between new investments and modernization projects in Romania, at a county level

Table 1

County	Rural boarding houses		Agritourism boarding houses		County	Rural boarding houses		Agritourism boarding houses	
	M	NI	M	NI		M	NI	M	NI
Alba	2	20		5	Harghita	1	46	0	1
Arad	0	4	1	1	Hunedoara	0	7	0	1
Argeş	2	18	0	3	Iaşi	0	6	0	1
Bacău	1	9		1	Ilfov	0	1	0	1
Bihor	1	34	1	1	Maramureş	2	8	0	2
Bistriţa Năsăud	0	4	0	1	Mehedinţi	1	3	0	3
Botoşani	0	2	0	0	Mureş	0	20	0	1
Braşov	2	120	0	11	Neamţ	7	23	0	4
Brăila	0	0	0	0	Olt	0	1	0	0
Buzău	1	4	0	4	Prahova	0	12	0	0
Caraş-Severin	1	14	0	5	Satu Mare	0	1	0	1
Călăraşi	0	1	0	0	Sălaj	0	3	0	13
Cluj	0	15	0	2	Sibiu	0	21	0	4
Constanţa	0	5	0	1	Suceava	6	46	0	6
Covasna	1	7	0	2	Teleorman	1	2	0	0
Dâmboviţa	1	6	0	1	Timiş	0	15	0	1
Dolj	2	5	0	1	Tulcea	2	5	0	7
Galaţi	0	0	0	0	Vâlcea	3	12	2	4
Giurgiu	0	1	0	0	Vaslui	1	2	0	1
Gorj	0	26	0	3	Vrancea	1	5	0	0

Judging by the number of projects of investment for the development of rural tourism and tourism infrastructure, mainly accommodation establishments, it is necessary to assess:

a) the level of favourability for practicing tourism activities in the area, all in accordance with the available natural and anthropic resources that could be exploited, and also taking into account the traditional tourism areas, internationally recognized and registered as potential tourism services providers, both for autochthonous and for foreign visitors;

b) the level of tourism development in the area, in terms of tourism infrastructure, accommodation base, available number of beds, communication network;

c) the tendency of the inhabitants to practice rural tourism, aspect derived from the number of the SAPARD co-funded projects of investment registered in that rural area.

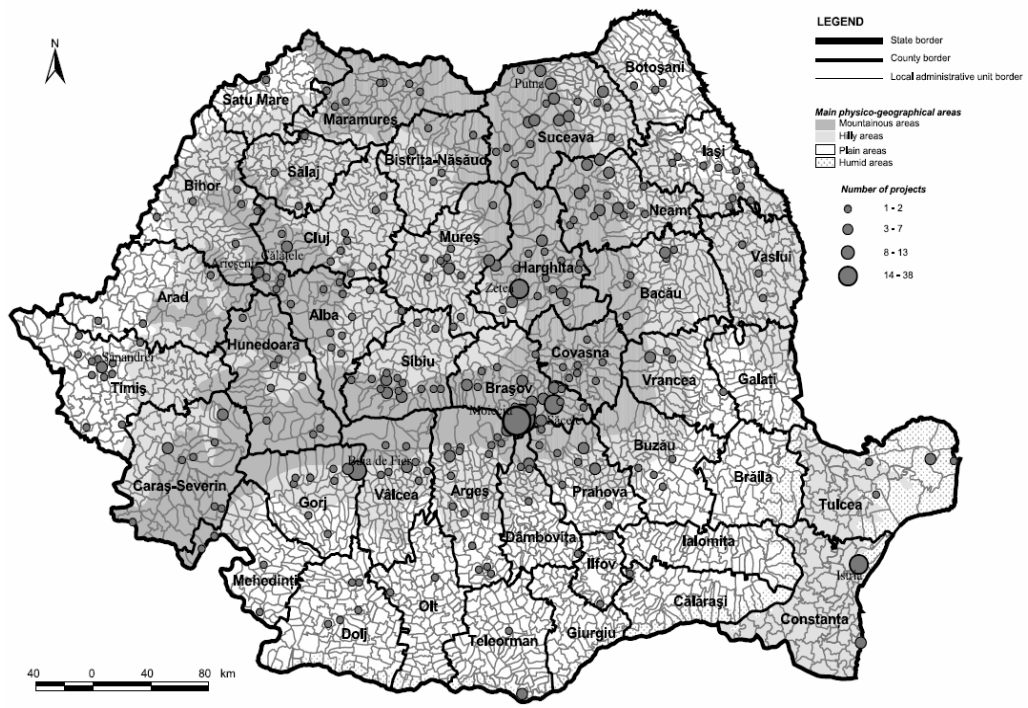

Fig. 1. Territorial distribution of new establishments for practicing rural tourism.

3. RURAL TOURISM = RURAL INDUSTRY

Once rural tourism becomes the issue of national and European policies of development, it turns to gain an increased importance as the newest non-polluting rural industry; hence, the approach is quite different insisting not on the seasonality it involved until recent years, but on the necessity to transform this economic activity into a specific rural industry with a character of permanence. Seen as a new financial provider opportunity rural tourism and its diverse offer of services at relatively low costs both for the investors and for the tourists as beneficiaries, brings up front the need to analyse it as a phenomenon that develops in a dependency relation with the human element, and its main features regarding activeness, quality (level of education), availability, professional orientation, and last, but not least, the quality of natural resources to be exploited.

From a qualitative point of view, we can highlight two directions of promotion: that of rural tourism and that of agritourism, both of them being relatively new in the literature of specialty, or at least in our autochthonous economic practices. From this perspective, rural tourism can signify rather a detachment from the classical function of the rural settlement, which used to be that of agricultural exploitation of land, while agritourism can be perceived as a framework of tourism in the agricultural tradition, a combination between two economic branches, agriculture and services.

Rural tourism emerges as a practical alternative to the primary economic function of the Romanian rural space, which is agriculture, pointing to efficiently exploiting, professionally speaking, the active human component from the countryside. At first, it is seen as an already available constant and viable resource in developing alternative income bringing tourism activities, so that, eventually, to create a veritable medium and long term productive and competitive network of services.

Agritourism introduces a new concept in terms of production and services within the national rural space. The rather low number of the potential functional units represents a premise for the future countryside household capable to support the small business of a family or of a family association involved in activities of tourism services. Currently, we consider that, although existent, agritourism boarding houses are not sufficiently equipped or do not produce sufficiently, so that we could presume the existence of a functional agritourism activity, in which the actual individual household of the physical bodies or family association could manage to sustain quantitatively and qualitatively approximately 50% of the consumption required by a permanently functioning tourism establishment.

4. FINANCIAL TERRITORIAL ABSORPTION AND ITS IMPACT UPON THE DEVELOPMENT OF RURAL TOURISM

So as to identify the peaks of financial absorption and, undoubtedly, those that determined the rural tourism phenomenon, we should spot the types of predominant factors that can (or could) trigger a chain emergence of the initiatives for constructing rural boarding houses or practicing tourism activities. We usually find investments concentrated in the traditional tourism areas, with a high degree of development of technical and accommodation infrastructure. The territorial analysis will focus on the administrative units, which are correlated to the already established tourism areas included in county and regional administrative units.

The National Plan for Territorial Arrangement, Tourism Section, elaborated by the Ministry of Development, Public Works and Housing established a hierarchy of tourism areas according to several criteria, of which we can mention: resources, tourism equipment and communication network. By this we can determine the most solicited areas in which the local communities manifested great interest for developing tourism practices, thus registering the most numerous investments in building and modernizing establishments with tourism function. The area registering the highest number of investments through the SAPARD Programme, the two most active localities being Bran and Moieciu, is Braşov County that scored a number of 135 projects of investments. It can be included in the first rank area, that of Braşov-Bucegi-Valea Prahovei. Other areas that registered a certain level of concentration are Bucovina, Călimani - Dornelor Depression, Mărginimea Sibiului, Sibiu, Oltului Land, Vâlcea-Câmpulung Muscel, Bihor-Moților Land, and Gorj. We consider necessary to also mention a few of the areas that registered the lowest level of tourism investments, which was determined by subjective and objective factors.

The objective factors are represented by the same patterns considered for the emergence, development or inhibition of such economic activities. On the other hand, we have to bear in mind the subjective factors: the extent of information given to the population, the level of initiative, the financial availability, the priorities established for the economic rural development of the area, the financial input, keeping the terms of deadlines (time framing), the level of competitiveness of the projects proposed for financing.

Types of investments in rural tourism in Romania, at a county level

Table 2

County	Rural boarding houses	Agritourism boarding houses	Other tourism activities	County	Rural boarding houses	Agritourism boarding houses	Other tourism activities
Alba	22	5	1	Harghita	47	1	8
Arad	4	2	2	Hunedoara	7	1	1
Argeş	20	3	2	Iaşi	6	1	-
Bacău	10	1	-	Ilfov	1	1	-
Bihor	35	2	2	Maramureş	10	2	1
B.-Năsăud	4	1	-	Mehedinţi	4	3	2
Botoşani	2	-	-	Mureş	20	1	1
Braşov	122	11	2	Neamţ	30	4	1
Brăila	-	-	1	Olt	1	-	-
Buzău	5	4	-	Prahova	12	-	-
C.-Severin	15	5	5	Satu Mare	1	1	-
Călăraşi	1	-	-	Sălaj	3	13	-
Cluj	15	2	1	Sibiu	21	4	1
Constanţa	5	1	1	Suceava	52	6	4
Covasna	8	2	1	Teleorman	3	-	-
Dâmboviţa	7	1	2	Timiş	15	1	1
Dolj	7	1	1	Tulcea	7	7	9
Galaţi	-	-	-	Vâlcea	15	6	2
Giurgiu	1	-	-	Vaslui	3	1	1
Gorj	26	3	-	Vrancea	6	-	-

Even though the quality of services, set by the conditions imposed for validating the projects as eligible, is relevant for the integration of these boarding houses with tourism function into the national and international tourism networks, still, some of them prove to be functional only temporarily or at a local level. The reason for this still remains uncertain, the only thing we could presume is that they either do not benefit of sufficient promotion, or they do not represent the main economic activity. Another possibility would be that they either are not part of an area or administrative unit, with a high tourism potential, or that they are located at the periphery of an area with tourism function.

The risk of promoting tourism activities without any material basis or of insisting on accepting or "embracing" the tourism phenomenon, as a unique, available practice, able to improve the economic state of the rural space, still persists. The viability of such an economic process at a national level is proved at least on medium term, conditions in which Romania is still a beginner on the international tourism market, though traditionally advanced from the point of view of resources, the services offered being at an initial stage

of development, diversification and quality. Our county is in its first steps in the issue of schools with tradition in tourism specialisations as well, thus being unable to provide trained and qualified persons, adequate to this sector of services to the work market.

The increasing number of firms dealing with tourism promotion and services, and of units with tourism function and services, indeed prove to need support verified only by the functionality of the products they sell. Much more, among the factors that influenced the phenomenon of engaging rural local actors in activities of rural tourism we can also count the status of the areas in which they live. Based on the classifications in the literature of specialty, localities with tourism function were classified in a hierarchy, according to the status obtained from the point of view of their tourism addressability, as it follows: 1. of first importance; 2. of secondary or transit importance; or on another level 1. of international interest; 2. of national interest; 3. of regional interest; 4. of local interest (Iancu, M., Sultana, Viorica, p. 17). We overlapped the relevant areas, which reflect a high concentration of projects of investments, over the ones classified as having a traditional tourism potential. The new tourism areas with potential of development can be identified, only if we eliminate the previous traditional ones, where high concentrations of investments were registered. Hence, the graphics will reflect new nuclei of future potential tourism areas, or scattered establishments, not yet able to support tourism fluxes. Having in mind that up to now we have as a reference the latest known dividing into tourism zones, which for Romania has taken place in 1972, our analysis portrays a possible prior phase of a new dividing into zones of tourism areas, although *tourism dividing into zones does not have a static character, it still needs constant actualisation*, (Iancu, M., Sultana, Viorica, p. 17), this being in fact the scope of our analysis.

5. THE TERRITORIAL IMPACT OF INVESTMENTS IN RURAL TOURISM

The analysis of the territorial absorption of the funds that aim at developing and initiating new activities of "rural tourism" can relatively rely on the first Romanian tourism territorial dividing into zones, or at least on the "fundamental coordinates" considered as illustrative by researchers. The significance of the fundamental coordinates, lies both in their value of natural entities that generate attraction and potential for development, and in the "functional structures" they provide, as subordinate spaces (of influence), which consequently will determine the most competitive and viable types of tourism activities.. These functional structures can determine another type of territorial dividing into zones of establishments that provide tourism services, meaning functional dividing into zones, directly correlated with the types of all possible tourism activities that can be performed. Altogether, we must also consider the factors that can determine the apparition of new specific forms of tourism, and these can be grouped into three main categories: natural, cultural-historical and socio-economic. The territorial dividing into zones of new and modernized tourism establishments co-financed through the SAPARD funds, in our case rural boarding houses, can be classified or discussed in analogy with the classical tourism areas, which are already established in accordance with terms and regulations equivalent to the principles of classification of tourism dividing into zones of a territory that disposes of short, medium and long term exploitable objectives, such as natural and anthropic resources. Concurrently, the spatial frequency of these establishments is determined or greatly influenced by the status of "tourism area". If the tourism establishment and the services it

provides does not represent the main activity, which brings in income to the beneficiary, and, consequently, offers services for transitory tourism, week-end tourism or occasional tourism, then, there is a probability, or we can presume, that the zone factor did not play a leading role in initiating such an activity. On the other hand, the factor that could have, to a greater extent, determined the choice to invest in building a boarding house, resulted to be the character of its perpetual functioning, which resides in the familial trait of this economic activity. This choice finds its motivation in the fact that the beneficiary of such an economic activity is, usually, an authorized person or a family association, in which at least one member of the family is directly involved in the activity of the boarding house.

6. POSSIBLE RESULTS OF THE RESEARCH

The most proper manner of stressing the positive effects that rural tourism development registered during the period of implementation of the SAPARD Programme would be to highlight the increase in the number of accommodation beds created through the construction of new rural boarding houses, 573 establishments and 97 agritourism boarding houses at a national level.

Another important aspect of rural tourism development is represented by the quality of services provided, since these tourism establishments must fulfil all the eligibility criteria required by the contract of non-refundable financing, of being classified with at least 3 flowers in the hierarchy of quality.

So as to attract all categories of potential tourists in the phenomenon of recreational tourism and agritourism, we can notice, in the applicant's guide, the attempt of creating diversity through a rich offer. Hence, all types of potential recreational activities that could be practiced during a séjour, activities offered by the programme of the rural boarding house, those available to be practiced on the territory owned by the proprietors (tourism services providers), or those provided by the natural and anthropic conditions specific to the region or the area in which the accommodation and tourism services unit is located, are financed from the budgets established by the programme. Among such activities we can mention bike-tourism, hunting-tourism, riding-tourism, fishing-tourism, and wine-tourism.

The newly employed workforce in the sector of tourism services, respectively, hotel services, restaurant and bars attending, first hand medical practices, therapy services, benefits of specialized trainings. The most convenient option here would be to select the new employees from the students that have recently graduated from schools oriented to tourism specialization and immediately engage them in these practices. Another aspect to be considered would be the period of employment, and we must admit the fact that most of the new investors generally prefer to employ the new applicants seasonally but there are already many cases in which the applicants are hired over an unspecified period of time, signifying permanence. The most important criteria in the selection of the personnel are the graduated school, age, preferably young persons who could be professionally trained at the workplace. The explanation in the preference of investors to hire personnel seasonally can be explained by the need of evaluating the junior employees' abilities and qualities to adapt to and mould into this work profile, their communication skills, and the level of adaptability in this sector of services.

The rural tourism development may be set as a medium and long term target, due to the fact that it seems quite impossible to create a sustainable network of functional rural boarding houses in such a short period of time, three years, knowing the fact that *measure*

3.4 The development of rural tourism, was declared eligible only in 2003, and the first sessions of contracts financed under it started with 2004. The first areas that registered the first attempts to modernize or to newly build accommodation units with tourism function could represent the premises for a future tourism development, or be taken as examples for strengthening some of the current tourism functional areas in the country. Moreover, the first attempts of the small entrepreneurs within the Romanian rural space can be assimilated as the first models of development in this economic sector.

Having the fact that the SAPARD Programme offered financial help especially to the small entrepreneurs, favouring or at least trying to promote the proper economic activities for the private investors, we cannot imply that this programme did not have the desired impact and effects. On the other hand, a group activity or an organized local community, standing for the concept of unitary and concentrated sustainable development, could have had a lot more advantages, mainly through the financial absorption concentrated in a rural local community, a real development of a much larger local community, and implicitly more visible socio-economic effects within a region.

Yet, we cannot discuss here about the regions that effectively and entirely function based on tourism practices, the tourism economic sector prevailing as the main activity that facilitates inward financial income by exploiting the available natural and anthropic resources.

Romania finds itself at the beginning of a period of attempts to use tourism activities and to shape rural tourism in a well individualized economic sector that would produce financial capital, professional human capital, and specialized services, since, for a long period of time, its rural economy had stagnated, or even regressed to a period of transition and transformation. Therefore, developing a new functional economic sector that would be permanently functional can be considered a realistic attempt for the social and economic refreshment of the Romanian rural areas.

7. CONCLUSIONS

Common policies of rural development promote a strong implementation of the rural tourism especially as a strategic economic alternative for thoroughly analysed large areas but not yet taking into account the risk that a single main activity can determine in the future economic course and development of a local community. The impact rural tourism has, initially seen as a seasonal economic activity with no certain supporting pillars generating flowing financial income, appears differently perceived according to the noticeable reaction local communities have, as active economic agents and beneficiaries. The positive attitude rural inhabitants have towards developing activities in services sector constitute advantages of locating rural tourism in rural areas, especially where the natural potential prevails highlights the major role of the community in developing tourism practices and services in the benefit of people, hence the dependency on human resource and its quality and its ability to properly manage land and the natural resource.

The novelty issue that becomes visible after the implementation of the SAPARD Programme, planned on a 6 year period, is the non-involvement of the local administrations in the locals' decision of developing tourism activities, the level and sense of entrepreneurship being the only factor that determined the absorption of non-refundable funds.

A few blanks, which derived from the previous pre-accession rural development policy and programme, having rural tourism as one of the main priorities, may be considered as important to be filled in for a future rural tourism development strategy and programme so that it

should a more significant impact and cohesion on the rural areas, such as: to organize local action groups for developing tourism investments and assess the land, the natural, and the human resources that could be exploited in tourism, to prepare technical assistance personnel in delimited areas proposed for financing and organized programmes of rural tourism development, to establish tourism as a priority in strictly delimited regional, zonal or local areas or specific localities based on the resources previously mentioned, to create connections between other types of resources economically exploited and practicing rural tourism in localities that show potential of development for various alternative economic activities, to try to apply various models of local tourism development subsequently enlarging the pattern over other neighboured localities so as to create regions (depending mostly on tourism activities), creating borders of tourism development in the benefit of certain areas and their inhabitants – thus correlating rural tourism strategy of development with other directions of rural development, to change typical local life from agricultural production practices to tourism services practices. What becomes a priority is the need for a different approach of the rural development policy, especially rural tourism development, yet not insisting on a single functionality of the rural areas, but preferring the collaboration and mixture of other economic activities, thus eliminating the eventual risk to create single functional areas.

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THE CLUJ SCHOOL OF MEDICINE

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ABSTRACT. – The Cluj School of Medicine. This study analyses the impact the Cluj School of Medicine has had on the Cluj municipal territorial system. We started from the assumption that the founding fathers of the Cluj School of Medicine had a significant impact on the population's health condition by their scientific, teaching and practical activity. The major goal of our research was a systemic interrogation of the School's evolution, of its roots and features as shown by the results of the analysis of the medical schools and of the ethos created by the personalities who had an important contribution to the development of the medical education and of the Cluj School of Medicine.

Keywords: *medical infrastructure, medical system, Cluj medical school, medical and sanitary resources.*

1. BACKGROUND CONSIDERATIONS

The present day health related interdisciplinary research is set to retrieve at least partially the holistic approach on life, illness, health, or death specific to archaic societies. Most important ancient cultures such as the Egyptian, the Greek-Roman, the Indian or the Chinese, placed issues concerning good health and illness within a religious context because religion played a crucial role in their social, political and cultural structures. In traditional societies, the absence of good health and illness signified the intervention of various divinities in human existence. Therefore, all attempts to research into and understand illness in order to affirm good health were necessarily clad in "religious clothing" and were initiated by the "specialists in the sacred," as Mircea Eliade calls them, following a particular train of logic able to understand and to signify the existence and the behaviour of *homo religiosus*. The major attempts to maintain a good health condition or to cure disease were performed by witch doctors, shamans, and priests, which used prayers, charms, and rituals often combined with herbal remedies. During the second half of the first millennium B.C., due to significant scientific advance and to the development of logical-rationalist philosophical and anthropological discourse, the ancient Greeks approached health and illness from a new perspective, remarkably illustrated by Hippocrates, "the father of medicine," who credited natural causes to bring about illness in a well-defined environment. Consequently, it has to be cured by rational methods (Liliana Dumitrache, 2004).

The apparition and development of Christian religion determined a return to crediting supernatural forces to cause illness and health, but the explanation became more coherent as illness was considered God's punishment or a demonic intervention whereas health a sign of God's blessing. Treatment in view of recovering good health consisted of prayers, a positive attitude, special care, and use of various herbal "remedies." However,

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the medieval man's imagination included also individual and community actions such as participating in processions, touching relics, communion with the Holy Sacrament and taking part in pilgrimages to Christian sacred places. In the context of the European Christian civilisation, the Great Plague (1346-1350) changed the view on health and illness (Liliana Dumitrache, 2004).

The Renaissance humanism processed anew the Roman-Greek cosmological and anthropological model, which became one of the premises of the apparition of modern sciences, in general, and of a new health and illness related paradigm. Next, the 18th century Enlightenment movement brought along a mechanicist pattern of the health condition, creating an interesting blend of the Christian view and of the rationalist approach that could interpret reality in a reductionist way, attempting to trace back the necessary causes of processes, illness included, and to offer rational solutions.

Modernity in its turn registered important advances in terms of human body knowledge, ranging from A. Vesalius (1543) to the great 20th century discoveries of L. Pasteur and R. Koch, who promoted true "therapy systems" for fighting diseases and maintaining good health condition. Some specialists claim that, in comparison with the previous centuries, the late 19th century and the early 20th century developments and improvements in medicine and medical services quality produced a true revolution, first in Europe and then worldwide.

In the four decades following World War II, the medical sciences seen as the sum total of health related interests and issues went beyond the microbial paradigm and registered an unprecedented expansion by highlighting illness causality factors such as economic and demographic conditions, education, environment, and lifestyle. These trends have contributed to the recent holistic approach, which surpasses the local, drug based cures (characteristic for the early 20th century) and equally emphasises the major role played by external factors and by the complex inner processes.

The latest studies have built up an "interdisciplinary constellation" of health related approaches, which has had a significant social impact by determining lifestyle changes such as improved hygiene and use of pharmaceutical products in view of a better health education. These changes have resulted into the new concept of public health, which is "the study of health and health prevention requirements of the human population," in other words, the study of population's health condition as correlated to determining factors.

2. CONSIDERATIONS ON THE CLUJ SCHOOL OF MEDICINE

The School of Medicine represents the founding and then extension of a research tradition; it also created and nurtured master-disciple relationships against the background of major concerns with human health. Moreover, it was meant to turn advanced observations and knowledge into valuable scientific works.

The apparition of a School of Medicine in Cluj-Napoca has complex roots but its origins can be attributed mostly to the remarkable academic setting of the "Faculty of Medicine" of the Institute of Medicine and Pharmacy of Cluj-Napoca. These extremely important institutions emerged after the 1918 Union of Transylvania with Romania. They institutionalised a rapidly developing medical space that benefited from the efforts of exceptional, well-known physicians who believed in the nearly missionary nature of their profession.

There are several conditions to meet so that a medical and sanitary educational system may become a school of medicine:

- necessary facilities such as a satisfactory number of hospitals and counterpart institutes, health logistics services such as clinics and laboratories endowed with updated technical facilities;

- an advanced scientific tenet that is well structured and regionally, nationally, and internationally recognised;

- teachers and scholars unanimously acknowledged as masters and models

- professionally highly elaborated scientific work that is comprehensive and synthetic, which is externally accepted;

- a formal and institutional structure intended to educate and train highly competitive researchers, who follow in the footsteps of their predecessors;

- interests and scientific research that spread to ever wider geographical areas.

Professor Salvator Cupcea was the first to use the phrase "School of Medicine" to refer to a "particular Cluj mode of thought and a specific, militant attitude" towards major health related issues. By means of its practical activity and scientific work, The Cluj School of Medicine embodied a singular concern towards healthy and unhealthy people with special emphasis on the interdependent mechanisms related to social and economic aspects and to community's sanitary and medical needs at the time.

A specific trait of any school of medicine, particularly of the Cluj one, is the integrating, dynamic, and holistic dimension of their approach to human health. The great medical personalities developed against the background of various medical school traditions, which in their turn synthesised the research efforts of the earliest educational medical and sanitary institutions and the first medical care establishments in Cluj during the former modern centuries.

In the second stage, remarkable medical practice resulted from the institutional and cultural structures. The research and practice blend had a social impact that lay the foundations of the future School of Medicine. The modern medical education institutions were created based on the great mentors' reputation and on disciples eager to attain and go beyond their forerunners' accomplishments.

During this complex process, the "founding fathers" of the Cluj School of Medicine performed as indefatigable researchers and doctors with remarkable regional, national, and international professional success. They were equally inspiring teachers who guided and motivated their students into medical competence; finally yet importantly, they founded institutions, administrative structures and initiated exceptional cultural manifestations.

The phrase The Cluj School of Medicine refers to several highly trained physicians whose professional, scientific, educational, and moral importance are beyond any doubt. Among them Iuliu Haţieganu, and Iuliu Goia at the Medical Clinic, surgeons Iacob Iacobovici and Alexandru Pop, specialists in general and social hygiene Iuliu Moldovan and Iosif Stoichiţă, and Predescu Rion and Gheorghe Buzoianu at the Otolaryngology hospital, Dimitrie Michhail at the ophthalmology hospital, Victor Babeş and Titu Vasiliu, specialists in Anatomical Pathology and bacteriology, and Victor Papilian, specialist in descriptive Human Anatomy etc.

To sum up, this Cluj-based tradition developed into a true school of medicine against the historical and social background of a multi-ethnic and multi-cultural space. It resulted from ideological and anthropological changes initiated by the Central-European Renaissance and from the multiple perspectives generated by several waves of reform. During a period of awakening and crystallisation of national feelings and identity, the Transylvanian space was particularly conducive to these concerns related to the understanding of the role of the human

being and to the research and promotion of critical spirit. All the great precursors of the Cluj School of Medicine valued the multicultural heritage into a specifically Romanian voice. This created the bases for a singular tradition that would spread its influence not only in the medical field but also in the larger area of culture.

3. THE HISTORICAL ROOTS OF THE CLUJ SCHOOL OF MEDICINE

The starting place of this complex reality is the ***Romanian Transylvanian popular medicine*.** Its sources date back to traditional ancient Geto-Dacian medicine, which Greek philosophical texts present as an integrated holistic anthropological approach. Geto-Dacians considered health in relation both to spiritual and psychic determinants and to spatial and geographic determining factors. This tradition, which survived through medieval age, when it merged with Christian-based practices, gave rise to 17th and 18th century scientific medicine upheld and promoted especially by the physicians who worked in and with the medical educational institutions in Cluj.

Next, during the 18th and 19th centuries, the ***Central-European School of Medicine*** was a major contributor to the Cluj tradition with its important medical schools in Vienna, a true "Mecca of medicine," Graz, Padova, Budapest, and Prague, wherefrom knowledge and exceptional practice work based on the anatomic-clinical model were spread all over Europe.

Finally, there was the contribution of the ***modern Romanian school of medicine*** represented by the Bucharest academic medical elite. Its members valued and refined the new microbial clinical approach originating in Western Europe, in academic centres such as Paris, Berlin, Athens (developed by Greek and Macedo-Romanian physicians) and later London and North America.

Therefore, in Transylvania, at Cluj, a "brand" of medicine, a new school of medicine was born at the crossroads of the Eastern world, characterised by spirit and affectivity, and the excessively scientific Western world. It was tributary to the enlightenment provided by the Romanian schools in Blaj, which invigorated fully Romanian sentiment and culture in terms of arts, literature, science, academic life and, evidently, medical science.

The Cluj School of Medicine practiced an eclectic ideology, which blended the most valuable aspects of contemporary schools of medicine, managing to create an institution unanimously accepted and recognised at a European level. (Florea M., 2004)

4. GENERAL FEATURES OF THE CLUJ SCHOOL OF MEDICINE

The Cluj School of Medicine was a civilising factor for Transylvania. On the one hand, it was a centre of scientific knowledge with important impact on the urban growth of Cluj and, on the other, a catalyst for the modernisation and development of the rural areas, which were still isolated from modern civilised European peoples in terms of medical and sanitary approaches. The physicians and the health care professionals represented true reference models for the social, cultural, intellectual, and artistic sectors by positioning themselves in the avant-garde of the efforts for the common welfare and for a life that would grant people their dignity and personal values.

Besides the general features already mentioned, the Cluj School of Medicine was particularised by specific traits determined by the cultural, historical, and geographic context;

As far as the characteristics of the analyzed phenomenon are concerned, the following can be notised:

- *the public dimension of medical services* (concern for main needs related to public health such as epidemics and major illnesses);
- *the cultural medical dimension* (concern for the spiritual and material needs of students and physicians);
- *the practical medical dimension* (the medical profession and the clinical examination are held in high esteem);
- *the teaching medical dimension* (teachers and students are integrated in university clinics and there is a close interdependence between theory and practice;
- *the social medical dimension* (social factors are considered extremely important for the health condition and prevention is deemed vital;
- *the rehabilitation medical dimension* (curative treatment is followed by rehabilitation, both being parts of the health restoring process);
- *the critical medical dimension* (a balanced assessment of medical practice, which leads to the assuming of responsibility for errors committed both in public and academic settings);
- *the moral medical dimension* (well-reputed specialists offer their services free of charge to socially disadvantaged categories).

The devotion to appeasing their patients' ailments of the health care professionals in Cluj, the "heart" of the Cluj School of Medicine, was well respected; the only reward they expected was the moral recognition of their efforts. In this way, they transformed the official medical act in a proper celebration. (Florea M., 2004)

5. CONCLUSIONS

The major goal of our research was a systemic interrogation of the evolution, the roots, features and the impact the Cluj School of Medicine had on the territorial system of Cluj-Napoca, as well as of its local, regional, national, and international influences.

Our analysis has emphasised the process of the building up and evolution of the Cluj School of Medicine, its historical roots and their particular features.

It described the first medical schools, calling attention to the ethos created by important personalities, who had a major contribution to the development of medical research, of academic medical education and, last but not least, to further progress in practicing their noble profession.

To conclude, in the spiritual capital of Transylvania, we can talk, in a contextual aproach about an exceptional Medical School.

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TEACHING ENGLISH FOR TOURISM AT THE CENTRE FOR TOURISM TRAINING: COURSE DESIGN AND EVALUATION

SILVIA IRIMIEA[1], LIVIA BRADEA[2]

ABSTRACT. – Teaching English for Tourism at the centre for Tourism Training: Course Design and Evaluation. The present study seeks to shed light on the two years experience of teaching *English for Tourism* (EFT) at the *Centre for Tourism Training* of the Faculty of Geography, University "Babes-Bolyai" of Cluj. The study also looks at aspects involved in the training process, which embrace: prerequisites to teaching a foreign language as part of vocational training, objectives, syllabus design, materials used, evaluation and outcomes. Without claiming to yield breaking pedagogical results, the study provides accurate data regarding *teaching English as a foreign language* process.

Keywords: *foreign language learning, syllabus, evaluation, outcomes.*

1. PREREQUISITES

The practical course *English for Tourism* (EFT) taught at the *Centre for Tourism Training* of the Faculty of Geography, "Babes-Bolyai" University targets *managers* of tourism agencies, *tourism agents*, *guides* and *freelancer guides.*

Currently, the Romanian tourism sector is characterized by the following: 1) the formal education system in the area of tourism offers professional qualification for a joint training programme of *tourism agent* and *guide*; 2) there are freelancers in the aforementioned domain, who co-operate with tourism agencies on the basis of a contract signed mainly for the purpose of guiding foreign tourists in Romania and the Romanian tourists abroad; 3) upon completion of a vocational training course, the attendants are awarded, according to the regulations in force, the *Certificate of Director of Tourism Agency, the Certificate of Tourism Agent, and the Certificate of National Tourism Guide*; 4) legally, performing these jobs is conditioned by mastering English and/or another international language.

The *English for Tourism* course is provided by the *Centre for Tourism Training* (CTT), a tourism training centre that has been set up by a Leonardo da Vinci pilot project and operates under the auspices of the Faculty of Geography, the Babes-Bolyai University of Cluj-Napoca.

The learners of the Centre are:

- *investors or entrepreneurs*, who, on the basis of a former qualification, run or want to start up a business in the area of tourism;

- tourism agency *employees* who want to complete a formal training in tourism;

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- *students* from the Faculty of Geography, Faculty of Business, Faculty of Letters or other faculties who wish to acquire tourism competences and skills;

- individuals or professionals who wish to work in this field.

The prerequisites for teaching *English for Tourism* at the CTT are the following:

- the Romanian Legislation requires competences in a foreign language for tourism workers or professionals;

- most of the students who enrol for tourism courses have already acquired English language skills as a consequence of their former high school or academic training;

- in addition, teaching *English for tourism* becomes an integrative cross-discipline since it runs parallel with other subjects, which round up this field of expertise, like: geography of tourism, management of tourism agencies, bookkeeping etc.

Thus, the knowledge acquired at Romanian courses becomes the material support for the development of specific communication competences in English. In general, the learners' level of English was rated as *intermediate*.

The EFT module comprised 20 classes, i.e. four classes held once a week for the duration of five weeks.

The Centre for Tourism Training was set up in 2004 and has functioned for 2 academic years since 2006. Thus, during the Ist year [2006-2007] the Centre hosted:

- one group of tourism managers;
- one group of tourism agents.

During the 2nd year [2007-2008] the Centre had:

- one group of tourism managers;
- one group of tourism agents- guides.

It is noteworthy to point out that, as compared with the first year of training, during the second year, the training that regarded *tourism agents* has been extended to include *guiding* as well, in compliance with the Romanian ″tradition″ of combining the two professions as a result of the demand required by the growing incoming and outgoing needs of Romanian tourism.

2. THE ENGLISH FOR TOURISM (EFT) SYLLABUS DESIGN

As far as the English for Tourism is concerned, first the trainers have identified the needs, the requirements and the constraints of this particular professional environment. Then they have determined the objectives, which are outlined below:

- *to select* from the audio, video and written materials the most appropriate tourist information about towns, regions, countries, destinations or tourist accommodation;

- *to recognize* the specific vocabulary and to name adequate services, actions, organizations and functions in the tourism and travel sector;

- *to describe and to communicate* coherently, fluently and correctly tourist information to persons who speak English;

- *to initiate and carry out* telephone calls for the settlement of tourist services (hotel reservation, meal, restaurant, transport etc.);

- *to negotiate* services and prices;

- *to write* CVs, application letters, faxes, business letters, to elaborate contracts

- *to describe* to guests tourist services and places of public interest;

- *to offer* coherently and correctly and to receive/to understand explanations at business meetings, fairs and exhibitions;

- *to describe* experiences and important events;
- *to work out* reports, transport documents and to answer questions;
- *to interact* using an effective and appropriate discourse;
- *to motivate* orally and in writing ideas, options, requirements and denials etc. in professional situations/context (relating to organization of trips, partnerships, conflicts of interest);
- *to avoid* in interactions the 'traditional' grammatical, morphological, syntactic and semantic mistakes.

The next step in the EFT training process was to design and finalize the syllabus, then to select and produce the necessary teaching materials to draw on. For the design of the syllabus the trainers chose the teaching methods and, equally, the assessment and control methods from among those in use. Special consideration in respect of EFT teaching was given to the methods recommended by the pedagogues who contributed to the pilot project and yielded a book on methods of teaching tourism and foreign languages. It should not be overlooked that *English for Tourism* is a sound teaching area which poses socio-linguistic and psycho-pedagogic problems.

The course syllabus for the tourism manager profile included the following topics: The Travel Distribution Framework, The Business Community, Public Relations, Management Styles and Institutional Culture etc. The envisioned skills were: writing business letters, telephoning techniques, providing info, giving presentations, giving a press release, giving a media interview, meeting people, negotiations, preparing arguments, conducting an interview, writing reports.

The syllabus for the tourism agent-guide profile drew on: The Travel Distribution Framework, Tour Operators, Travel Agents, Forms of Direct and Indirect Selling, The Role and Function of Travel Agents, and was focused on the development of the following skills: providing information, advising clients, writing presentations, business letters, applications, CVs, giving talks, booking procedures, filling in forms telephoning skills, selling techniques, negotiation techniques, writing leaflets and brochures, writing reports, describing tourist places and attractions, preparing for an interview.

The acquisition of linguistic competences and skills for tourism was based on the specialized Romanian and foreign handbooks published by Silvia Irimiea (1999) *English for International Tourism*, Cluj University Press, Miriam, Jacob & Peter Strutt (2001, sixth impression), *English for International Tourism, Course Book*, Longman, Keith Harding and Paul Henderson (first published 1994), *High Season*, Oxford University Press etc.

Conceptually, the trainers have laid particular emphasis on the development of *oral and written communicative competence*, the *acquisition of specialized register*, including specialized terms. The interactional or conversational aspect of foreign language training is also crucial, at least during this stage of language acquisition or consolidation, so that, on the basis of the methods and means made available by the trainer, the users could continue the development of their linguistic competence in the specific vocational area. Nevertheless, the trainers have not ignored and shall not ignore morphological correctness, correcting, whenever necessary, 'traditional' errors, like: the sequence of tenses, the use of modals etc.

Consequently, the trainer offers the methods, the means and the way which would help the learners acquire suitable strategies of learning through *discovery* and *creativity*, trough *co-operation, mutual exchange* and *negotiation*. These strategies can generate necessary and possible solutions for certain problems and situations which occur within the professional context, and also strategies which can be used for reasoning and an efficient communication, ie a clear, fluent, accurate, and intelligible communication.

3. EVALUATION

Evaluation involves instruments, which should objectify more than the assessment carried out through *intuition, observation* and *monitoring*. The cognitive and intellectual maturity of the trainers calls for the use of a strict and firm approach. Given the short history of the Centre and the relative small number of trainees, the trainers could not use statistical data that would yield new teaching values. Hence, the entire training activity of EFT was centred on *control* and *self-control*, on *evaluation* and *self-evaluation.* Since emphasis was placed on interaction and the production/exchange of information, the teacher 'forced' learners to embrace contextual linguistic attitudes and behaviours which required effort, focus and creativity.

The evaluation was carried out through four types of tests: *placement tests, assessment tests, final tests* and *smaller project activities*.

The **placement test** assessed the candidates' competences and skills in general, ie grammar (morphological-syntactic problems), lexis, and writing (prepositions, tenses, modals, comparison, adverbials, indefinite and demonstrative pronouns etc). The test(s), thus, pointed out what the trainer's challenges were and indicated what he had further to focus on.

As a rule, the learners underwent **assessment tests**, which were administered at the end of the EFT module in writing, and which evaluated their progress and the completion of training activities. The test was designed in accordance with the CEFR level B1 and B2. It should be mentioned that the Babes-Bolyai University adopted the CEFR more than five years ago for: reading/comprehension, use of language- vocabulary used in tourism, word formation, grammar - and writing skills (including business letters, presentations and essays).

The final examinations were **final written tests**, which integrated questions that covered the most important vocation-specific issues. The questions were related to the studied disciplines and included a strong, practice-oriented linguistic component (project work).

During their training, on occasions, the learners were further required to carry out *smaller (group) project activities*, which tested both their language skills and their vocation-related competences.

The 2008 year module has yielded the following outcomes:

- 24 learners have qualified for the tourism manager profile;
- 22 learners have qualified for the tourism agent-guide job.

3.1. Placement test. The outcomes of the placement test indicate the following:

- 20 trainees passed the tourism manager profile test;
- 18 individuals passed the tourism agent-guide test;
- four learners from each profile missed the test.

The test was made up of:

a) 50 items, which, in turn, addressed: morphology, syntax, vocabulary and were taken from the Elementary Intermediate and Advanced Language Practice, October 2006 (each item received one score)
b) a paragraph-writing task (e.g. Describe the holiday of your dream) which received 10 scores.

The results were rendered in the table (Table 1) below:

Results of placement tests (Table 1)

Scores (60)	**Trainees**		**Total**
	Manager profile N= 20	**Agent/guide profile N=18**	
30-40	2	1	30-40
41-50	4	7	41-50
51-59	**14**	**10**	51-59
60	0	0	60
Total	**20**	**18**	**Total**

In spite of the fact that no learner has scored the total no of 60 scores, the results of the test were good, since:

- 14 manager trainees and 10 tourism agent-guide trainees acquired between 51 and 59 scores;
- 4 manager trainees and 7 tourism agent-guide trainees acquired between 41 and 49 scores;
- 2 manager trainees and 1 tourism agent-guide trainee acquired between 30 and 40 scores.

In conclusion, the placement test revealed that the entrance level of the students was fairly good due to 2 reasons: the students' progress during previous undergraduate foreign language studies and during their high school years. The test equally showed that only 3 trainees scored less than 40 scores.

3.2. The final test (assessment at the end of the module)

An original test was designed for this purpose, which was scored according to the following grid:

a) a six-item reading/comprehension task representing six scores;
b) a *use of language* exercise:
   - three vocabulary exercises, each made up of four items (12 scores);
   - two grammar exercises including four items representing 8 scores;
   - one rephrase exercise including four items representing 8 scores.

   Total no of scores: 30
c) a writing task:
   - writing a business letter (10 scores);
   - writing an essay (Tourism in Romania) (20 scores).

The outcomes of the final test are reflected in the table below (table 2):

From the 22 trainees registered for the *tourism agent-guide* profile, 20 sat for the examination, and from the 24 trainees registered for the tourism manager profile 21 sat for the examination. The results were as follows:

- two *managers* and three *agent-guides* acquired the maximum score of 60 points;
- 16 managers and 15 agents placed themselves between 51- 59 scores;

Outcomes of final testing (Table 2)

Test scores (60)	**Trainees**		**Total**
	Managers N= 21	Agents-Guides N=20	
30-40	0	0	30-40
41-50	3	2	41-50
51-59	**16**	**15**	**51-59**
60	**2**	**3**	**60**
Total	**21**	**20**	**Total**

- two agents and three managers scored between 41- 50 points;
- none of the trainees scored below 40 scores.

A comparison of test A and B used for the *manager* profile revealed:

A comparative analysis of the results of test A and test B for the manager profile (Table 3)

Test scores (60)	**Trainees Managers N= 21 A/n=20**	**B/n=21**
60	0	**2**
51-59	14	**16**
41-50	4	3
30-40	2	0
Total	**20**	**21**

A closer look at test A and B (Table 4) used for the trainees of the tourism agent-guide profile indicates:

A comparative analysis of tests A and B for the tourism agent-guide profile (Table 4)

Test scores (60)	Trainees Agents-Guides A/n=18	
60	0	60
51-59	**10**	51-59
41-50	**7**	41-50
30-40	1	30-40
Total	18	Total

Thus, the final test records a consistent rise of English language competences, particularly of tourism communication competences. It has been noted, however, throughout the module, that the trainees have integrated the knowledge acquired from other simultaneously-run professional disciplines, and this integrative process accompanied the learning process, as the trainees have had at their disposal the professional contexts and subject matters while they were exposed to work in professional settings.

3.3. *The* ***smaller project activities*** for the manager and tourism agent-guide profiles were focused on written presentations regarding national and international tourist destinations (towns, cities, resorts, regions, countries, mountains, islands etc). The projects were aimed at presenting orally some tourism destinations/attractions at choice, and involved the use of pictures, photos, and power point presentations. For example, the project activities for managers embraced: city tours: a) in Romania (to Alba Iulia), b) abroad: to Trieste, Venice, Verona, Florence, Napels, Palermo (Italy), Monte Carlo (Monaco), Barcelona (Spain), Paris (France), London (UK), Prague (Czech Rep.), c) to the mountains**:** Apuseni Mountains (RO). The agent-guide profile included: city tours: a) in RO: Piatra Neamț, b) abroad: Trieste, Verona, Milan, Turin, Genoa, (Italy), Barcelona, Madrid (Spain), Paris (France), London, Edinburgh (UK), Prague (Czech Rep.), Puerto Vallarta (Mexico), Dehli (India), c) to islands: Seychelles Islands, Kos Islands (Greece).

It should be pointed out that all projects were illustrated with pictures and personal photos, some of them presented on CDs and as Power Point presentations.

Given the character of this course we could not expect consistent breakthroughs or results with revealing pedagogical data. However, we consider that the trainees have progressed significantly according to the B1 and B2 descriptors of the CEFR. Equally,

- the comprehension skills and those of using the English language efficiently developed consistently
- the trainees' professional and linguistic behaviour has improved significantly
- the domain-specific communicative availability became visible and quantifiable.

The progress could be observed in the way the trainees solved tasks more rapidly and correctly, in the way they used a broader range of subject areas, and worked more passionately or enthusiastically.

The concern for the development of general linguistic competences (mainly the communicative competence- both oral and written), of socio-linguistic and pragmatic competences has been reflected in the continuous and sumative evaluation carried out.

Evaluation generates new approaches both on behalf of the teacher and that of the trainee. Both teaching perspectives, can, thus, bestow responsibility on the teacher and provide the trainee with a long-term satisfaction.

From what has been mentioned it follows that the evaluation was carried out primarily in writing, while the oral component, ie the evaluation of speaking and listening skills was accounted for by presentations. On the other hand, this gap was further bridged by the permanent verbal interaction that was established between trainer and trainee and by the use of audio-visual or IT devices. They both complemented the assessment carried out in writing and filled in the gap created by the excessive use of written examinations for final competence and skill testing.

4. CONCLUSIONS

The teaching/learning methods which assured the development and consolidation of English language skills and the growth of specialized vocabulary for tourism and travel were interactive methods, which enhance *interactivity,* the simulation of target situations close to real situations, *linguistic creativity* and *information exchange*. Amongst these methods *role play, discussion, conversation, debate, small-group activity* are preferred by students not only for their interactive character and attractive way of presenting information, but also for the inherent degree of socialization. Consequently, we used genuine materials – texts and audio-visual materials (audio-video tapes, didactic films, tourist's documentaries on DVDs).

As trainers, we must view the teaching process both in its unity and complexity. Communicative activities such as role-plays and simulations mobilize inner resources of the learners, stimulate the pursuit of solutions alongside new mental and psychic operations. Any communicative act can be regarded as a complex unity encapsulating and making use of different skills and strategies. *Interaction*, ie reception and reproduction, both in oral and written communication, becomes a device for competence and skill evaluation and self-evaluation.

The concern for the development of general language competences, for instance the communicative competence - oral and written, socio-linguistic and pragmatic - is possible through permanent evaluation and through complex general evaluation at the end of the course. Evaluation generates new orientations for teachers and learners. Thus, both teaching approaches can, on the one hand, make the teacher become extremely responsible for a long period of time, and, on the other, offers satisfaction to the learner/user.

We consider that the communicative/conversational type of evaluation that we use is specific to this professional environment. In this respect, we note:

- in tourism we communicate pieces of information, we develop social and economic relations;

- the users of English in tourism have to accommodate themselves to some communication situations specific to different contexts (institutions, events, persons)

- speech, conversation, reflection or compositions are based on specific themes in which there are specific notions.

This is the reason why communicative strategies acquired by the methods that we pointed out during the study will allow the users to accommodate themselves easier to professional needs, open new ways in learning the foreign language.

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RECENZII - BOOK REVIEWS

Grigor P. Pop, *Judeţul Cluj*, Edit. Academiei Române, Bucureşti, 2007, 277 pages, 48 figures, 1 color map.

The book of professor Grigor P. Pop appeared in the series „Judeţele României", published by the Romanian Academy. It presents in a very good and synthetic form the main data regarding the Cluj County. Professor Pop is a known name in the Romanian geographical literature, by his prestigious activity at the Department of Human Geography and by his numerous scientific contributions published during his career: 1. *Câmpia Crişurilor. Probleme de Geografia Industriei*, Oradea, 1969, 100 p.; 2. *Judeţele patriei. Judeţul Bihor*, Bucharest, 1972, 164 p.; 3. *România. Geografie economică. Partea I*, Oradea, 1972, 431 p.; 4. *România. Geografie economică. Partea a II-a*, Oradea, 1974, 512 p.; 5. *Câmpia Crişurilor, Crişul Repede, Ţara Beiuşului. Cercetări în Geografia României*, Bucharest, 1977, 371 p.; 6. *România. Geografia Circulaţiei*, Bucharest, 1984, 240 p.; 7. *România. Geografie economică. Partea I*, Ediţia a II-a, Cluj-Napoca, 1986, 322 p.; 8. *România. Geografie economică. Partea a II-a*, Cluj-Napoca, 1988, 372 p.; 9. *România. Geografie hidroenergetică*, Cluj-Napoca, 1996, 237 p.; 10. *Carpaţii şi Subcarpaţii României*, Cluj-Napoca, 2000, 264 p.; 11. *Depresiunea Transilvaniei*, Cluj-Napoca, 2001, 274 p.; 12. *Dealurile de Vest şi Câmpia de Vest*, Oradea, 2005, 176 p.).

The book is structured in the following form: *Prefaţă* (p. 9-10); 1. *Aşezarea geografică. Cadrul natural şi administrativ-teritorial* (p. 11-18); 2. *Structura geologică şi resursele subsolului* (p. 19-40); 3. *Trăsăturile reliefului* (p. 41-58); 4. *Elementele climatice* (p. 59-69); 5. *Unităţile acvatice şi resursele de apă* (p. 70-86); 6. *Cuvertura de soluri, învelişul vegetal şviaţa animală* (p. 87-98); 7. *Populaţia şi aşezările* (p. 99-144); 8. *Potenţialul economic şi valorificarea lui durabilă* (p. 145-220); 9. *Riscuri naturale şi tehnologice* (p. 221-225); 10. *Turismul* (p. 226-235); 11. *Areale naturale protejate şi tipuri de peisaj geografic* (p. 236-243); 12. *Perspective în dezvoltarea durabilă* (p. 244-247). At the end it is placed a list with the placenames from Cluj County in 2007 (p. 248-252), followed by *Bibliography* (p. 253-257) and a summary in English (p. 259-273). In the book there are placed 48 figures, including maps and photos.

After the preview, where there are outlined the qualities of this book, the contribution begin with a first chapter about the geographical landscape of Cluj County: *Aşezarea geografică. Cadrul natural şi administrativ-teritorial* (p. 11-18). Cluj develops the twelve position is we judge by its surface (6674,4 km^2). It benefits of a good position, with good water resources and a good climatic potential. The author makes a short review of the historical past of the county, beginning from the Roman period until nowadays. The statistic data are relevant: in 2002 the population was estimated at 702.755 inhabitants. In the county there are present five big cities (Cluj-Napoca, Turda, Dej, Câmpia Turzii and Gherla) and a town (Huedin) (p. 18).

In the second part of the book, called *Structura geologică şi resursele subsolului* (p. 19-40), professor Pop discuss the evolution and the geologic structure, but also the resources of the subsoil, with many examples. The text is illustrated with a geological map.

The third chapter, called *Trăsăturile reliefului* (p. 41-58), outlines the knowledge of the author. There are described here the main mountains (Gilăului, Vlădeasa, Muntele Mare, Trascăului, Bătrâna, Meseşului, Plopişului), and then the main valleys, the hills and depressions, as well as the Transylvanian Plateau. The map with the geographical units is extremely useful in following the text. Of course, at the end of the book, is it presented another large colored scale map.

The fourth chapter, *Elementele climatice* (p. 59-69), presents data regarding the temperature of the air, the humidity, the wind. Cluj County can has as main characteristic a moderate continental climate and a general circulation of the air from West to East. For Cluj-Napoca the temperature of the air is analyzed in a chronologic area of one century (1901-2000).

Unităţile acvatice şi resursele de apă (p. 70-86) are described in the fifth chapter. The author outlines the importance of the river Someşul Mic, with its affluents Someşul Cald and Someşul Rece.

The sixth part of the book, called *Cuvertura de soluri, învelişul vegetal şi viaţa animală* (p. 87-98) presents different types of soils of the relief: those from the unity of hills, those from the mountain area etc.

An interesting chapter of the book is chapter 7, called *Populaţia şi aşezările* (p. 99-144). The population and the settlements represent, as the author outlines, the essential components in organizing the geographical space (p. 99). It is analyzed the evolution of the number of the inhabitants, the territorial repartition of population and its structure. In a century, the population of Cluj County doubled its number (from 356.892 to 702.755 inhabitants). The density of the population was, in 2005, of 104,1 loc./km^2. In the subchapter about the settlements, professor Pop says that almost 70% from the 429 settlements of the county are documentary attested beginning from the end of the XV century (p. 123). The author describes the main urban settlements (Cluj-Napoca, Turda, Dej, Câmpia Turzii, Gherla, Huedin) with many details. At the end of the chapter the author analyze the 423 rural settlements (p. 141).

Chapter 8 is called *Potenţialul economic şi valorificarea lui durabilă* (p. 145-220). The author discusses around the main industrial activities, the industrial parks from the county, the situation of the agricultural terrains, the cultivation of plants. Of course, it is also described the transport infrastructure.

The following chapter is called *Riscuri naturale şi tehnologice* (p. 221-225). Here are presented the risk problems related to agriculture and industry.

In the following chapter, called *Turismul* (p. 226-235), professor Pop discusses the natural potential of the county. The text is illustrated with a suggestive map. Here the author remembers the Roman military camps from Căşeiu, Gherla, Turda, Gilău and Bologa, the archaeological remains from Napoca, medieval settlements, churches, monasteries, museums and memorial houses. Of course, there are presented even the main thermal settlements.

Chapter 11 is called *Areale naturale protejate şi tipuri de peisaj geografic* (p. 236-243). Here the author analizes the natural protected areas of national importance and the geographical landscape. The final part of the book is called *Perspective în dezvoltarea durabilă* (p. 244-247). At the end of the book is it placed a list with the settlements from Cluj in 2007. The final map from the book presents, practically, all the information from the book. It contains the relief, the hydrographic network, the transport infrastructure, the settlements and other major objectives.

We find ourselves in front of a very useful book, clearly written, with a logical structure.

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Alexandru Păcurar (2007), *Incursiune în memoria locurilor* *(An incursion in the memory of places*), **Editura Presa Universitară Clujeană, Cluj-Napoca (231 p., format A4, numeroase gravuri şi hărţi incluse în text şi 216 titluri bibliografice).**

Mr. Alexandru Pacurar's work "An incursion in the memory of places" can be located in the very proximity of the researches that are associated with Paul Vidal de la Blanche's French school of historical geography.

The symbiosis between history and geography has always given birth to extremely fertile research insights, which have established in time a particular research and methodological model with quasi-monographic significance recognizable in such expressions that mainly targeted the so-called "historical-geographical description of...". Such researches do not offer only a descriptive or space analysis but also its significance at the incidence with the lengthy historical dimension (ie habitat, the traditional organization of space, the repre sentations of the 'interior' space, the repre sentation of the humanized and mythical space) and at the incidence with the historical events that have been assigned to the "great history".

Viewed from a different perspective, the 'incursions in the memory of places' hint to the way in which they acquire an anecdotic character and relevance as "the stories of the places" within the framework of the 'great history'. This narrative unfolded in the past involves anecdotic sequences collected from collective memory or memoirs, both interwoven in a canvas which evokes a narrative 'archeology' of the studied places.

The "great history" ingredients present in this toponymic humour make this book belong to what could be called a certain alternative to historical geography. The abstract visuals (i.e. maps) and the figurative-narrative ones (engravings, photos) are good opportunities for launching some past stories, which amplify the memorialist sequences, and all contribute to the geographic analysis and research carried out by the writer throughout his work.

The present book is a consistent and genuine investigation of the dialogue between geography and history and contains suggestions for future insights. In addition, it gives way to interdisciplinary options which involve geography, history, memorism (as a literary genre), art history, history of architecture, ethnology etc, reaffirming Herder's assertion that "history is geography in motion". I would, therefore, recommend wholeheartedly the book.

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