



ANALELE UNIVERSITĂȚII BUCUREȘTI

G E O G R A F I E

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LANDFORMS OF ROMANIA – THE SYSTEM OF GEOCHRONOLOGIC EVOLUTION

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Abstract

The corroboration of geomorphological, tectonic and paleoclimatic data led to a geomorphological system with two stages and subdivisions.

The pre-Carpathian stage (Proterozoic-Lower Mesozoic, belonging to Vorland) is characterized by: completing the platform units (E, S) and the Paleozoic rigid geotectonic system of Northern Dobruja; levelling stages resulting in pediplains which were subsequently fragmented and fossilized almost entirely (Central and Northern Dobruja sectors).

The Carpathian stage is defined by: completing the Carpathian orogenic system (between Jurassic and Quaternary) in labile edge sectors of the Eastern European plate in which the evolution of some regional rifts (in Jurassic – Cretaceous) and the moving of some rigid blocks (Moessic, Pannonian and Transylvanian) created sequentially tectonic basins where the accumulated materials were folded, faulted and overthrust, or mountain systems resulted by lifting (the upper Cretaceous and Miocene); creating tectonic depressions filled with sedimentary formations; reactivating some deep fractures accompanied by volcanic eruption phases and creating a specific relief; the tectonic movements in the upper Pliocene – Quaternary raised differently all geographic units representing the current orostrucutural system by Carpathians's emersion and join to the adjacent regions; the climate change from savanna (Paleogene) to subtropical (Mio – Pliocene), then temperate and glacial (late Pleistocene) and so on, led to a succession of morphogenetic systems that have generated landforms among which the most representative were preserved mainly as steps, erosion surfaces areas and levels, or terraces from many morphogenetic phases.

Keywords: leveled surfaces, erosion levels, pediplains, terraces, morphogenetic stages, geochronologic system.

1. Researching Romania's Landforms – the Main Geographical Direction over 125 Years

The genesis and evolution of terrestrial landforms became a distinct issue of research and interpretation for geologists and geographers, even since the end of the 19th century. The genetic-evolutionary theories were based on landform

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analysis in different regions. In our country, W.M. Davis' theory (1899-1930) of normal erosion cycle was introduced by Emm. de Martonne's studies (1898-1924). During the last decade of the 19th century and the first decade of the 20th century, the French geographer conducted complex investigations in the Carpathians, wrote scientific papers and a geomorphological PhD thesis, considered for its in-depth analyzes, interpretations, graphs and cartographic materials, a model to study and to present a mountain system within the davisian theory. After that, many Romanian and foreign geographers studied the Carpathians, the hills or the plateaus (G. Vâlsan 1915-1942, V. Mihăilescu 1935-1980, V. Tufescu 1933-1970, C. Brătescu 1910-1943, N. Al. Rădulescu 1937, N. Popp 1939-1970, M. David 1921-1949, R. Fischeux 1929-2000, A. Nordon 1930, T. Morariu 1940-1970, N. Orghidan 1929-1969 etc.), using mapping and interpreting the erosion surfaces according to geological data, as reliable methods in determining landform formation and evolution.

After 1955, the landforms were studied regionally or entirely, according to many directions required by the need to find the relations with other geographical components, to establish the mutual effects of the impact of anthropogenic pressure and morphodynamics on river beds and on slopes, to specify the morphostructural, morphodynamic, morphoclimatic etc. differences; the previous directions became traditional and important among geomorphologists.

Many geographers made outstanding contributions: Gr. Posea 1958-2013, C. Martiniuc 1956-1980, P. Coteț 1957-1970, Valeria Velcea 1960-2000, V. Gârbacea 1956-1980, Gh. Niculescu 1962-2005, L. Badea 1968-2010, Al. Roșu 1968-1988, I. Rădulescu 1956, I. Sârcu 1958-1978, V. Băcăuanu 1962-1990, I. Donisă 1965-2000, I. Hârjoabă 195-1988, I. Mac 1966-2000, N. Popescu 1962-2000, N. Barbu 1970-1988, M. Ielenicz 1968-2013, F. Grecu 1992-2013, M. Bleahu 1964-1989, Gr. Mihai 1965-1995, I.D. Ion 1960-1990, C. Brânduș 1973-1990, N. Josan 1969-1980, I. Ichim 1979-2010, C. Rusu 2002, E. Rusu 1999, P. Cocean 1988-2010, I. Irimuș 1998, as well as several geologists – V. Mutihac 2004, I. Săndulescu 1984, D. Paraschiv 1965-1966, E. Liteanu and C. Ghenea 1966-1975, I. Povară 2012 etc.

The achievements were the global morphogenetic syntheses, included in geomorphochronologic systems with stages, phases etc., all based on the correlation between the paleogeographic evolution and the resulted landforms (V. Tufescu 1933-1970, P. Coteț 1973, Gr. Posea 1958-2013, M. Săndulescu 1984, V. Mutihac 2004 etc.).

2. The Landforms of Romania – the Result of a Complex Morphostructural Evolution

The Alpine movements were essential in creating the Romanian landforms – the Carpathian system influenced directly or indirectly the

neighboring units. According to their evolution and results, there were two morphogenetic stages:

2.1. The Pre-Carpathian (Pre-Alpine) STAGE of structural platforms and oldest landforms (fundament level, uncovered in Dobruja):

- It had an *essential role* in the formation and evolution of the eastern and southern regions of the Carpathian system.
- It ran from the (especially late) Proterozoic and ended for each region differently (upper Paleozoic or early Mesozoic). At first, there was a series of processes (sedimentations, metamorphoses, folds and lifts) that created a structural system with landforms that were leveled (pediplain) and fragmented tectonically (especially on edges), becoming labile, subject to descents (sedimentation basins) or uplifting (reshaping).
- *Structurally*, some rigid platforms resulted finally, having cut fundamentals of pediplain type, covered by sediments (except for Central and North Dobruja) of different thickness, achieved in several cycles. During its formation, in regression phases (dry), some leveled surfaces occurred (up to the stage of erosion plains) and then they were fossilized to a new transgression (six in the sediments of the Moldavian Plateau during upper Proterozoic, between Ordovician and Silurian, middle Carboniferous, Triassic, middle Cretaceous, between Badenian and Oligocene, Pliocene; three of longer duration in the Romanian Plain - Carboniferous -Permian, Lias, upper Cretaceous-Badenian).
- According to V. Mutihac (2004), the pediplain at the base of the platform units had a wavy configuration (high parts on magmatic rocks and low parts on less resistant rocks); then it was fragmented tectonically into blocks. Their (labile) edges were included in the process of forming new morphostructural units (in Dobruja, the Carpathians) etc.
- the *present landforms* (plateaus, hills, plains) of these units were formed in different periods, but mainly in Pliocene-Quaternary.
- Depending on *how* the tectonic activities *joined regionally* the landform erosion ones, two morphostructural sub-stages may be separated:
 - a) The sub-stage of Proterozoic structures and oldest landforms:**
 - It includes *upper Proterozoic* when tectonics (in several orogenetic phases) created a large continental block (Eastern European) composed of rocks with varying degrees of metamorphosis, different magmatic structures and various altitudes. It was a cratonic block, subject to subaerial leveling. The result was a leveled surface of pediplain type (under hot climate and lack of vegetation).

- The *tectonic movements*, while creating cratons, fragmented the platform in late Proterozoic, resulting subunits of different sizes. In consequence, two deep fractures along which tectonic basins were gradually formed (they had different evolutions) separated the microplates – Moessic to the south and Pannonian-Transylvanian to the west (V. Mutihac, 2004). The morphotectonic evolution of this area extended over several periods.

b) The Paleozoic (Caledonian-Hercynic) sub-stage:

These three units had a platform structure and evolved subaerially or were covered by sea on large areas and in different times; their edges remained labile and were flexed or descended slowly in steps, especially toward south, west (the fundament of the Moldavian Plateau) or north (the Moessic fundament). In the sectors covered by sea (epicontinental character) some sedimentary facies occurred, reflecting different influences such as tectonics and morphoclimates for the dry sectors that represented the origin areas for the denudated and accumulated materials.

The morphotectonic evolution of the labile areas (between the plates) was made differently in two phases:

1. The Caledonian phase (lower Paleozoic). It was linked to the basin formed between the Eastern European plate and the west (Pannonian-Transylvanian) unit. Here the Caledonian movements in the lower Paleozoic created the orogenetic system that extended from Central Dobruja to the north-west (probably toward the Baltic shield). The geological maps indicate it certainly as a fallen fundament in north-eastern Romanian Plain (to Trotuș, between the Doruța faults Peceneaga-Camena and Capidava-Ovidiu); the interpretation of data (from geological studies) on the content of some Carpathian and Subcarpathian formations (eg – the elements of green schists in sandstones and conglomerates of Pleșu Peak) led to the idea that the Caledonian Mountains extended north-west, but near the East European plate (it was subsequently eroded, fragmented tectonically and included in other structures).

In middle Paleozoic, the southern mountain system was leveled, resulting a pediplain preserved in *Central Dobruja* (this is the oldest uncovered landform). The erosion under a warm and dry climate (eg Silurian) with little vegetation, favoured weathering and pluviodenudation.

2. The Hercynic phase (upper Paleozoic-Jurassic) depended on the lability existing at the contact between the eastern European Platform and the Caledonian land (the cadomian unit) where tectonics shaped the *Hercynian basin* (from Crimea, Northern Dobruja and the west of the eastern European Platform) that would function as a distinct orogenetic unit in Carboniferous-Permian. This would result in a *continuous mountain system extended to*

Western Europe. It would be *leveled* under a warm and wet climate, with lush forests (in the Carboniferous) and a hot and dry climate (in the Permian). The resulted leveled surface is known in several geographical works to be of *peneplain type*.

The peneplain evolution was different in the units where the Hercynian system fragmented tectonically.

- The *Măcin Unit* remained emerged and suffered permanently small lifts and a *polycyclic and polygenetic erosion*.
- In the *Babadag Unit*, the surface leveling continued until the *Cretaceous when the peneplain was fossilized* by a thick carbonate formation making a broad synclorium (E-W); in the Neozoic, this land was subject to erosion, but the peneplain was not exhumed.
- In the *Niculișel Unit* from Triassic, a graben-rift appeared in the Paleozoic fundament (V. Mutihac, 2004) where flysch sediments and basalt accumulations occurred (they created a plateau); it was eroded (polygenetic and polycyclic) continuously since the Cretaceous.
- The *Tulcea Unit* was a large epicontinental sea in Jurassic; the landforms formed in Paleozoic (eroded metamorphic and sedimentary old rocks) were covered by limestone formations and emerged in upper Jurassic (the chimeric movements); the current landforms are the result of a long subsequent polygenetic leveling.
- *North of the Danube*, the northern Dobruja hercynian and chimeric formations extended as the fundament of Galați Plain and southern Moldavian Plateau (to the fault Fălciu-Plopeana, according to V. Mutihac); this fundament fell northward and north-westward, being covered by thick (Neozoic) sedimentary formations.

2.2. The Carpathian (Alpine) Stage

– *Its name* is related to the formation of the Carpathians and their role in creating our country's morphostructural system. These mountains have relief steps, as evidence of a complex development on phases and sub-stages. They generally belong to the Alpine geotectonic evolution and to all orogenetic cycles of Mesozoic and Neozoic.

– The *beginning* of this stage is related to lower Mesozoic, when the Tethys basin formed some *regional rifts* (Vardar, central Carpathian, western Transylvanian, etc.). Those were important especially in Jurassic-Cretaceous in breaking and developing distinct structural units. Initially, the *fractures* appeared in the labile areas of contact between blocks, generating a system of paleo-rifts between eastern and southern platforms and the Pannonian-

Transylvanian system. The Transylvanian rift basin was separated into two different entities with different evolutions.

- Within basins, there were sedimentations, foldings, and overthrusts in the crystalline-Mesozoic unit and its emersion (of relatively circular directions around the Transylvanian block).

- Successive development of tectonic depressions outside the crystalline land (Cretaceous-Neogene); different fragmentation and subsidence over time of the Transylvanian block, leading to several sedimentation cycles with various extensions and composition.

- All of these led to:

- developing successively the Carpathian structural units, in connection with the Cretaceous-Miocene orogeneses;
- completing the plateau and hill units due to the Pliocene movements;
- completing the Carpathian system and current altitudes through the Quaternary movements.

- The structural units completed successively by tectonic movements generated by block collision and had several long-term paleogeographical consequences – creating gradually land units that were lifted differently, volcanism and many subaerial leveling cycles. The latter resulted in morphogenetic steps with different extension, morphology, fragmentation and number, according to many factors, conditions and climate evolution (from savanna to subtropical, temperate of various types, cold, etc).

- The results were a *pediplain, quasi horizontal surfaces cutting the main interfluvies, glacises, erosion levels and shoulders, piedmonts, terraces* etc. They led to different regional systems in number, age and fragmentation, from the Carpathian units (the most numerous and varied in age, extension, elevation, deformation, subunits) to the plains (with a few terraces).

Connecting the significant elements that define the simultaneous action, but different in time and space of tectonics and subaerial erosion, some different sub-stages and evolution phases of the resulted morphogenetic steps were separated:

a) The sub-stage of the Carpathian erosion surfaces and levels:

- It occurred between Cretaceous and middle Pliocene.
- It relates mainly to the Carpathians, where the structural units were formed, emerged and fragmented gradually; the erosion created three complexes of morphogenetic steps (tectonically deformed later), corresponding to the evolution phases.

- The regions surrounding Carpathians lifted (becoming dry surfaces, subject to erosion) or descended (transgressions accompanied by sedimentation, especially in graben-type depressions).

1. The phase of completing the Carpathian pediplain³.

- In the literature, the resulting step is considered peneplain or pediplain (according to the morphoclimatic conditions).
- Fragments of this pediplain may be found only in the Mesozoic crystalline units at the highest altitudes; it is the first final result of a long evolution (upper Cretaceous-Eocene, but extended in some places until the Oligocene, Gr. Posea et al., 1972).
- There were two intervals with distinct genetic consequences:

a) The rift-basins (Jurassic- upper Cretaceous) developed in eastern and southern Transylvanian block, a labile contact area with the Vorland platforms; there were sedimentations, magmatism and metamorphoses during rift extension and folds, overthrust, emersions during the Austrian and Laramic orogeneses. The results were the crystalline-Mesozoic land unit (subject to leveling) and, on the other hand, the extent of the tectonic basin on Vorland labile area (with intense sedimentations).

b) Leveling the landforms created by tectonics

- The *erosion* acted on the Carpathian landforms of various heights and composition (sedimentary series accumulated in the adjacent seas, made up of carbonate, marl, clay and some conglomerates) under a warm and wet climate (the red clays resulting from lateritic accumulation on land).

The *result* was a leveled surface (*the Carpathian peneplain or pediplain*⁴) that has been identified and mapped on the highest peaks, as plateaus dominated by residual peaks and ridges. Its altitude varies from one massif to another due to the distortions imposed by the subsequent epirogenetic movements that had different intensity and frequency. As a result: the Apuseni Mountains down to +/- 1600m in the central sector (Bihar Mountains) from 1100 to 1000m in the north and northeast; in the Banat Mountains is at +/- 1400m in Semenic and 1100m outwards; in the Meridional Carpathians, it rises from +/- 1800m (west) to over 2000m (east); in the Rodna Mountains, it is at 1800-2000m; it has low altitudes (below 1000m) in Poiana Rusca (1350m), and peaks Meseş and Plopiş.

- In some Carpathian massifs with several sub-phases of epirogenetic lifting within a single tectonic period, the *leveling in two or three sequences* is indicated by as many morphogenetic equilibrium surfaces (eg they are relevant in the Apuseni Mountains at +/- 1750m, 1600m, 1450m; in the Meridional Carpathians at 2000-2200m and 1800-1900m).

³ We used the names given by Gr. Posea et al. (1972), as they are entitled for generalization at a large scale.

⁴ These names are related to genesis' specifics; in most cases, we used the name of the place where the respective surface is representative (Borăscu, Farcaş-Cârligaţi, Semenic etc.), or the geological period in which it was created (Eocene).

- The *completion* of these *steps* is linked to a *long geological time* (from *upper Cretaceous* and until *late Paleocene*, but *frequently in Eocene* or *early Oligocene*); it ended when a new orogenetic cycle began (late Paleogene).
- The Laramic tectonic movements caused in the Carpathians and in Vorland some emersions of different extent and duration (Eocene, Oligocene and a large part of Miocene), resulting erosion surfaces considered by many to be peneplains (the Moessia peneplain, the Moldavian Paleogene fossil peneplain, the post-Cretaceous Dobruja peneplain). They also began to create the *Transylvanian tectonic depression* (through the subsidence of some sectors of the fragmented Transylvanian tectonic block) that would be subject to sedimentation in *several cycles*.

2. The phase of Carpathians' structural completing and forming (detaching) the morphogenetic complex „the medium Carpathian surface"

- The *name* is the first connected to the interval (upper) Oligocene - lower Pliocene, when the Carpathians' structure (flysch units, volcanic massifs and tectonic depressions) completed after several phases of orogenetic movements (Savic, Stiric-Moldavian).

Secondly, it refers to the erosion results of some new landforms generated tectonically and successively (the internal flysch in the Savic orogenesis and the external flysch in the Stiric-Moldavian orogeneses); they gradually joined the Mesozoic crystalline massifs (lifted entirely, but also fragmented into sedimentary basins in Badenian).

- *Linking* the two components (tectonics and subaerial erosion) with the results recorded in landforms and the formations of the adjacent sedimentary basins, there were several subphases (lower Miocene, upper Miocene) that created one or two pedimental steps.

As a result, within the peneplain and eroded massifs of the Mesozoic crystalline unit, another important erosion cycle occurred, connected with an inclined outward step (+/- 1800m) and shoulders on the valleys penetrating them. The flysch mountains had two situations. There were two erosion subphases in the internal unit, and the result would be a system of quasi horizontal surfaces on the main interfluvies (at +/- 1750m), continued outwards with slight slopes, but at the same hypsometric level. In the external flysch, the morphologic landscape would be represented by bridges dominated by peaks with many structural influences.

- The *erosion* was done under a subtropical climate (with obvious seasonal variations in thermic and pluvial regime) and therefore the resulted surfaces would be pediments.

The complex of the medium Carpathian surface consists of *one or two steps* located at *medium altitudes*. They were fragmented in Pliocene and Quaternary so that they currently have the appearance of smooth ridges that

extend down from the center to the outlying mountains. In the Mesozoic crystalline unit, they are dominated by the relatively steep slopes the peneplain ends with, or lito-structural peaks in the flysch zone.

- *Altimetrically*, in the Apuseni Mountains (Măguri-Mărișel or Țara Moșilor surface) it extends at 1200-1000m in the central sector, but descends outward to +/-800m; in the Banat Mountains, it spreads at about 1000m in the Semenic Mountains, and 600-800m outward; in the Meridional Carpathians – the Râul Șes complex has two steps and ascends from the west (1400m) to the east (+/-1850m in the Bucegi Mountains); in the Oriental Carpathians, there are two obvious steps (1500 - 1700m in the north, in the mountains made up of Mesozoic crystalline rocks and 1200-1400m in flysch; in the Curvature Carpathians, only in the flysch mountains at 1650-1800m and +/-1400m).

- The *existence of two steps* in some massifs was determined by the lifting movements in middle Miocene that stopped the evolution started in Oligocene and led to a new sub-phase completed in late Sarmatian.
- The *regions bordering the Carpathians* subsided gradually with different intensity (a general subsidence in Badenian – lower Sarmatian). The volcanic eruptions created isolated volcanoes and finally an archipelago in the Transylvanian basin and south-eastern Apuseni Mountains.

Dobruja remained a low continental land, entirely subject to erosion until the Sarmatian, when another transgression occurred (the limestone plaque).

After the Cretaceous, the Moessic platform emerged and was eroded (by karst processes) until the Badenian, when a new transgression occurred and therefore the peneplain was fossilized.

The western regions of the Western Carpathians were covered by sea in Badenian-Sarmatian, having connections with the intra-mountainous depressions (a significant sedimentation).

2.3 The Phase of the Carpathian Border Surface

- The *name* is linked to its extent outside the mountain systems (plateaus or suite of rounded peaks). From here it penetrates the mountains through valley corridors (as upper level or erosion shoulders) or extends on depressions' mountainous edges (mainly tectonic), or on the hill peaks near the mountains (they were land sectors when that surface was made).

- *Duration and evolutive conditions*. It was completed during the Pliocene. It began when the Sarmatian movements weakened (the Moldavian phase), a fact that completed the structure of the Carpathian system and lifted it, breaking the cycle of the Miocene erosion phase. Meantime, the last volcanic eruptions (completing mountain chains or groups of this type) and the Pliocene

transgression in Pontian occurred (it had a double role – the base level for all intra- and extra-Carpathian areas, and also regional erosion through "abrasion", especially outside the Carpathians).

- *The phase ended* with the tectonic movements in the latter part of the Pliocene which interrupted the cycle and started the large accumulations of sands and clays in the lakes or seas adjacent to the Carpathians.

- The Pliocene *climate* was *subtropical* and helped *pediment* formation.

- *Extent*. There are many proofs of this cycle; they have different configuration depending on the joint action of external agents, the intensity of tectonic uplift and subsequent fragmentation.

In the Meridional Carpathians, the Gornovița surface is usually at 850-1000m, but ascends on valleys (as erosion shoulders) to 1150m; in the Banat Mountains, it forms the level of peripheral ridges at 400-450m; in the Apuseni Mountains it rises in altitude from 450-600m (Feneș-Deva) outward to 700-900m (as shoulders), inward on the valleys; in the Oriental Carpathians it is located at 750-900m in the Paleogene flysch units, 950-1100m in the Cretaceous flysch units and 1000-1200m in the Mesozoic crystalline unit; in the Mehedinți Plateau it spreads from 400-450m in the region of Gornovița village and 400-600m on the neighboring mountain ridges.

a) The sub-stage of erosion levels and terraces

- The *name* can be correlated with the completion of the morphologic evolution of the last million years prevailing and having complex characteristics in the extra-Carpathian regions.

- *Duration and paleogeographic evolution*. It started in the second part of the Dacian along with the Carpathians' uplift and their adjacent regions that also emerged gradually (definitively in Transylvania, partially in central Moldavian Plateau and western side of the Occidental Carpathians) and their leveling (Dacian-Romanian). The tectonic movements of the Wallachian phase had important morphostructural consequences. The Carpathians uplifted again. There were at least two periods of intense activity (upper Romanian and upper Pleistocene) of uplifts and structure completion for the structural units neighboring mountains (the Depression of Transylvania changed its monoclinic structure in N, NW, SE to an almost circular diapir and then the domes in its center; a huge NW-SE monocline resulted in the Moldavian Plateau; in the Subcarpathians, the folded subunits formed two alignments, alternating with the monoclinic structures; in the Getic Plateau and the Banat-Someș Hills, the monoclinical arrangement turns into a tabular one outward; the last volcanic eruptions (resulted in isolated basalt structures) and the compensatory local or regional subsidences (in some depressions and some large areas of plains) kept lacustrine or marsh environments until the Holocene. The evolution of the external agents was performed under conditions that went from subtropical to

temperate or glacial cold climates with nuances of continentalism. There was a sequence of longer or shorter erosion intervals according to the climate variations, reflected in the genesis of some landforms as glacises, piedmonts and then terraces.

There were two separate phases according to the erosion characteristics.

1. The stage of carving the erosion levels

- *Name.* The erosion results are various, but the erosion levels are much more common in both the Carpathians and the adjacent hills.

- *Duration.* The correlation of the resulted landforms and the structural and tectonic data and sedimentary deposits indicates the period Dacian-lower Pleistocene.

- *Erosion characteristics.* On the one hand, the tectonic mobility (saccadic uplifts of different regional intensity) facilitated to achieve two (sometimes three) erosion levels reflected in the setting of secondary peaks in the Carpathian valleys and hills and, on the other hand, a generalized erosion in Transylvania (that was a plain slightly raised by emersions, forming its first hydrographic system) and on the contact strips with the mountains. The more pronounced uplifts in late Pliocene (especially for the Meridional Carpathians) correspond to the accumulation of the "Cândești formation" (a mass of gravels and sands that make up the Getic Plateau and the similar strata accumulated in the subsident plains).

The landforms evolved under a subtropical climate, favorable for pediments and piedmont plains.

- The *extent* of the resulted *morphogenetic steps* reflects both the conditions generated by tectonics and the regional influences of their manifestation.

In the Oriental and Meridional Carpathians, there are two erosion levels on the main valleys. They descend altimetrically from central to border in the mountains (+/- 1000m and +/- 750m, to 700-750m and +/- 550m) where form glacis surfaces (700m and 550 m). In the Occidental Carpathians, their altitude is 350-450m, dominating the terraces.

In the Subcarpathians, the levels coming from the mountain area continue along the main valleys; on the secondary valleys, there is only the lower level, connecting with the origin basinets. They have different altitudes because of the local rises (on anticlinal axes) in upper Pleistocene, the lithological differences and the fragmentation following the morphological processes. They generally descend from +/- 700m and 550 m (near the mountains) to 450-500m and 200-300m outward (the lower level extends to the Curvature Subcarpathians in the Cândești formation, where it is not deformed).

In the Moldavian Plateau it is located at 400-500m as patches on the main interflues of a glacisplain (V. Băcăuanu, I. Donisă), then as shoulders on the main valleys and origin basinets, strongly eroded by landslides and torrents.

In the Hilly Depression of Transylvania, the researchers indicate either (Gr. Posea 1969) a higher level (that goes from $\pm 500\text{m}$ in southwest and $650\text{-}700\text{m}$ in east and south) and a lower one (at $350\text{-}450\text{m}$), or three steps (M. David, 1945, but also in various PhD theses) within the same hypsometric range, all named after the places where they are clearly noticed. They form glacises or erosion piedmonts near the mountains. The monoclinical structure units are influenced by them, while the Pontian formations are intensely eroded by landslides, torrents and rainwash.

There are two steps in the Banat and Someș Hills, the upper one ($300\text{-}450\text{m}$) at the level of interfluvies, and the lower one as valley shoulders strongly eroded by torrents and landslides.

There is usually a single accumulation level on the interfluvies of the Getic Plateau. It represents a fragmentation rest of the lifted Villafranchian piedmont plain.

In the Dobruja Plateau, the polycyclic and polygenetic erosion affects the entire area (including the southwest sector, affected by abrasion and lacustrine processes in Pontian-Romanian). A low plateau (below 300m) was eroded, having a complex lithologic structure. It was located between the silting Getic lake (W) and the Black Sea area (E).

2. The phase of Quaternary erosion (of terraces, flood plains and completion of the current landscape composition)

- Its *name* results from the correlation between the created landforms (spread over all relief units), and the local or regional ones generated by various factors, resulting in distinct morphological landscapes that complete the system acquired over the geological evolution.

- *Duration*. They were created during the last million year (middle Pleistocene - present) through an evolutionary joint of tectonics (epirogenetic movements and folds) with marine and lacustrine level fluctuations and a diversified exogenous agents and processes, according to the general climate changes or local petrographic, structural or anthropic (latest centuries) changes.

- *The paleogeographic evolution and the resulted landforms*

The *tectonic movements* of the Wallachian stage continued but with variable intensity over time (there are saccadic uplifts of maximum intensity in the second part of the Pleistocene, giving the current altitudes) and regionally (local morphostructural consequences as folding layers to vertical, subsidences, diapirism etc.). The piedmont plains lifted and the Getic lake disappeared, facilitating the creation of piedmont plateaus subject to subsequent fragmentation, and of some plains (glacis, terrace, subsidence, tabular plains) with different altitude and morphology according to their genesis.

The *climate changes* occurred gradually turning from a subtropical climate with continental shades in middle Pleistocene into a temperate one, with

cool polar and temperate periglacial variations in upper Pleistocene, and finally a temperate climate with temperature and rainfall oscillations in Holocene.

The *Black Sea level fluctuations* had regional effects on a low plateau (or an erosion plain) multi-structurally continued eastward through an extensive shelf. There are obvious effects of these oscillations on the coastal morphology during the last millennia. They were the result of moving from one shore of regression accompanied by the coastal plain's expansion eastward (upper Pleistocene and lower Holocene) to one of ingression (oscillating) with bays, delta, lagoons, cliffs, narrow beaches and so on (the last two or three millennia). Dobruja's morphology was completed by the Danube Delta and a river-lagoon plain, which are its newest units. They were created by a combination of effects imposed by a significant contribution of fluvial and alluvial materials carried by permanent marine currents (N-S) with no tides and a extended shelf located at shallow depths.

The fluvial landscape

The terraces have the largest extent, being represented differently on valley generations. Along them, the terrace system is dominated by the Pliocene erosion levels and shoulders. Their number, physiognomy, extent, and age are frequently evaluated in the literature on valley generations and regional morphogenetic systems with several characteristics:

- there are 6-8 terraces at altitudes 5-160 m on the main valleys (in the Carpathians, Subcarpathian, hills and plateaus);
- their number drops to 2-5 in the Getic Plateau, Western Hills, southern Moldavian Plateau (below 160m), 1-3 in high plains (<20 m), Dobruja (1); there are no terraces in subsidence areas;
- along the Danube, there are 8 terraces in Buziaș-Vârcioroia gorges, then 5 in Oltenia, 4 to Argeș, 3-1 to Brăila (according to the gradual withdrawal of the Getic lake eastward and setting the course of Danube). Similar situations are along the valleys crossing the Carpathian area. There is a decrease in the number of terraces (from 6 to 1) and gradually losing in the high plains, glacises or disappearance in the subsident plains.

In general, their dimensions and extent vary with the valley generations (extended for the old ones, narrow for the recent ones), age (extended for the upper Pleistocene and very fragmented for the previous ones), the role of tectonic movements (narrow and distorted in areas affected by uplifts, and missing in the subsident ones) etc.

The largest terraces are in the hills, plateaus, intra-mountainous depressions, high plains and at relative altitudes of maximum 60m.

The smallest terraces (strips or patches) are in the gorges, the relative altitudes above 80m and along the valley sectors made up of high resistant rocks.

– They are genetically related to the role of climate oscillations (they are parallel) or tectonic movements (deformed where they were raised or lowered) or their combination along large valleys (sectors with convergent, parallel, divergent extents).

– Structurally, the alluvial terraces have bridges covered by alluvial fans and colluvial deposits; locally, there are also rock terraces (in the Carpathians and Subcarpathians, in the areas made up of hard rocks or where the uplifts were frequent) and alluvial terraces (gravel layers).

– The age of the terraces was appreciated by various authors on the basis of several criteria, resulting three chronological marks (30-35m Wurm terrace; 60-65m middle Pleistocene, 90-115m lower Pleistocene terrace) that defined the general or regional morpho-chronologic systems (N. Popescu *et al.*, 1972).

- The *flood plains* belong to the Holocene and have a significant extents on the valleys in the plains (especially in subsident sectors), plateaus, hills or depressions (they have one or two steps at 1-3m or 5-6m). There are no flood plains along gorges or they are small in the mountains. The subsidence plains develop complex alluvial layers with flood plains of various functionality. During the recent decades, the flood plains were changed by hydroelectric or hydro-ameliorative constructions (Danube, Olt, Jiu, Argeș, Bistrița etc.).
- The *glacises and alluvial fans* have a significant frequency at the contact between mountains, hills and plains, or depression edges. They are stacked alluvial deposits (gravel, sand, clay lenses) covered by loess deposits. They get lost in the general level of plains or depressions and sometimes they are cut by the rivers that created them.
- *Other landforms*:
 - ◊ *The glacial landforms* were created under the cold, glacial climate (upper Pleistocene) on the Carpathian ridges (above 1750m), during 1-2 phases (or glacial stages).
 - ◊ The structural and lithological variety facilitated the creation of many specific landforms (sometimes even different landscapes).
 - ◊ The active morphodynamic slopes favored a variety of landslides (especially in the hills) that frequently changed the respective landscape physionomy.

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LA NOTION DE GÉOSITE ET SON PERTINENCE DANS UNE ÉTUDE SUR LA RÉGION DU DÉFILÉ DU DANUBE EN ROUMANIE

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Abstract

Cet article a le but de voir en quelle mesure une recherche des géosites dans la région du Défilé du Danube (Portes de Fer) peut donner des résultats concrets et satisfaisants. Il analyse, succinctement, les principales caractéristiques géologiques et géomorphologiques des Portes de Fer et essaye de faire une corrélation avec le terme de géosite comme nous le connaissons aujourd'hui. Après le collapse de l'industrie minière, le tourisme est devenu la plus importante alternative économique de cette région. La géologie et la géomorphologie doivent être bien exploités touristiquement et cela est possible seulement par la création d'un projet qui analyse et met en valeur les géosites de cette région. Ce papier essaye aussi de souligner les principaux enjeux d'un tel projet.

Mots clés: Portes de Fer, géosites, traits géologiques et géomorphologiques, enjeux épistémologiques.

1. Problématique

Les territoires sont soumis aujourd'hui, visiblement, aux recherches des géosites. C'est le cas aussi du territoire roumain qui, depuis plusieurs années, est devenu l'objectif des chercheurs roumains spécialistes en géologie/géomorphologie. Ainsi nous pouvons noter quelques études, notamment sur le territoire roumain montagneux (Ilieș *et al.*, 2007; Comănescu *et al.*, 2009, 2010, 2011). De plus, pour la région choisie il existe déjà plusieurs études en ce qui concerne les traits géologiques et géomorphologiques (Posea *et al.*, 1963; Posea, 1964; Popa, 2003, 2011; Carablaia *et al.*, 2010; Grecu *et al.*, 2011 etc.).

Notre approche vise la géologie et la géomorphologie du Défilé du Danube (Portes de Fer) dans une perspective qui s'intègre dans la grande discipline d'études de géosites. Aucune analyse faite jusqu'à maintenant ne traite pas la géologie et la géomorphologie des Portes de Fer en vue de déterminer la possibilité d'y implémenter une recherche des géosites. La principale

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problématique c'est donc de voir en quelle mesure une recherche des géosites du Défilé du Danube en Roumanie peut donner des résultats concrets et satisfaisants.

2. La terminologie

Le géosite

Le géosite ou le géotope représente un *topos*, un lieu géographique avec des formes spécifiques et des telles ou telles valeurs, qui peut lui-même ou en collaboration avec des autres éléments bioécologiques ou anthropiques représenter un objet de patrimoine national ou mondial. Les géosites sont des portions de territoire d'une importance géologique, géomorphologique ou géoécologique particulière. Ils sont des témoins importants de l'histoire de la Terre et donnent un aperçu sur l'évolution du paysage et du climat.

Selon notre avis, il y a un sens large de cette notion de *géosite* en ce qui concerne les sites liés aux aspects géographiques et en sens restreint en ce qui concerne les sites géologiques et géomorphologiques. Théoriquement, dans la typologie des géosites il y a encore beaucoup de confusions parce que pas tous les processus et formes peuvent être considérés comme géosites. Il s'agit d'une nouvelle terminologie qui est applicable aux formes, aux endroits avec signification scientifique au-dessus de celle générale. La logique scientifique est similaire avec celle de hasard versus processus géomorphologique.

L'apparition de la terminologie moderne est directement liée au *Symposium International pour la Protection du Patrimoine Géologique* soutenu en France (Digne-les-Bains) il y a en peu plus d'une vingtaine d'années – le 13 Juin 1991 – le moment quant, pour mettre en évidence les concepts de patrimoine géologique et culturel, la communauté scientifique et les associations internationales ont adopté les termes de géotope, géosite et géomorphosite. Les lois concernant ces notions ont été publiées sous l'égide de *La Déclaration Internationale des Droits de la Mémoire de la Terre*.

Aujourd'hui, en fonction des pays utilisateurs de ces concepts on peut trouver deux directions principales à l'égard de la terminologie:

- L'école Anglaise, Américaine et Italienne qui ont adopté et utilisent le terme de **géosite**;
- L'école Allemande et Suisse qui ont adopté et utilisent le terme de **géotope**.

L'école Française utilise les deux termes mais on constate une fréquence plus grande pour le *géosite*. En Roumanie, tous les papiers que nous avons consultés font usage aussi du terme *géosite*. Dans ces conditions nous considérons être pertinent l'utilisation du même terme de géosite.

Ce nouvel intérêt a été notamment guidé par le développement du géotourisme et des géoparcs, qui se basent non seulement sur une valorisation des aspects scientifiques, mais également des autres valeurs des géotopes. Les étapes proposées par nous pour la valorisation des géosites sont présentées dans

la Fig. 1. Généralement, on propose la distinction entre la valeur centrale (scientifique) – qui fonde la considération d'un objet géomorphologique en tant que géotope –, et les valeurs additionnelles (économique, écologique, culturelle, esthétique), qui viennent de compléter la valeur centrale. Dans certains cas (géotourisme par exemple), les valeurs additionnelles recouvrent une importance aussi grande que la pure valeur scientifique (Reynard, Fontana *et al.*, Bern 2006).

Les dernières recherches importantes en ce qui concerne les géosites et leurs caractéristiques appartiennent à l'Institut de Géographie de l'Université de Lausanne et en particulier au même Emmanuel Reynard qui a réalisé une fiche d'inventaire pour ces géosites qui comprend cinq volets principaux (les données générales, la description et l'analyse de la morphogenèse du site, l'évaluation de la valeur scientifique, l'évaluation des quatre valeurs additionnelles, une synthèse qui résume la valeur globale du site) et pour chaque valeur il a défini tous les critères d'évaluation. De plus, l'auteur explique dans autre papier que les paysages, et donc également les géomorphosites, doivent être étudiés en tenant compte d'un double composant, l'un objectif et l'autre subjectif. Les perceptions variées des formes du relief par les individus et les sociétés, qui dépendent de la culture, de la formation, du niveau social etc., confèrent aux géosites différentes valeurs scientifique, écologique, culturelle, esthétique et économique.

Cette notion a été à la base de nombreuses études dans chaque pays d'Europe. Parmi les pays qui ont une forte activité de recherche sur ce sujet sont la Suisse (Reynard, 2004b; Monbaron, 2004; Wildberger, Oppliger, 2001; Antonini, 1999; Maur, Maur, 1997; Grandgirard, 1996) et l'Italie (Aigotti, Renzo *et al.*, 2004; Aloia, Guida *et al.*, 2007; Cannillo, Gregorio *et al.*, 2005; Geremia, Massoli-Noveli, 2005). En effet, les territoires marqués par la présence des Alpes ont été les premiers qui ont posés ces questions des géosites. En Roumanie (Comănescu, Dobre, 2009; Comănescu, Nedelea, 2010; Ilieș, Josan, 2007, 2009; Bâca, Schuster, 2011; Comănescu, Nedelea *et al.*, 2011), le sujet est à son début mais les perspectives sont assez positives.

Le géomorphosite

Le terme de *géomorphosite* a été utilisé pour la première fois en 1993 dans un papier de Panizza et Piacente (Panizza, Piacente, 1993) qui ont proposé ce terme pour indiquer les objets géomorphologiques présentant une valeur. Ils constituent l'une des catégories de géotopes, au même titre que les géotopes structuraux, paléontologiques, sédimentologistes, minéralogiques, pétrographiques et géochimiques, stratigraphiques, hydrologiques et hydrogéologiques, ou spéléologiques. Reynard ((Reynard, 2004a):127)

complète la définition: „les géomorphosites comprennent à la fois des processus d'érosion et de sédimentation (zones alluviales actives, marges proglaciaires, laves torrentielles) et les formes du relief résultant de cette activité (glaciers rocheux, lapiés, cônes d'éboulis)”.

Grecu et ses collaborateurs (Grecu, Palmentola, 2003; Grecu, 2009) ont fait souvent des corrélations entre ces processus géomorphologiques et la géomorphologie dynamique et ont dit que, en effet, c'est la géomorphologie dynamique qui est à la base de tous ces phénomènes et c'est toujours la géomorphologie dynamique qui peut être valorisée en tant que *géosites* ou *géomorphosites* (Grecu, Palmentola, 2003).

Le terme combine les mots de *géomorphologie* avec celui de *site*. La géomorphologie est la science qui étudie les formes du relief à la surface de la Terre (Chaput, 1997; Coque, 1998; Ielenicz, 2004; Valdas, 2004; Grecu, Palmentola, 2003). Les géomorphosites représentent donc formes du relief dont les attributs géomorphologiques particuliers et significatifs en font une composante du patrimoine culturel au sens large d'un territoire donné.

Grandgirard (Grandgirard, 1995, 1997, 1999) souligne pertinemment les traits des sites géomorphologiques en disant qu'ils sont des formes du relief qui délivrent des informations grâce auxquelles nous pouvons décrypter l'histoire de la terre et/ou d'appréhender son évolution actuelle et ultérieure. Il peut s'agir de simples objets géomorphologiques ou de grandes portions du paysage. Le même auteur individualise quatre catégories des sites géomorphologiques selon leur complexité croissante: ils peuvent être des formes isolées, des ensembles de formes, des complexes de formes ou des systèmes géomorphologiques.

À notre avis, la valeur primordiale pour les géomorphosites est celle notamment scientifique (qui peuvent avoir une signification culturelle, touristique etc. en ce sens ayant une valeur de patrimoine naturel) ou anthropique protégé.

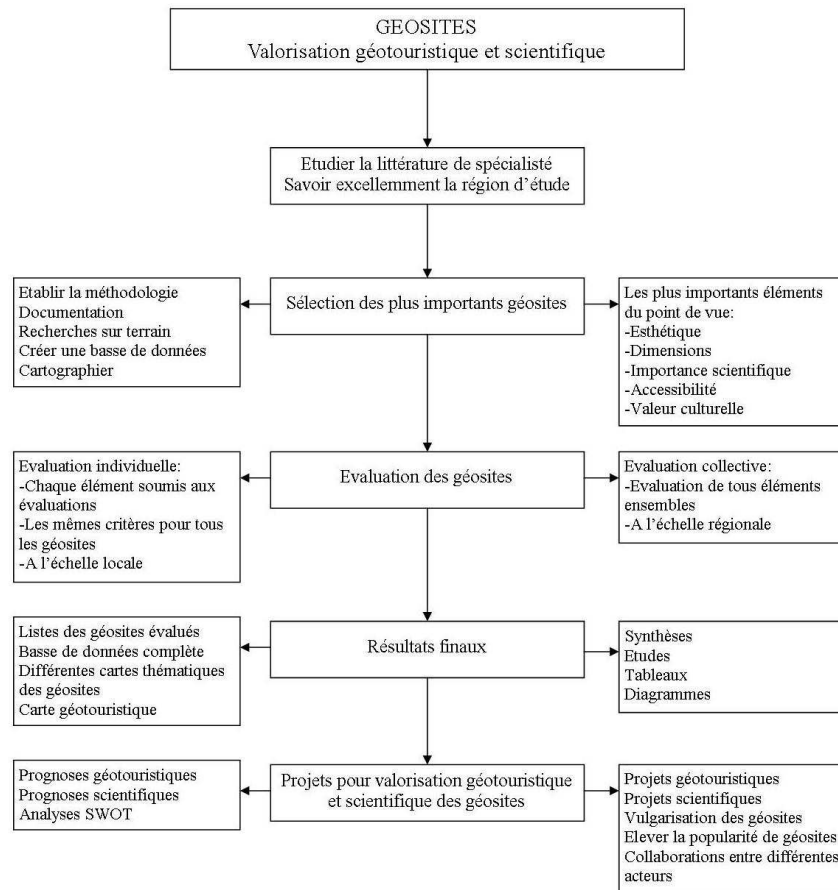


Fig. 1. Les principales étapes dans une évaluation scientifique et géotouristique des géosites

À l'égard de valeur scientifique, son importance doit concerner l'un ou plusieurs de ces usages ((Panizza, 2001):4; Fig. 2):

- modèle pour un processus géo(morpho)logique;
- objet utilisé pour des buts éducationnels;
- modèle paléogéo(morpho)logique;
- support écologique dans le cas où il représente le seul habitat d'une espèce animale ou plante.

Les géomorphosites se distinguent donc des autres formes du relief par les valeurs qui leur sont attribuées. Dans ce sens, ils peuvent constituer une partie plus ou moins grande d'un paysage géomorphologique, dépendant de leur

taille. Les valeurs associées à un géomorphosite et les critères pour les apprécier sont donc les mêmes que ceux mis en évidence plus haut pour les paysages géomorphologiques ((Fontana, 2008):38).

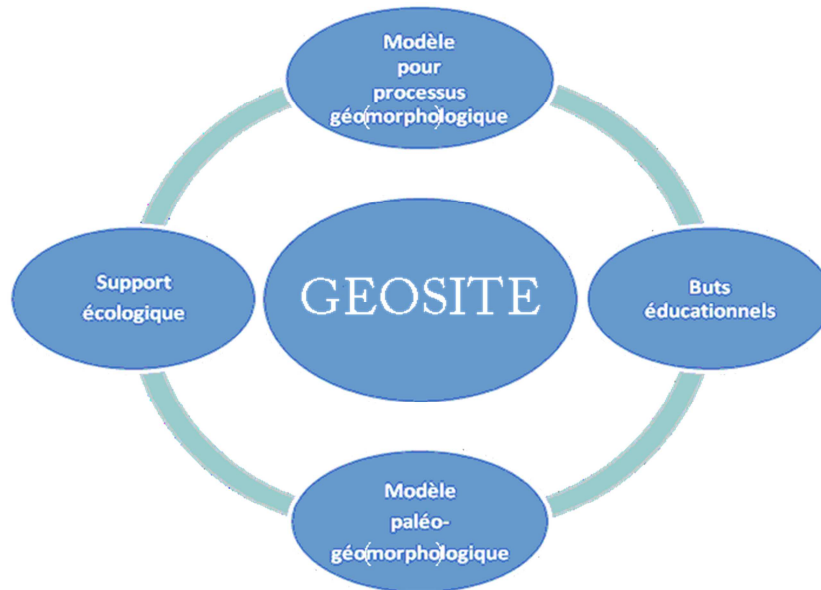


Fig 2. Le schéma présentant les valeurs principales d'un géosite

3. La région d'étude

Le Défilé du Danube se situe dans le sud-ouest du Roumanie (Fig. 3). Le défilé crée par le Danube ici est le plus longue d'Europe, 135 km de longueur. Notre zone d'étude comprend environ 115 000 hectares qui sont distribués sur deux départements nationaux: Caraș-Severin et Mehedinți (la micro-région nationale de sud-ouest). La limite du sud est constituée par le Danube lui-même qui fait la frontière de la Roumanie avec la Serbie. La limite du nord est représentée par les plus hauts sommets des montagnes.

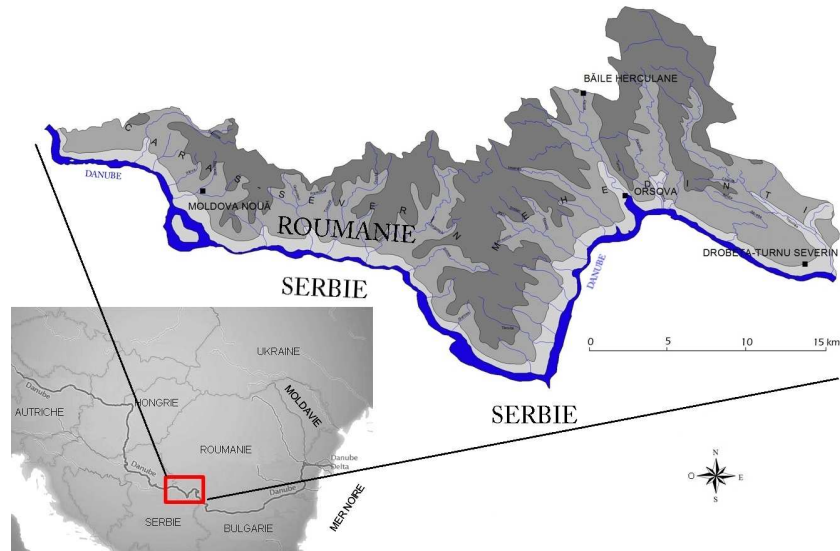


Fig. 3. La localisation des gorges du Danube en Roumanie. Une région très importante du point de vue géologique et géomorphologique du sud-ouest européen

Concernant le relief, la région correspond aux montagnes d'Almăj et de Locva, les deux systèmes montagneux étant nommés par V. Mihăilescu (Mihăilescu, 1963) les *Carpates des Portes de Fer*, la partie du sud des Carpathes Occidentales, c'est-à-dire les Montagnes de Banat. Il y a aussi la plaine de la vallée danubienne et le plateau de Mehedinți. Pour les limites d'ouest et d'est nous avons deux localités: Baziaș (l'entrée du Danube en Roumanie) et, respectivement, Drobeta Turnu-Severin à la sortie du Danube du défilé. On doit préciser que notre terrain d'étude correspond en grande partie au parc naturel Portile de Fier.

4. Approche géo(morpho)logique

L'existence des roches calcaires, cristallins ou des formations sédimentaires peu dures, autrement dit la variété des éléments lithologiques, corroborée avec la présence des différentes failles tectoniques ont imprimé au relief des traits généraux particuliers. Dans ces circonstances, on peut séparer la vallée danubienne en plusieurs secteurs selon leurs caractéristiques morphographiques (Iancu, 1976, 1972).

De Baziaș à Pescari sur une distance de 35 km c'est une région de transition, encadrée entre deux grands unités structurales, le cristallin des montagnes de Locva sur le gauche du Danube et les monts Dobrianske Planina et Komolske Planina sur le droit du Danube (*Fig. 4*, section I). L'évolution morphologique de la vallée danubienne dans ce secteur est liée à l'existence d'un golf préquaternaire de tip péricarpatique (le golf de Moldova Nouă). Dans ce secteur la vallée a une largeur maximale de 1500 m. La pente peu raide et l'apport des matériaux solides ont formé une série d'îles qui sont maintenant couvertes par les eaux du lac. La seule île qui a été suffisamment haute pour ne pas être couverte d'eaux c'est Moldova Veche (environ 4 km de longueur et 103 m altitude maximale en colline de Hunca).

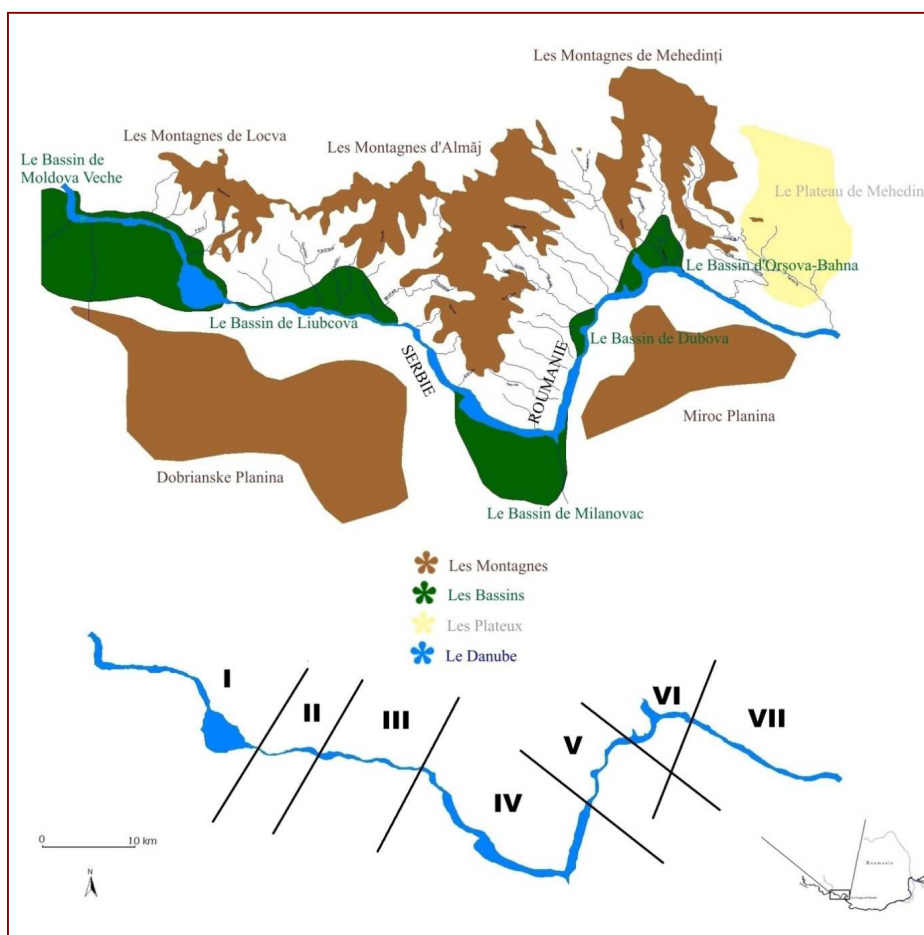


Fig.4. Les principales unités du relief autour de la vallée danubienne (au-dessus). Les sept secteurs de la vallée conformément avec leurs caractéristiques morphographiques (en bas)

De Pescari à la confluence avec la rivière Camenița, la vallée danubienne présente des versants très raides, qui peuvent atteindre 90^0 (II). C'est la section où commencent les gorges du Danube proprement dit. Sur ses 15 km de longueur, la vallée est sculptée en calcaires jurassiques et crétacés, en granites de Sichevița et en schistes cristallins et elle forme la première section des gorges.

Entre Camenița et Greben le Danube traverse la dépression postectonique Liubcova ou Sichevița (18 km de longueur) formée sur formations miocènes où la vallée présente un profil asymétrique (III). Puis il y a la deuxième section des gorges entre Berzasca et Greben sculptés en calcaires jurassiques, marnes et marno-calcaires crétacés, conglomérats et grès permians. Les versants sont abrupts avec une hauteur de 450 m et la vallée a une largeur de 220 m. Nous avons ici des synclinales suspendus, des vallées subséquentes, conséquentes et transversales. L'amplitude du relief est grande, aspect qui détermine l'apparition des mouvements de terrain avec des conséquences dans l'activité humaine et l'écosystème.

La vallée danubienne devient puis large parce qu'elle entre dans le bassin Milanovac (après le nom de la ville serbe qui se situe ici, Donji Milanovac – IV). Dans cette dépression développée sur la rive droite du fleuve, le Danube fait une grande courbe et sa vallée atteint 1800 m de largeur. La vallée est sculptée dans des roches avec structure et lithologie différents, calcaires jurassiques, mollasse d'argiles et de grès permians, calcaires triasiques (Fig. 5). On peut trouver ici des cuestas, des surfaces structurales, des vallées subséquentes.

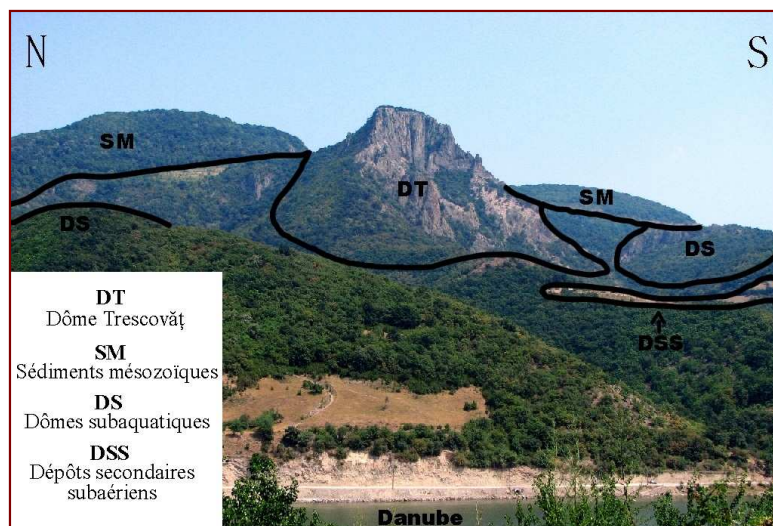


Fig. 5. Le dôme volcanique Trescovăț. L'un des plus importants géosites des Gorges du Danube en Roumanie

La plus spectaculaire section du Danube est celle comprise entre la vallée d'Iuți et la dépression Orșova-Bahna (*Fig. 6*). Ce secteur est connu par le nom de Cazanes et il comprend les gorges les plus beaux de tout le cours du Danube. Les Cazanes qui sont compris entre Plavișevița et Ogradena sont divisés en deux parties par le bassin de Dubova (Sencu, 1967; Sencu, Zăvoianu, 1969). Ainsi, il s'agit des deux régions de défilé séparés par une dépression remplie des eaux du barrage, formant un golf pittoresque. Les Grands Cazanes (*Figure 7*) sont encadrés entre les massifs de Ciucaru Mare (318 m, sur la rive roumaine) et Veliki Strbac (768 m, sur la rive serbe); leur longueur est de 3,8 km et la largeur ne dépasse pas 200 m. Le massif Ciucaru Mare, calcaire, présente vers le fleuve un versant très raide (presque 90^0) et son toit est représenté par un plateau avec des microformes calcaires (dolines, uvalas, passerelles suspendues). Si sur la rive serbe le calcaire crétacé est continu de Veliki Strbac jusqu'à Mali Strbac, sur la rive roumaine le bassin miocène de Dubova avec l'altitude moyenne de 60 m s'interpose dans la masse rocheuse calcaire. Ce bassin n'est pas un très grand: 2,3 km de longueur et 1,2 km de largeur. En aval, entre les crêtes de Ciucaru Mic (313 m) et Mali Strbac, sont les Petits Cazanes – défilé qui continue les traits généraux précédents: des versants raides et étroits.

Après ces gorges du fleuve, la vallée s'élargit encore une fois grâce à la présence du bassin d'Orșova-Bahna, qui est modelé en roches plus friables (*Fig. 4*, section VI). A la confluence avec la vallée de Cerna, après la construction du barrage, s'est développé un golf spectaculaire à pied de nouvelle ville Orșova. Avant de la construction du barrage, la vallée danubienne disposait ici d'une île habitée par turcs (un vrai coin oriental), Ada Kaleh, formé prépondérante des matériaux transportés par Cerna. La rive peu raide a permis la construction de nombreuses maisons de vacances, notamment dans les dernières deux décennies.

De Bahna à Turnu-Severin, la vallée danubienne devient étroite pour la dernière fois (VII). Il s'agit d'une section de 9 km entre Vârciorova et Gura Văii. Les versants sont raides et bien couverts par les forêts. Le Danube a creusé dans le cristallin de Sebeș et dans les formations crétacées autochtones de Severin, spécifiques pour les montagnes et plateaux de Mehedinți. La pente des versants varient entre 3 et 30^0 (Grecu, Carablașă *et al.*, 2011).

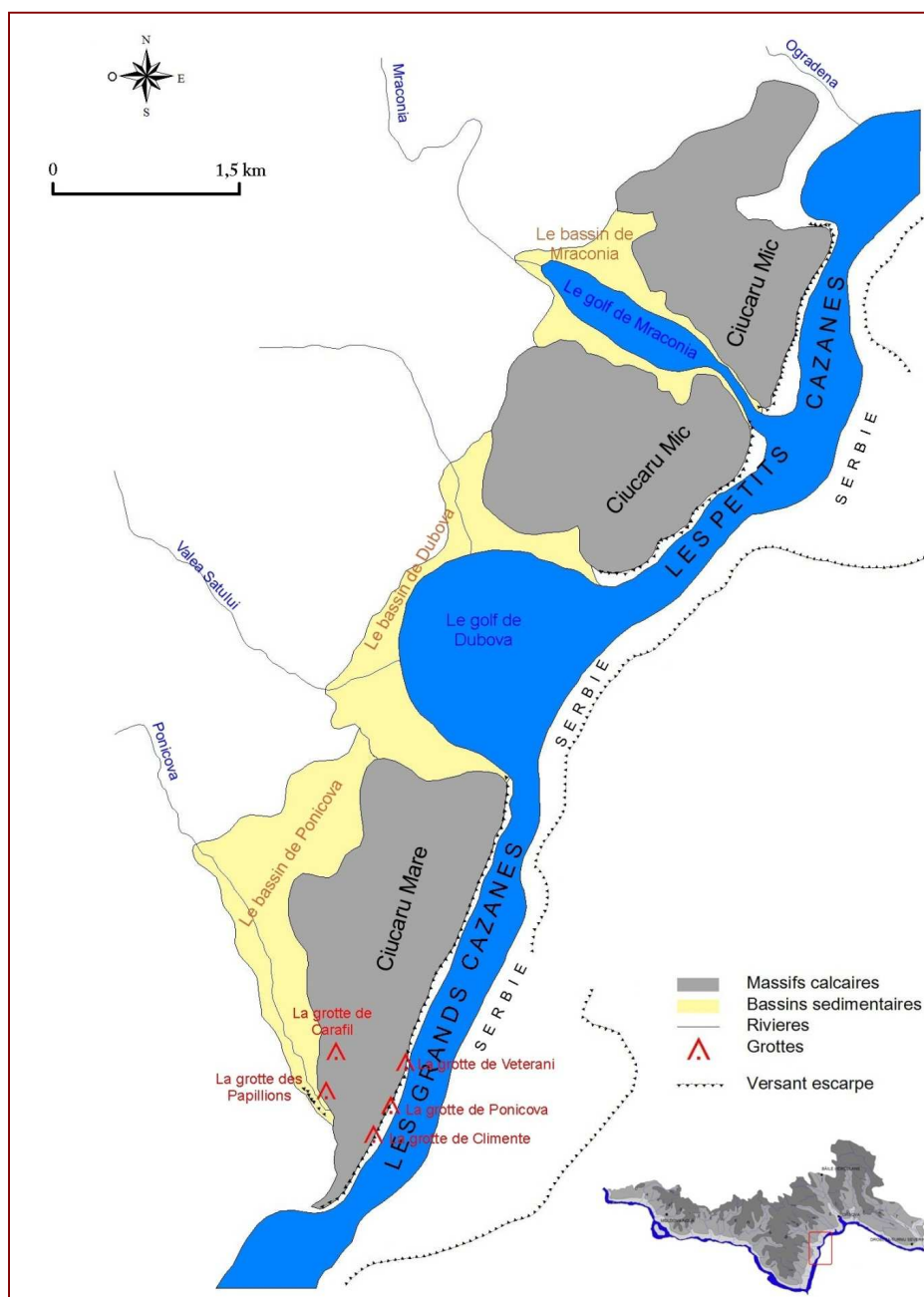


Fig. 6. La section la plus spectaculaire et la plus intéressante des Georges du Danube en Roumanie : les Grands et les Petits Cazanes



Fig. 7. Les Gorges du Danube – l'entrée du Danube dans la vallée des Grands Cazans

5. Discussions

Y a-t-il donc des portions de terre qui possèdent une signification particulière du point de vue scientifique, culturel, économique etc. dans la région des Gorges du Danube en Roumanie? Nous avons décrit ci-dessus les principales caractéristiques géologiques et géomorphologiques de notre région. Il est évident que la région possède une diversité élevée concernant les différentes classes des roches et il est aussi évident que sa géomorphologie et de loin très compliquée.

Partant de la définition scientifique et culturelle de la notion de *géosite* nous pouvons constater que la géologie et la géomorphologie donnent naissances aux processus et aux formes géo(morpho)logiques. Ces processus et formes peuvent être considérés comme ressources touristiques et donc comme attractivités touristiques. Tout cela va créer le tourisme. Si la région des Gorges du Danube possède une grande diversité géologique, automatiquement elle possède des processus et des formes géologiques très intéressantes. *Ces processus et formés peuvent être valorisés dans l'industrie de tourisme seulement si ils sont considérés géosites.*

Le principal enjeu d'une telle recherche consiste en trouver les plus importantes éléments géologiques et géomorphologiques qui caractérisent notre

région. Pour faire cela, les entretiens avec les spécialistes en différents champs scientifiques sont obligatoires (géographes, géologues, géomorphologues, hydrologues, paléontologues, biogéographie, anthropique etc.). L'importance scientifique, esthétique, économique etc. des géosites est le résultat d'une évaluation. Cette évaluation se fait avec les spécialistes de chaque catégorie des géosites (puisque seulement les spécialistes peuvent confirmer la valeur scientifique des géosites). Un autre enjeu d'une telle recherche représente la portée et les limites de cette approche. Il est évident qu'une telle approche contient beaucoup des limites. Si ce travail académique ne visait pas, du moins dans un premier temps, d'application concrète, il est toutefois nécessaire de se questionner sur sa réelle utilité. Est-ce un instrument de travail capable d'assurer une meilleure prise en compte de la géomorphologie dans les différents domaines d'application identifiés dans la problématique?

Nous présentons maintenant quelques points sur lesquels nous devons réfléchir.

- ***Mettre en plein lumière les éléments géologiques et géomorphologiques les plus importants.*** C'est un aspect majeur d'une telle étude. Bien que des recherches sur ce territoire existent déjà, nous avons considéré que le patrimoine géologique et géomorphologique de cette région n'est pas du tout mis en lumière comme il faut. Et pour faire cela nous devons utiliser une méthodologie toute nouvelle qui permettra de construire une très belle base de données avec les plus représentatifs géosites de cette région. Cette base de données peut être utilisée par les autorités locales en vue d'implémenter différents projets du développement.
- ***Aménagement du territoire.*** La portée de notre inventaire sera certainement limitée dans ce domaine. Il recense trop peu de formes géomorphologiques pour être réellement utilisable dans ce domaine ; dans le cas de formes fréquentes, nous vont retenir que les plus représentatives. Une base de données pour l'aménagement du territoire devrait résulter d'un inventaire plus exhaustif (*Fig. 8*).
- ***Protection du patrimoine géomorphologique.*** Notre approche ne va pas être spécifiquement orientée sur cet aspect ; une rubrique de la fiche d'évaluation va concerner les éventuelles dégradations du géotope et les mesures de protection souhaitables, à titre informel (Maillard, 2009). Nous posons à nouveau le même constat que ci-dessus quant aux objets inventoriés.
- ***Valorisation géotouristique.*** En outre de la création d'une base de données et de mettre en plein lumière les géosites des Defilee du Danube, la valorisation touristique est un aspect sur lequel devons décider de mettre l'accent dans notre problématique (*Fig. 8*). Nous devons puis proposer une analyse des géosites aussi du point de vue touristique. Puis nous proposerons quelques projets de valorisation; les résultats de notre inventaire laissent entrevoir de bonnes possibilités de ce point de vue.

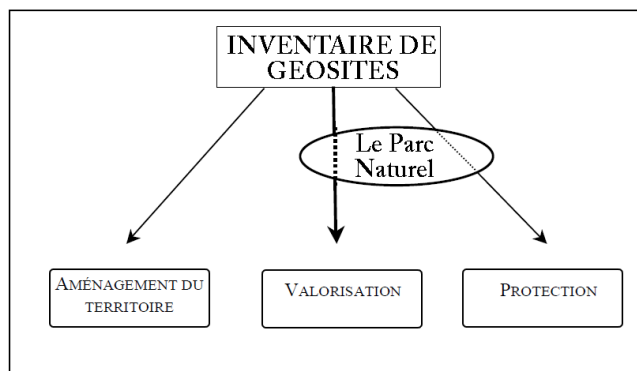


Fig. 8. Les applications des bases de données de géosites

6. Conclusions

Les observations faites concernant la liaison entre les géosites et le tourisme ont montrés une très forte corrélation (Iosif, 2012; Iosif, Nistor, 2012). Les analyses suivantes doivent viser deux aspects majeurs: **(1)** Il est nécessaire de faire, dans la région des Portes de Fer, une rigoureuse recherche sur ses géosites. Le développement de cette région peut être lié à la connaissance de ces géosites par l'essor de tourisme. Après le collapse de l'industrie minière, le tourisme est devenu la plus importante alternative économique de cette région. **(2)** Mais pour cela, il faut que nous connaissions et nous mettons en valeur le patrimoine géologique et géomorphologique. Reynard *et al.* (Reynard, Holzmann *et al.*, 2001) parle de *mieux connaître pour mieux protéger*, qui amène à la question de l'absence de culture géoscientifique auprès du grand public et de professionnels d'autres domaines, le tourisme en particulier. Il en résulte une faible sensibilité générale à la protection du patrimoine géomorphologique qu'il faut opposer au constat de la toujours plus grande sensibilité à la protection de la biosphère (faune, végétation). Il faut tout d'abord multiplier les possibilités d'éducation aux géosciences dans des cercles non géoscientifiques, touristiques en particulier.

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THE EVOLUTION ACCOMMODATION AND TREATMENT FACILITIES IN VÂLCEA SUBCARPATHIANS' SPAS IN ANTICIPATION OF THE EU'S SINGLE MARKET

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Abstract

The economic importance of international level tourism has captured the attention of all responsible institutions. A series of measures aiming for the development of this sector were taken, and member countries were encouraged to do the same. In terms of SPA tourism, the recommended decisions to be made at European level are: involvement of the insurance companies for the development of SPA tourism, the use of SPA resorts, as well as using thermal treatments for the general public.

The presence in the Vâlcea Subcarpathians of a considerable number of hydrothermal sources has facilitated the emergence of SPA resorts on one hand, and on the other hand the development of this important segment of the regional economy.

This paper aims to highlight the importance and the potential of SPA tourism in this region, as well as the role of the above mentioned sources in the emergence and development of resorts. The author outlined, in the same time, the main shortcomings and opportunities of the capitalization of SPA tourism from Vâlcea Subcarpathians.

Keywords: SPAS, European market, tourism programs, spa treatment, Vâlcea Subcarpathians

1. Introduction

The Vâlci Subcarpathians are located in the southern part of Romania, on both sides of the Olt River. At the same time, they are a subdivision of the Getici Subcarpathians, representing about 1/3 of their area. Lucian Badea (2008), a known researcher of the chosen study area, establishes as the west and east limits the Oltețului Valley and the Topolog Valley, also specifying that "Vâlci Subcarpathians represent 28.8% of the area of the Getici Subcarpathians or the 8,24% of the overall Subcarpathians unit."

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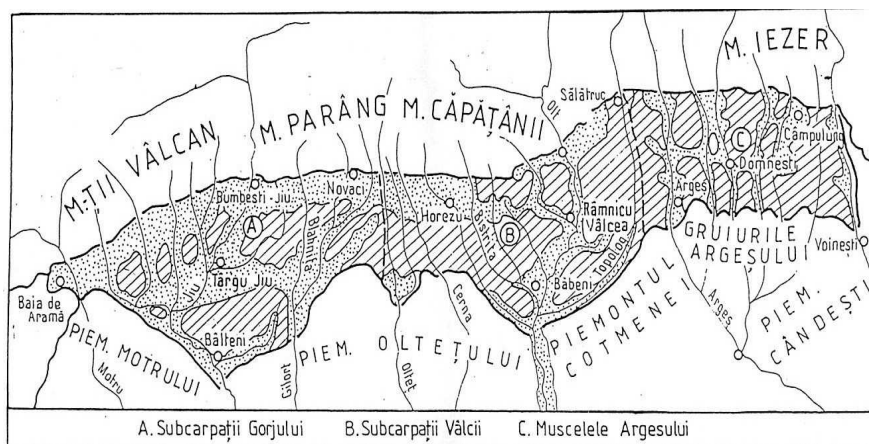


Fig. 1. Delimitation of the Vâlcea Subcarpathians,
subdivision of the Getici Subcarpathians

Source: Badea L., 2008

The highest Subcarpathians formations are located in the north eastern part, where the Horez – Olănești – Muereasca – Călimănești – Berislăvești - Sălătrucu depressions mark the delineation of the two existing areas, the mountain area and the Subcarpathians. Thus, the southern boundary is formed by the hills (monoclinal structure) consisting of sandstone, marl, clay. Encountered at an altitude of about 650-800m, the monoclinal structured hills come into contact with the mountain peaks to the north, and towards the south a folded structure characterised by the development of the small depressions in soft rocks (such depression as: Govora, Ocnele Mari) is encountered. These depressions have important water resources, provided by a dense network, as well as various discontinuous groundwater waters, with various mineral qualities imposed by the petrographic composition. Last but not least, we mustn't forget about the lakes, most of them artificial, situated on the Olt River.

The position of the Vâlcea Subcarpathians, the geological substrates, the rich relief, as well as the favourable climate make for reference points in the appearance of hydro-mineral resources.

2. The balnear and climatic tourism - economic activity of strategic national and international importance

Tourism is one of the most important components of international trade. Through its multiplying effect, it gives rise to other economic sectors

(construction, transport, food industry, services, etc.) whose development depends on this activity.

The specialized literature frequently uses various terminologies and concepts concerning tourism. A clear definition of the concept is given by Leville - Nizerolle in 1938: "Tourism is an assembly from non lucrative human activities, outside the area of residence" (Câdea Melinda, Simon Tamara, 2006).

The European Union attaches a great importance to tourism, because it contributes substantially to the achievement of its economic and social objectives.

2.1.SPA tourism - important element within the European services market

At European level, tourism is considered to be a very important branch, contributing to the achievement of its economic and social objectives. In a speech given at the Economic and Social Committee, the direction of Tourism of the Eu1 (also known as the Directorate-General XXIII), the members of the EU, argued that tourism constitutes, together with all its components, an opportunity to create new jobs. Thus, it was proposed the improvement of the quality of services offered by tourism, its sustainable development, and better protection of tourists' interests.

Given the importance of tourism for the EU countries, a series of resolutions, as well as documents and directives relating to this activity were adopted. There were provided a range of measures that take into account a series of structured aspects in different domains. Some of these measures relate to quality standards in the field of hospitality services in Europe, medical tourism, tourism development, etc.

In terms of medical tourism and its promotion, at European level one aim is to revive this sector through: the use of all available community programmes (including the second programme of Community action in the field of health); involving the insurance firms in order to sustain this sector; adopting specific community directives aimed at optimizing the use of SPA resorts, as well as improving and the role of medical tourism and thermal treatments, relating to the existing tourism resources (Clift S., Pag J., 1996).

Analysis of the international tourism phenomenon was carried out by a multiple countries attracting the attention of authorities. This is because SPAS from Europe face a number of patients who are willing to pay fabulous amounts of money, for proper treatment for the disease they suffer.

The spa products (known in modern terms as balneomedical) have numerous natural cure factors, and are used for a diversified range of procedures or treatments, carried out in SPA resorts (Rouzade G., 1998).

Also for spa tourism a wide variety of concepts are used. French specialists use the notion of balneotherapy "representing the use of water, for

therapeutic purposes (not of mineral, thermal or seawater)" (Rouzade G., 1998). The term health tourism is also used. The meaning of the concept, is diversified, and ranges from "the insurance of health, using the country's natural resources, in particularly mineral waters and climate" (IUOTO, 1983) to "spending the free time, away from home, and one of the objectives is to improve one's state of health" (Clift S., Pag J., 1996)

2.2.Considerations on national SPA and climatic tourism

As far as the terms of climatic and SPA tourism go, opinions are divided. Nationally, the SPA-thermal cures didn't have a tourism purposes, instead this represented particular therapy done under medical control. In time, the locations with thermal and mineral resources were located either within the city or in its surroundings. There have included part of the population that practiced this type of tourism, thus becoming a resort treatment.

The first forms of using the therapeutic properties of the natural cure factors are related to the baths in thermal waters. In the Greco-Roman period, some learned and healing people have used thermo-mineral waters in treating diseases. Also, the first who praised the qualities of bathing in thermal waters was Homer. Then, Hippocrates, considered to be the founder of natural therapy, has proved to be a big user of thermo-mineral waters in healing various diseases. Due to this fact, the Greeks believed that the gods have given therapeutic powers of these waters. Near the hot water springs a temple was built in Greece. The same thing happened in Northern Italy. Thus, some gods have received names such as Burbo - mineral springs or Eshlibious - God of health (Routh, 1996).

In 1999, Erdeli G. and colleagues argued that tourism is "a type of tourism practiced in SPA resort, for health related purposes, specialized for the using hydromineral resources, mofetes etc. and having as an ultimate goal the prevention or amelioration or treatment of some diseases".

Nicolae Teleki, Laviniu Munteanu and Sorin Bibicioiu (2004) were also of the opinion that, a cure of health "covers a number of other titles used in our country and in other countries - spa tourism, health tourism, primary prophylactic treatment". The result is that in order for spa tourism to exist, there must first be mineral waters, and then a suitable material base must exist.

The forming of mineral waters has been the object of many studies, since the 18th century. The Institute of Physical Medicine, Rehabilitation, and SPA undertook a detailed study about each resource of mineral water and sludge in Romania. The results were collected in four volumes entitled "The Mineral Waters and sapropelic mud of Romania" (Apele minerale...1961-1973).

The most comprehensive term, is, the SPA therapy, which means "the use of the natural complex factors: climate, SPA factors (mineral waters, salt lakes, saline, sapropelic mud, therapeutic gases, beaches), belonging to a resort or spa

towns, with a prophylactic, curative or medical rehabilitation purpose" (Berlescu Elena, 1982).

2.3. The Vâlcea Subcarpathians hydromineral potential

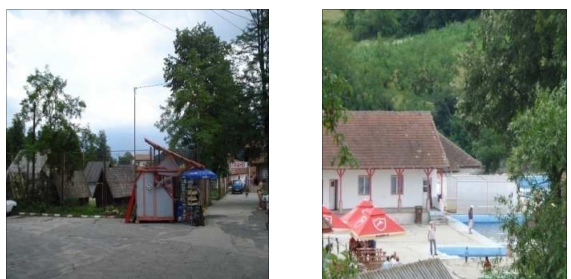
It is known about mineral waters in the studied region, that, a few manuscripts from ancient times have been found, according to which these sources have been known and considered healing (among localities include Călimănești). However, the period of certification is the dacian-roman period, when roman soldiers came here, in order to receive treatment along with the local population, when the first health settlements appeared. Epigraphic materials discovered at Călimănești talk about the building of a Fort in Poiana Bivolari, although researchers have reason to assert that, the Romans had special facilities for the use of mineral waters on both sides of the Valley. The entire development and planning from Cozia and Olănești, is linked to the early nineteenth century, respectively 1887 (for Călimănești) and 1830 (in Olănești the residents used the waters for healing some diseases such as scabies), and in 1833 the first entries related to Ocnele Mari appear when it talks about the benefits of salt lakes.

About Băile Govora, it is known that it began to impose itself only in the last decades of the 19th century, when the sulphurous waters of Hința Valley, began to be exploited and transported to the Govora Monastery of the entrepreneur Gheorghe Ciurea (1876). When he dug a well, the so called "burning water" (the name given to oil), and "salt water" came out of the earth, which at first could not be used. The works done after that for oil exploitation, brought to light the qualities of the salted water, such as sludge and the mud, which military doctor I. Zorileanu recommended for treating rheumatism. In 1878 the chlorine iodine waters are discovered. The first establishment for treatment appeared in the year 1887 and it had 29 cabins for warm baths.

8 km from the city of Râmnicu Vâlcea, the Ocnele Mari resort is found, known since the Neolithic period and mentioned in documented in the year 1408, restated as city in 1960, after the year 1948 when it had been transformed into a municipality. Like many other resorts in our country, Ocnele Mari - Ocnița meets all conditions, being recognized the first time as the resort in 11 June 1948.



a. Thermal pools of Ocnele Mari



b. Ocnița – Camping and entrance to the thermal pools

Fig. 2. Ocnele Mari – Ocnița resort (Foto: Roangheș Ana)

"In the decades at the turn of the eighteenth century and nineteenth century salt water from the salt massifs of Oltenia was also used by the locals. Water accumulated in abandoned mining pits practiced in ancient times in Ocnele Mari as well as in the mines ... that were collapsed ... served not only cooking but also for healing." (Pricăjan, 1999, p.22). Due to the chlorine and iodine waters, supplemented by sapropelic mud that represented a source of health through their therapeutic properties, around the year 1812, the first establishment of treatment was opened, using salt water from the mouth of deep Balta Roșie of 120m deep. Salt from Ocnele Mari is capitalized industrially, at the soda plant from Govora, located in the immediate vicinity, and receiving saline solution through a saleduct from Ocnița.

Towards Pietreni, one may find the SPAs from Costești, a spa resort of seasonal local interest, which is situated at 5 km from Horezu village and enjoys a climate of the hills sedative-indifferent. Mineral waters are rich in sulphur and iodine. Here a summer stationary is located, with a capacity of 50 seats. Nationalized in the early '50s, the Costești baths received thousands of people, for about 30 years, mostly peasants from neighbouring villages. The base was made up of three mineral springs; considered by specialists as being some of the

best in the country for the treatment of some disorders relating to urinary disorders, hepatobiliary and rheumatic. The mineral bath from Costești belongs to the Sacerdoțeanu family who in the past controlled a swarm - like organism for those seeking treatment. Currently, the mineral sources are no longer operated, with only three sulphurous mineral water springs (they are arranged) being functional. For their reinstatement in the local SPA circuit, it is necessary to rebuild the abstraction, rearrange the two buvete for internal cure and build a database of treatment with minimal facilities.

3. Accommodation in spas of the Vâlcea Subcarpathians

3.1. The accommodation structures in the spa resorts of the Vâlcea Subcarpathians

In analyzing the share covered by *accommodation units* in SPA tourism in Vâlcea Subcarpathians, one can notice a significant increase in values, after the year 2000, from 54 units (13.5%), to 89 units (23.3%), in the year 2012. The evolution of these types of accommodation in SPAs resorts from Vâlcea Subcarpathians, during the 2000 - 2011 periods highlights the detachment of Călimănești - Căciulata and Băile Olănești resorts, compared to Băile Govora. The least accommodation units are in Ocnele Mari and especially the village Costești, where there have been made investments in recent years.

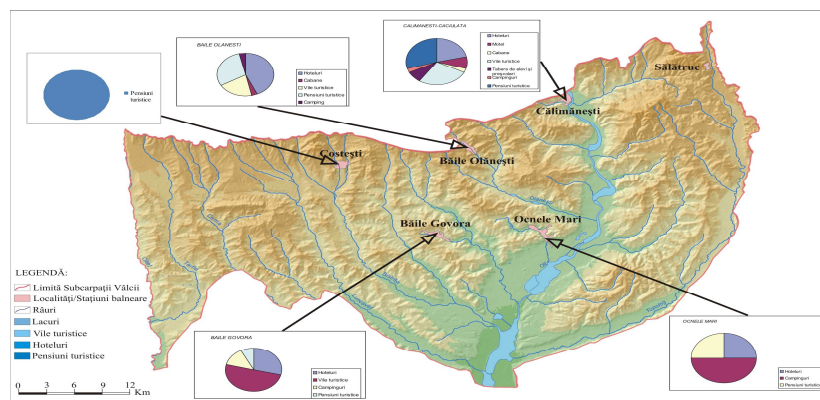


Fig.3. The accommodation units in Vâlcea Subcarpathians (2011)

Source: Ana Roangheș, 2012

In 2008, the curve registers a growth, in the case of all types of tourism accommodation structures, except for tourist huts, where a slight drop can be noticed. In terms of percentages, for each type of

accommodation, the highest values are held by hotels and hostels, with 28.1% 30.3%, respectively (see Fig. 4.).

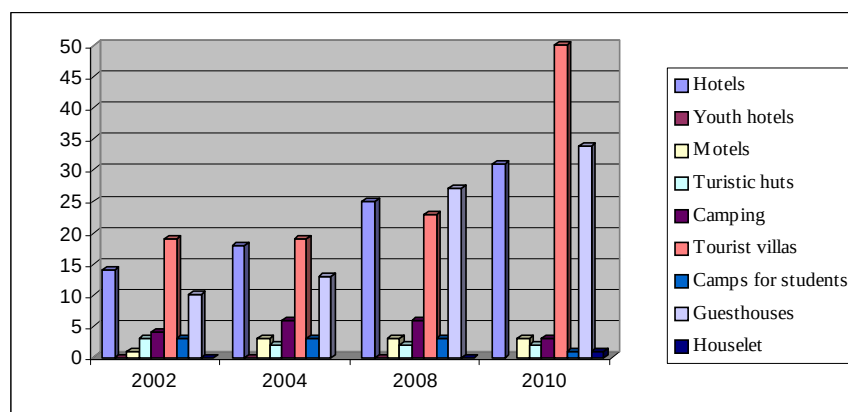


Fig.4. The main types of accommodation structures in the Vâlcea Subcarpathians

Source: data processed from DJSV

Also frequented are the tourism villas that hold approximately 25.8% of the total number of units at the level of the SPA resorts. The lowest shares are recorded by tourism chalets (2.3%), and motels, inns and camps for students (with 3.4%), and last, but not least, camping units with 6.7% (see Fig. 5.).

The analysis of the structures accommodations of the Subcarpathians Vâlci highlights the diversity of existing types in the region (most types in Calimanesti-Caciulata, and the fewest in Ocnele Mari). The village Costești differentiates for the lack of accommodation units, in 2008 one rural guesthouse existed here.

The most requested form of accommodation, resulting from the analysis the figures recorded in the statistics, are the farmhouses. In the year 2008 and with a share of 30.1% urban tourism pensions ranks 1 in the classification of type structures. In the analyzed region, the values of these types of structures (guesthouses) increased considerably in 2011 (34 units) compared to the year 2000 when there were only 22 units. Exceptionally, the village Costești recorded an increase in 2010, regarding the number of accommodation structures like guesthouses to 4 units, compared to a single unit during the period 2006-2008.

The lowest shares are recorded by rural guesthouse, motels, tourist cabins, camps, school camps and mobile home, all of these representing together only 14.1 percent of the total housing units.

There is a slight tendency for investment in the area. Already in the year 2011 3 urban pensions were opened. And the Ocnele Mari-Ocnița resort has an important number of structures (here 2 camping sites and 2 hostels functioned in 2008, and in 2011 1 villa, 1 campsite and 2 Hostels).

The analysis of the types of structures shows a particularly high importance, but occupying only a second place from this region, is the accommodation represented by hotels. The 2000-2011 period, marks an upward curve of hotel type structures for this region, with values increasing from 11 units in the year 2000 to 32 units in the year 2011. In addition to accommodation, function whose importance is reflected in its facilities and services, the hotels in the area adapted to the types of tourism practiced in their sphere of influence.

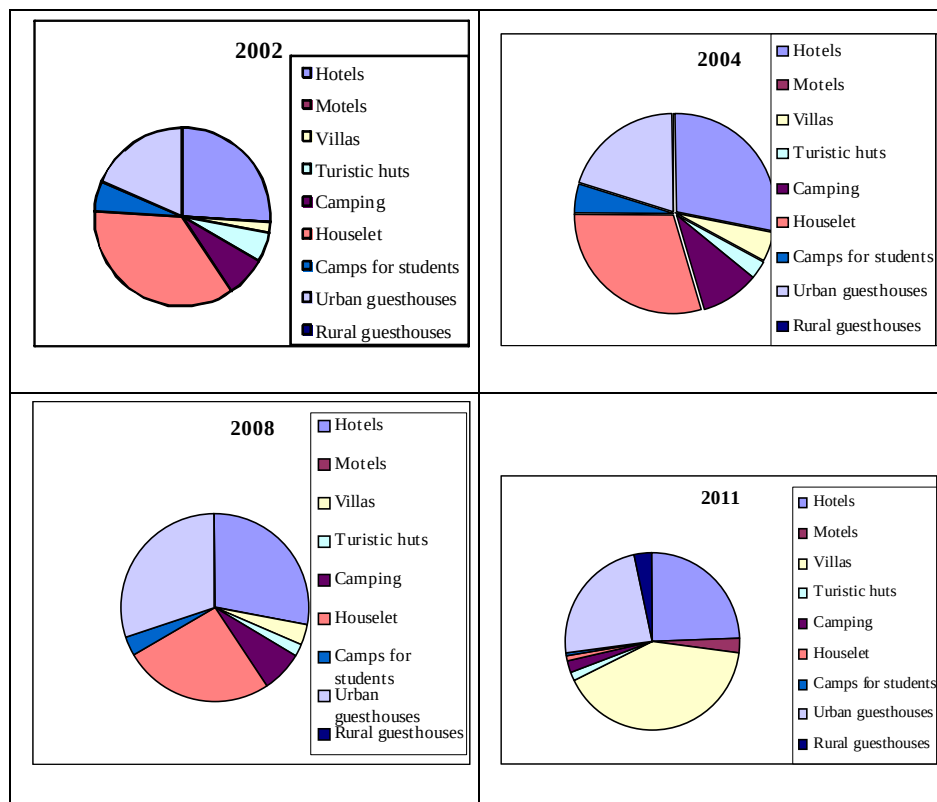


Fig. 5. The dynamic evolution of the Vâlcea Subcarpathians accommodation (2002, 2004, 2008, 2011)
Source: data processed from DJSV

For example, in the case of business tourism and cultural assets in the case of Vâlcea Subcarpathians, these bases are equipped with conference and projections rooms and exhibition spaces or for scientific meetings. In the spas

resorts (Calimănești, Băile Olănești and Băile Govora), almost all hotels offer entertainment services by developing specific infrastructures (swimming pools, tennis courts, bowling alleys, discos, bars). In the case of the large hotels, there are auxiliary facilities including services such as postal and telecommunications, foreign exchange, trade in traditional products etc.

Tourist hotel-type structures are present in four of the five SPAs and their evolution is differentiated at a territorial level in the sense that most of the accommodation units are broken down as follows: Băile Olănești (58%), Călimănești - Căciulata (29%), Băile Govora (13%), except for Ocnele Mari, where starting from the year 2008 there is no longer such a structure. As a whole, in the year 2010, the number of hotel units is 31 units (representing 24.8% of total accommodation units at the level of the whole area), compared to the year 2008 with 26.8% (25 units).

The detailed analysis carried out in the studied area, for 2011, highlights the excessively increasing high number of tourist villas for the region (50 units), which makes for villas occupy the first place in tourists preference that came to spend their holidays in this region. They add to 24.7% of the total accommodation units in the region in 2008, and representing approximately 23 units, that reach 50 units in 2011 (40%).

The high percentage of tourism villas and guesthouses, in the SPA area, is due to the low investment costs and expenditure, and on the other hand low costs compared to hotels. The fewest units are represented by the tourism camps for students and service areas, with 1 unit located in Călimănești, chalets - 2 units - one in each of the towns of Băile Olănești, Călimănești and motels - 3 units are encountered in the perimeter of Călimănești city, and rural tourism accommodation with 4 units, 2 on the territory of Călimănești, 1 unit in Băile Olănești and 1 unit in Costești.

3.2. Accommodation capacity (seats) from the SPA resort in Vâlci Subcarpathians

Accommodation capacity (number of seats) is also an important element in determining the tourist flows in SPAs. The statistics highlight the positive evolution, with fluctuations from year to year, the highest values registering in 2003, when the number of seats in accommodation unit was 7271. The largest number of accommodations in the region under study, is offered in Călimănești - Căciulata, with 3299 accommodation places, while the lowest values are found in the Ocnele Mari and Costești resorts, with 257 seats, 20 seats (see Fig.6.).

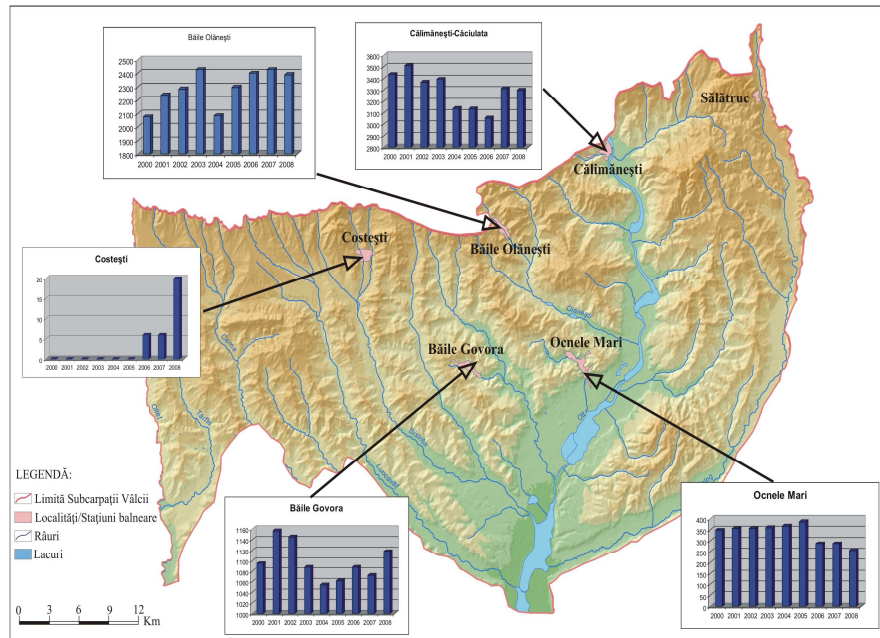


Fig. 6. Evolution of the accommodation capacity (number of seats) in spas in Subcarpathians Vâlcei (2000-2008)

Source: Roangheș Ana, 2012

Analysis of the accommodation capacity (number of seats) for each type of structures for each resort highlights predominance of hotels in most of the resorts. In order to enhance the tourism activity, in 2008 in this region, an analysis was made, which shows that the number of accommodation places from hotels, prevails. Thus, the largest number of seats in hotels recorded in Călimănești - Căciulata (with 2445), although the number of hotels is lower than in Băile Olănești (13 hotels with a capacity amounting to 1871). Băile Govora resort holds 1118 places from which 814 seats shall be distributed in the five existing hotel units. They serve, as a priority, business travellers, as well as tourists staying for other events. From this point of view, the seasonally curve is increasingly diminished and the accommodation places from the Vâlcea Subcarpathians are occupied almost all year round.

The evolution of the existing *accommodation capacity* (number to seats) for each locality, shows a profile similar to the region. Most resorts (Băile Olănești, Călimănești-Căciulata and Băile Govora) have a slightly rising profile; Oțele Mari has constant values and a pronounced decline registers in the Ocnița and Costești case. In order to be able to determine this evolution, the *variation index for the total accommodation capacity* was calculated, on the

basis of the annual values from each resort. When the value of this indicator is lower, the seasonality is stronger, and the tourism resort of that activity is less developed.

The values of this index, for the studied area, are very expressive. If we relate it for the year 2008 compared to the year 2000, it is surprising a positioning at the upper pole of Băile Olănești resorts (with an 115,12), Băile Govora (102,1) Călimănești Căciulata-and (95,98) and at the lowest pole the Costești with an index of 0. This is due both to the low development of existing mineral waters, as well as the lack of information regarding their usefulness.

Comparing the number of accommodation structures to existing accommodation capacity, at the level of Vâlcea Subcarpathians, in the period 2003-2008, it also has a variable evolution. If in the year 2003, the number of accommodation units was of 65, the curve is dropping, at the level of 2004 (with values of 64 units), followed by a significant increase of this indicator until 2008, when it comes to 86 units (increase due to the constant developments, of the number of accommodation units, from small guesthouses and tourist villas type).

4. The potential productivity of the hydro-mineral treatment of the Vâlcea Subcarpathians

Thus, in the analyzed area, there can be found 2 localities and 4 resorts that have a hydro-mineral potential. They are national interest tourist resorts, Băile Olănești, Băile Govora and Călimănești-Căciulata, and the tourist resorts of local interest Ocnele Mari-Ocnița, Costești and Sălătruc.

The hydro-mineral productivity potential of the bases from Vâlcii Subcarpathians

In SPA resorts of the Vâlcea Subcarpathians, use complex methods of treatment in treatment centers with facilities for balneotherapy, buvetes for crenotherapy, arrangements for climatic, hydro- and thermo installation, etc. according to each resort. It also provides facilities for hydro- and thermotherapy, etc., according to each resort separately. The research conducted in this region, can construct a map with their distribution in the Subcarpathians, both based on location, and types of mineral waters.

The bases of treatment play an important role alongside other tourism structures. Organised either within the accommodation structures, either separately in their own building, the bases of treatment offers a wide range of procedures. An important feature for tourism is travel motivation. The action area of SPA tourism is very wide, and it aims at: *prophylactic treatment* (is

designed for healthy and seemingly healthy people, with predisposal to sickness, from internal or external environment agents); *therapeutic treatment* used to treat a wide range of diseases with the help of natural factors; *healing recovery* used in the case of some forms of disease that causes the inability of the people to work.

The SPA treatment has developed and diversified in the past 20 years. Thus, the bases of treatment were equipped and upgraded with a new technique, and treatment takes place on scientific grounds, under the leadership and guidance of specialist medical staff. In the same time the accommodation services and food services increased. Also, it is expected that in the next few years tourism will take an increasingly higher amplitude.

The value of the mineral waters used for treating a wide range of diseases is well known, from cardiovascular, respiratory, digestive, and kidney metabolism, ENT, and up to the gynaecological diseases of the locomotive system. Harnessing the waters would not be complete if there would not be a number of facilities and installations, without which treatments could not be done, namely: installations for hot or cold baths (Băile Olănești, Băile Govora); installations for mud applications (Ocnele Mari); installations for electro and hydro therapy (Băile Olănești); facilities for physical therapy (Călimănești, Căciulata, Băile Govora); rooms of physical medical culture (Călimănești, Căciulata, Băile Olănești); open swimming pools with underground thermal mineral water for asthma, and swimming pools in salt pans (Ocnele Mari).

Sulphurous waters occupy smaller areas and are distributed on a wider variety of formations. They can be found in sedimentary deposits of different ages. With regard to sulphurous mineral waters, the ones from Băile Olănești and Călimănești - Căciulata have a distinctive character. These waters are accompanied by free gas, constituting of methane and its senior counterparts (approx. 70-97%) that present the characteristic of some oil gas, that rise to the surface. Also, the various degrees of dilution as well as their hydrochemical diversification are caused by mixing in different proportions, with other features from seeping water. In the Călimănești - Căciulata resort there are a large number of natural sources in exploitation. Izvorul Călimănești is situated at an altitude of 300 m, and its mineral water is chlorinated, weakly carbonated, sodium, calcium and magnesium.

The spas resorts have a variety of hydro-mineral sources, that are capitalized through a series of treatments applied, depending on the type of source (mineral or mud). Also they should have facilities for conducting investigations, medical analysis and diagnosis. The qualities of the mineral waters are used in internal straps, external cure, cures through aerosol inhalations, mineral water injections, and vaginal irrigation with mineral water (see fig. no.7.).

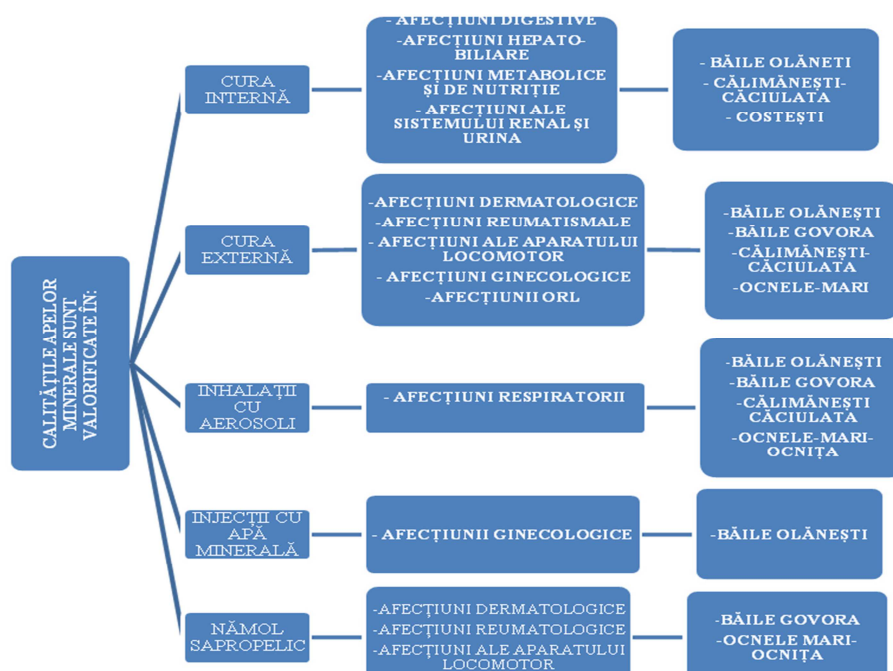


Fig. 7. The main categories of hydromineral sources and diseases treated in Vâlcea Subcarpathians

The illnesses what can be treated within the resorts are also diversified, and each condition can use some of mineral waters. The mineral waters from Vâlcea Subcarpathians, are of several types, and are spread across the territory of all spa resorts. Prof. Oncescu N. (1951) believes that hydrogen sulphide from sulphur waters from Getic Depression (Băile Olănești and Călimănești) arises thus: “pyrites andmarcasyte identified in crystalline blocks, reworked in the conglomerates and marl formations, alters in the oxidation zone, and passes into sulphates. They are reduced in the hydrocarbons (CH₄) which liberates slowly in bituminous marns”. We also need to recount the salt lakes, sulphurous waters, mineral waters, and thermo-sultanate waters.

5. Coordinates of the development of SPA tourism in Vâlcea Subcarpathians

For a good sustainable development, Vâlcea County Council undertakes certain programs, and develops strategies to help develop SPA tourism. Some

programs are funded with local money, and also by accessing European funds, which can lead to a sustained and steady development of this type of tourism, at regional level.

The tourism programmes in the SPA resorts of this region consist in offers intended on one hand to the tourists groups, and on the other side to individuals. The offer submitted by the hotels to tourist groups, is represented by a number of facilities, such as reduced prices to the number of persons, breakfast included, for certain events, gala dinner, and on request, they can assure a traditional music band dinners (for a negotiated price). Also, on request, excursions can be arranged or the hotel can arrange free access to meeting rooms with included sound system. The accommodation structures offer discounts for a range of events such as banquets, camps, conferences, tours, etc.

There are also offers in terms of health cures, offers that address a wide range of tourists. SPA offers includes programs such as: *Decada balneară* (SPA Decade), *Hai la băi* (Visit the SPAs), *Oferte pensionari* (Offer for the retirees), *Oferte salariați* (Offers for Employees), *Oferte sindicat* (Union Offers), etc. All these programs are designed to offer tourists a wide range of possibilities, and each can choose depending on the period in the year, the price and the services they want to receive.

These programs are carried out in almost all SPAs from Vâlci Subcarpathians, except the Costești locality. Thus, the offers include full accommodation and board, to prices differentiating according to each tourist resort. The most expensive period, is summer, between June 15th and September 15th.

6. Conclusions

The form of tourism is an important component of the Romanian tourism offer, with some features comparable to similar forms practiced in Europe or worldwide. SPA tourism can develop and can expand in the future, with increased interest of the tourists, Romanians and foreigners, for SPA tourism products. These perspectives will multiply with the development of new resorts and increased efforts to promote tourism.

Tourism SPAs became particularly important, even more so because spas in the Subcarpathians region analyzed, have a large variety of hydro-mineral sources, whose shape and composition is beneficial to a wide range of treatments. The advantages of the development of this branch are numerous, from the economic advantages (SPA tourism facilitating the emergence of new jobs and potentially an economic growth in the region), to the healing advantages (and there, are many tourists who wish to benefit from the treatment, but also, others which combine the job with the treatment-by arranging various events at the resort).

Enriched by a material which has gained momentum, but also upon the completion of SPA facilities, the resorts have been recognized both abroad and nationally. In order for the industry to develop to the standards imposed by the European resorts, it is necessary to bear in mind the regional plans, achieving a SWOT analysis. Thus, we will be able to assess the situation of all existing problems in the analyzed geographical area. On the other hand it mustn't be forgotten the importance of the infrastructure development and development of recreational services, which would favour the access to ski resorts, but also capturing a higher number of tourists.

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APPEL DE DETRESSE DES KSOURS DE LA SAOURA UN ESSAI DE REVALORISATION DU KSAR DE KENADSSA

BOUTABBA HYNDA, MILI MOHAMED¹

Abstract

Depuis l'aube des temps, la région de la Saoura était animée par un réseau d'établissements humains, édifiés selon le modèle urbanistique de la médina islamique et son habitat traditionnel en terre (Hani. A, 2002) : des hameaux collectifs fortifiés, connus sous le nom de Ksour qui signifient palais. Depuis La colonisation française en Algérie, de nouvelles formes urbaines, leurs ont été juxtaposées. Un « habitat extra-muros » inspiré de la ville occidentale qui a fini par leur soustraire leurs atouts socio-économiques, ce qui a conduit à une dévalorisation et la décadence d'un riche patrimoine architectural et urbain

Le présent papier est la synthèse d'un projet d'étude². Il illustre la richesse historique, religieuse, architecturale et urbanistique du Ksar Kénadssa et les différents enjeux de sa mise en valeur. Il dresse un bilan de dégradation physique et de dévalorisation fonctionnelle et socio-économique de cette entité urbaine et son habitat historique. In fine, il expose une action de réhabilitation, que nous avons entreprise, en essayant ainsi de dessiner les contours d'une stratégie intégrée de réhabilitation et de mise en valeur (Ouageni. Y, 2008).

Le but de cette recherche est de sensibiliser l'opinion publique sur l'urgence de l'établissement d'un plan de valorisation du Ksar servant d'outil de développement de Kenadssa.

Mots-clés: Patrimoine urbain et architectural, Ksour, diagnostique, revalorisation, la Saoura, Kénadssa, Algérie.

1. Introduction

Connue par sa grande superficie et une diversité extraordinaire de son patrimoine urbain et architectural, l'Algérie souffre depuis la décennie des années 1990, suite au désordre politique; d'une dégradation effrénée de ses établissements humains ancestraux. En effet, les Ksour sont aujourd'hui livrés, à travers tout le pays, à un processus de dégradation inéluctable.

La région de La Saoura, l'une des prestigieuses oasis sahariennes de l'Afrique du Nord, regorge de potentialités patrimoniales et archéologiques

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d'importance nationale et universelle. Au cœur même de cette splendide région, se dresse la commune de Kénadssa qui dispose d'un patrimoine architectural et urbanistique Ksourien sans pareille. Constituant, jadis un fameux marché du trafic caravanier en position de carrefour entre trois grands foyers de civilisation médiévale à savoir : l'Afrique subsaharienne, le Proche Orient et le bassin méditerranéen, le Ksar Kénadssa comptait parmi les plus importantes cités anciennes de la région du sud-ouest algérien. De par sa dimension culturelle, religieuse et sa valeur architecturale, il avait tenu, grâce notamment à la Zaouïa³Ziania, une fonction de centre régional (MEAT, 1998) rayonnant sur toute la partie ouest du Maghreb. Creuset de la civilisation présaharienne et entité essentielle du patrimoine culturel national, Le ksar de Kenadsa est classé aux monuments historiques en tant que centre historique vivant (PDEA, 2013).

Autrefois puissant et influant, Le Ksar Kénadssa ne constitue aujourd'hui qu'un quartier périphérique de la ville, déserté par la majorité de ses occupants et soumis au processus de dégradation. Dans cette version actuelle de dégradation, le Ksar est voué à la disparition, car il est devenu synonyme de précarité sociale.

Cependant, pour des raisons complexes qui tiennent, notamment à l'occupation complète de l'espace et à la mondialisation des échanges, les biens patrimoniaux ont changé de statut et les objets Patrimoniaux sont reconnus comme des éléments structurants et sont considérés comme d'importants marqueurs territoriaux (Necissa. Y, 2006). En effet, depuis l'adoption par l'Unesco de la Convention du patrimoine mondial en 1972, plusieurs expériences à travers le monde entier ont démontré l'intérêt économique de la valorisation du patrimoine. La notion de patrimoine, qui s'est élargie pour englober l'agglomération historique toute entière est aujourd'hui devenue un outil déterminant dans l'approche du développement (Aba. S, 2006). C'est dans cette stratégie, qui fait de la préservation et de la valorisation du patrimoine un objectif principal servant d'outil de développement, que vient s'élaborer la présente expérience.

2. La zone d' étude: une oasis saharienne de la Saoura

La Saoura est l'une des régions les plus attrayantes du Sud-Ouest Algérien. Elle est limitée au Nord par les monts des Ksours et le haut Atlas marocain, à l'Ouest par la Hmada du Draa, à l'Est par les oasis du Tidikelt et au Sud par le plateau du Tanezrouft. Faisant partie du grand ensemble saharien le « mont des Ksours » et étant une des communes de La willaya de Bechar, la

³ D'après Derradji. M-A (2013), l'origine du mot Zaouia désigne un emplacement ou un local réservé à l'intérieur d'une structure plus vaste où les soufis (mystiques) pouvaient se retirer comme le laisse entendre le sens de la racine du mot arabe (angle ou recoin).Actuellement, par Zaouïa, l'on désigne un complexe religieux comportant une mosquée, des salles réservées à l'étude et à la méditation ainsi qu'une auberge pour y recevoir les indigents. On y effectue les pratiques spirituelles et on y enterre les saints fondateurs des confréries soufies.

ville de Kénadssa est située à 22Km au Nord-ouest de celle-ci, au fond d'une vallée entourée d'un relief montagneux dont la Barga de Sidi M'hamed Ben Bouziane lui assure une protection optimale contre les rigueurs climatiques (Voir Fig.1). Elle occupe une vaste superficie estimée à 2770km² (PDAU, 1997).

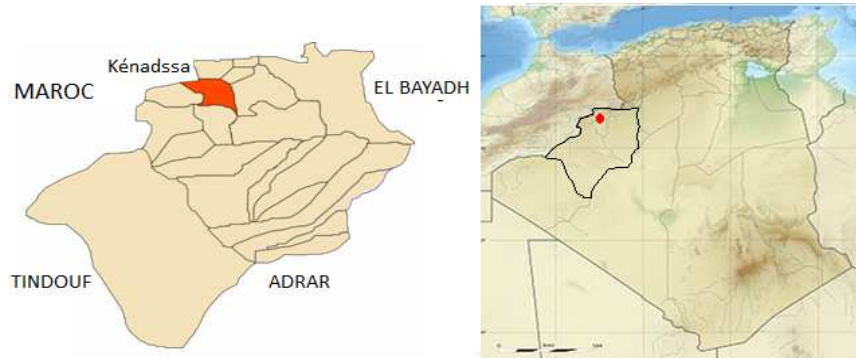


Fig. 1. La zone d'étude, une fraction de la willaya de Bechar
Source: Wikipédia en français, 2013

Ville linéaire par excellence, le développement urbain de l'agglomération s'est opéré suivant un axe longitudinal : l'avenue de l'ALN et la CW9. De près de 2km de long sur 800m de large, cet axe structurant est ponctué par trois principaux quartiers, marquant chacun une étape importante de sa croissance urbaine (Boutabba.H et al, 2011): la cité coloniale, le quartier El Barga de développement récent et le vieux Ksar qui représente actuellement, en dépit de son importance culturelle et religieuse sur l'ensemble de la région, qu'un quartier marginalisé (Voir Fig.2).

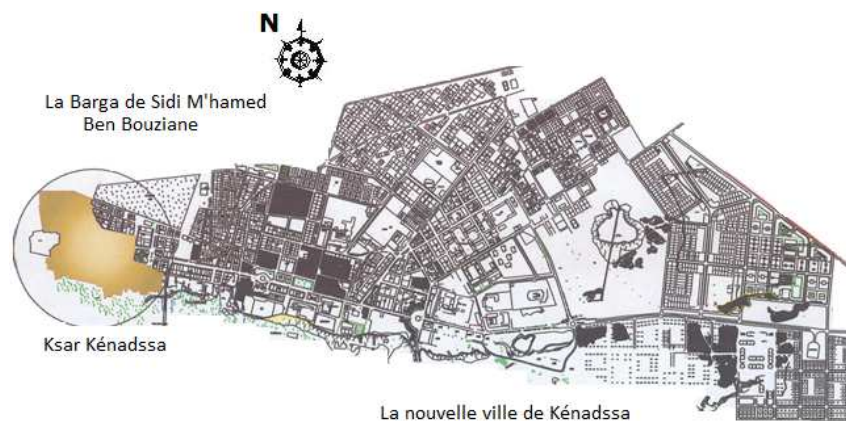


Fig.2.Position du Ksar par rapport à la ville
Source: PDAU, 1997

3. Présentation de la méthode d'analyse

L'objectif de cette recherche est de dévoiler l'état déplorable des chefs d'œuvre architecturaux ancestraux afin de tirer la sonnette d'alarme devant l'urgence de sensibiliser l'opinion publique sur l'urgence de l'établissement d'un plan de sauvegarde du Ksar Kénadssa. Pour cela nous avons choisi un ensemble de techniques de recherche :

- Consultation d'un fond documentaire représenté par les documents officiels coloniaux ainsi que sur les documents officiels de l'Algérie indépendante : PUD (Plan d'urbanisme directeur) 1972, 1982 les PDAU (Plan d'aménagement et d'urbanisme directeur) ;
- Investigations personnelles sur site par le biais d'une part de l'observation définie « *comme un regard porté sur la situation* » (Raymond, 1973) ; d'autre part par le biais de l'entretien "non directif" qui favorise un déplacement du questionnement, tourné vers le savoir et les questions propres des acteurs sociaux. La principale raison d'être de la méthode est de recueillir, en même temps que les descriptions des personnes interrogées, les éléments de contexte, social mais aussi langagier, nécessaires à la compréhension des dites descriptions (Michelat, G, et Michel Simon, M, 1977)

Pour l'aboutissement de cette recherche, l'enquête s'est déroulée en deux temps. Dans un premier temps: il était question de dresser un bilan sur la dégradation physique et la dévalorisation fonctionnelle et socio-économique qu'a connue cette entité urbaine. Dans un second temps: exposer une action de réhabilitation et de mise en valeur du Ksar à travers la création d'un parcours touristique (Boutabba.H et al, 2012).

4. Formation historique et processus de développement urbain du ksar kenadssa

S'étendant sur une superficie de 11ha, le ksar est composé de deux parties d'étendues inégales et d'époques historiques distinctes : la kasbah de 'Sidi Elhadj' et d'un ensemble d'entités urbaines (entité des notables, des ruraux, des artisans et des juifs).

La Kasba de 'Sidi Elhadj' édifée durant le règne des Saadéens constitue d'après Moussaoui (1996) le premier noyau urbain du Ksar. Au XVe siècle, elle s'était dotée des différents éléments constitutifs qu'exigeaient les Ksour, à savoir rempart, mosquée, cimetière et souk. Sa position au carrefour de deux routes caravanières avait joué un rôle important dans ce triple essor aussi bien urbain, économique que culturel, et s'était consolidé par la fondation de la mosquée 'El Atiq' qui servait,

de par sa position en dehors des murailles de la Kasbah, d'un lieu d'accueil et de refuge aux étrangers de passage (Voir Fig.3).

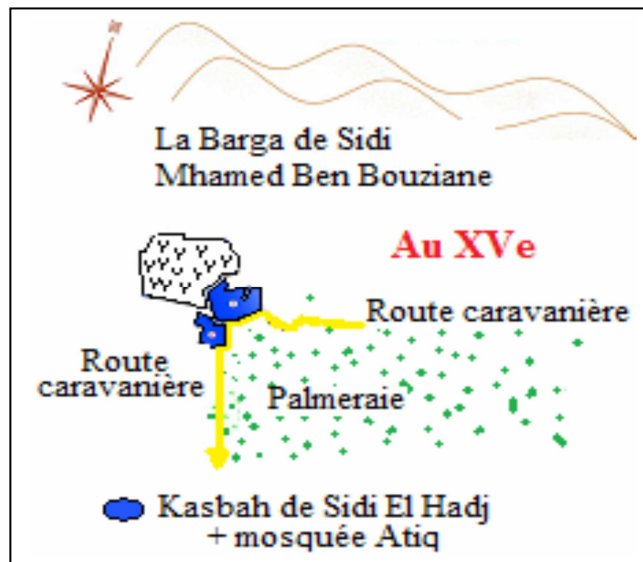


Fig. 3. Formation urbaine du Ksar au XVe siècle
Source: Boutabba. H et al., 2012

- Au XVIIe siècle, la petite Kasbah (3) de 'Sidi Elhadj' s'était transformée, suite à l'arrivée du grand Cheikh tribal et religieux *Ben Bouziane*, en une véritable cité Ksourienne, siège de la zaouia Ziania (Voir Fig.4).



Fig..4. Formation urbaine du Ksar au XVIIe siècle
Source: Boutabba. H et al., 2012

- Entre le XVIII^e et le XIX^e siècle, la cité ksourienne d'Elaouina a vu l'apparition d'une première entité urbaine dédiée aux notables. Cette entité était limitée au nord par un parcours périphérique, au sud par deux passages « *douroub* » 'Derb Essouk' et 'Derb Dhlma' à l'ouest par l'ancien rempart de la Kasbah. Au centre de cette entité se dresse 'Derb Douiria', où s'élevaient les demeures des nobles (Voir Fig.5);

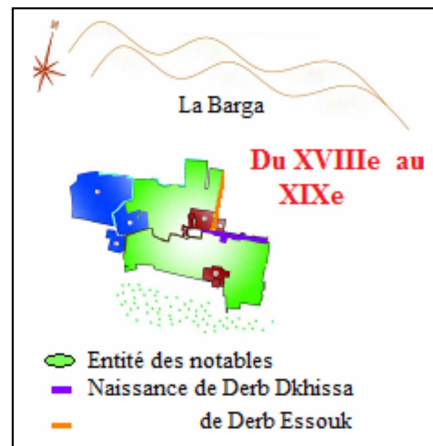


Fig.5. Formation urbaine du Ksar du XVIII^e au XIX^e siècle
Source: Boutabba. H et al., 2012

- La quatrième période de développement qui marqua le début du XIX^e siècle a vu l'apparition d'une vaste place au Nord-ouest du Ksar. C'est l'entité des artisans, qui constituait l'articulation entre le souk et la mosquée. Elle était bien séparée de celle des notables par deux parcours Derb Dekhissa et Derb essouk (Voir Fig.6).

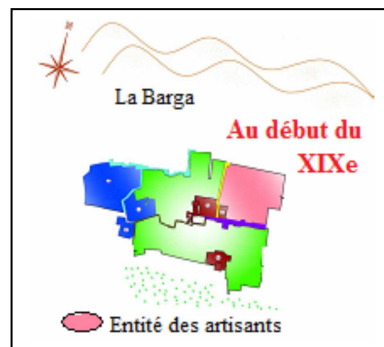


Fig.6. Formation urbaine du Ksar au début du XIX^e siècle
Source: Boutabba. H et al., 2012

- La cinquième période caractérisant la fin du XIXe siècle s'était matérialisée par l'apparition d'une nouvelle entité à l'extrême Nord – est du ksar en guise de protection physique entre la Barga Ben Bouziane au nord et l'entité des notables au sud, c'est l'entité des ruraux.
- Le début du XXe siècle constituait la dernière étape de développement du Ksar, avant sa saturation physique, elle concernait l'urbanisation du prolongement de 'Derb Dkhissa' à la partie sud-est du Ksar où une nouvelle entité urbaine avait pris naissance celle des juifs. Cette entité physique ainsi constituée était limitée d'une part par la palmeraie, de l'autre par la Rahba (4) (Voir Fig.7).

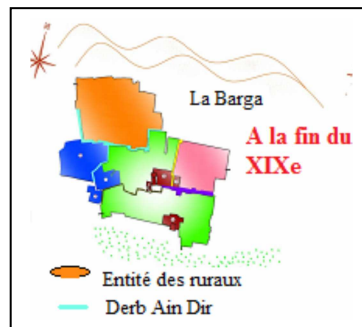


Fig.7.Dernière étape de développement urbain du Ksar à la fin du XIXe siècle
Source: Boutabba. H et al., 2012

Le ksar, via ses différentes entités urbaines, est organisé autour de l'élément structurant principal : la mosquée Ben Bouziane auquel convergent toutes les artères principales : les « *douroub* », ponctuées à leurs extrémités par des portes et jalonnées par des lieux publics : placettes du 'Souk' et celle de 'Ain Sidi Mbarek' ; cimetières et leurs mausolées ainsi que 'Bit ElKhalwa'(5) et 'Dar Cheikh'(6) (Boumezbeur, H. 2011).⁴

⁴ Rahba : Mot désignant un espace central communautaire à ciel ouvert (place) de forme sensiblement carrée ou rectangulaire. A l'échelle de l'habitation, elle est de par sa forme, sa position, l'espace qui régularise, le fonctionnement et la spatialité de toute l'habitation.

⁵ Bit El Khalwa est la maison de méditation du saint Souffi.(6) Dar Cheikh : Maison du saint souffi.

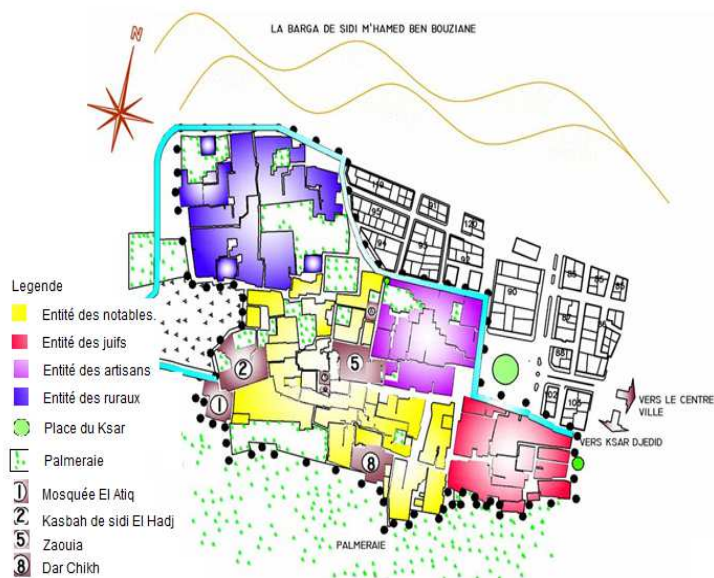


Fig.8. Formation urbaine du Ksar Kénadsa et vue générale à l'heure actuelle
Source: Boutabba. H et al., 2012

5. Diagnostic

5.1 Diagnostic des éléments urbains du ksar

A l'instar des villes arabo-islamiques, le Ksar Kénadsa via ses différentes entités urbaines est organisé autour de la mosquée centrale Ben Bouziane à la quelle convergent les artères principales : les 'douroub', ponctués à leurs extrémités par des portes.

La trame viaire des '*douroub*' est constituée par des passages rythmés, des séquences ombrées dues à l'alternance de tronçons couverts et non couverts et dont la largeur varie selon la vocation du *Derb* même. Ils se classifient en deux grands systèmes :

1. Système linéaire : ou existence d'un seul chemin qui mène d'un point à un autre. En se hiérarchisant, il prend la forme d'une arborescence. C'est le cas du parcours économique de '*DerbEs souk*' qui permet de relier le marché à la mosquée Ben Bouzian où il s'articule avec '*Derb Dkhissa*' et '*Derb Dhlima*' qui permettent de relier, respectivement, celle-ci avec l'entrée principale du Ksar ainsi que la mosquée El Atiq. Ce parcours est caractérisé par ses dimensions importantes (conduire bêtes et marchandises) ainsi que par la nudité de ses parois. En plus de sa fonction économique, il permet de délimiter deux entités urbaines importantes, celle des notables de celle des artisans. '*Derb Dlima*' est en général d'une largeur restreinte sauf à quelques points telle les sorties de la '*Dlima*', où il connaît de légers élargissements. Ce passage dessert, au niveau des changements de ses directions, les *diour* (*ensemble de Dar ou maison*) et '*Bit El Khalwa*'. Il est superposé à un passage essentiellement féminin. En dehors des accès domestiques, ces parois ne présentent aucune autre ouverture. '*Derb Dkhissa*' est beaucoup plus large (6.5m) que les deux *douroub* précédents ; cependant cette largeur n'est pas originelle, elle a été acquise aux années 1980, suite à un souci de mécaniser et fluidifier aux visiteurs, notamment lors des fêtes religieuses, l'accès à la grande mosquée de Ben Bouziane. Depuis, le plancher recouvrant ce '*derb*', a par conséquent totalement disparu. Quant à '*Derb Ain Dir*', il relie la place du Souk au cimetière, structurant ainsi la partie haute du Ksar. Ces quatre passages linéaires forment des '*douroub*' à l'échelle du Ksar (voir Fig. 9).



Fig.9: Les systèmes linéaires à l'échelle du Ksar de Kénadssa ; les '*Douroub*' principaux
Source: Boutabba. H et al., 2012

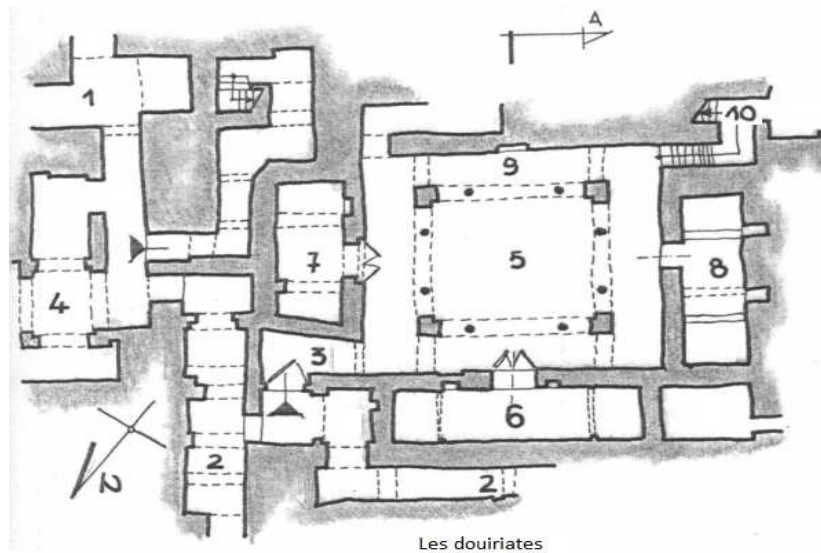
2. Système en boucle ou existence de deux chemins différents pour aller d'un endroit à un autre. Ce type se concrétise généralement dans les '*douroub*' secondaires qui s'articulent à l'intérieur des entités. Leur appellation est généralement, soit issue des groupes généalogiques (*Derb Hjaoua*, *Derb Douiriat*..) soit des métiers qui y prennent places (*Derb Hadada*, *Derb Fakhara*). '*Derb Rmila*' joint la place du Ksar au Riyadh, il jouissait jadis d'une importance de taille vu qu'il comprenait son entrée principale. Perpendiculairement à '*Derb Dkhissa*' se dresse un parcours secondaire qui a été élargie et mécaniser afin de faciliter l'accès à la zaouïa Ziania ; il porte d'ailleurs le même nom. C'est '*Derb Zaouïa*' (Voir Fig.10).



Fig.10. Les systèmes en boucles à l'échelle des entités ; les '*Douroub*' secondaires
Source: Boutabba. H et al., 2012

2.1 Parcours intérieurs de l'entité des notables : Le centre de l'entité des notables constitue un ensemble de '*douiriat* : *Bit el Khalwa* et *Bit Cheikh*'. Ils sont desservis par deux parcours superposés. Le premier parcours est réservé à la famille et à usage féminin, il relie la maison du saint aux annexes, Le deuxième est emprunté par les étrangers visitant le patriarche. Il est directement relié à '*Derb Souk*' et desservit les espaces de réceptions '*Douiriat*'.

Les '*douroub*' sont fortement dégradés et menacent ruine sur plusieurs tronçons, notamment les passages féminins et '*Derb Dlima*'. L'effondrement des planchers ainsi que les grandes fissures qui ont sillonné leurs parois ont largement limité leurs accessibilités (Voir Fig.11).



Legende

- | | |
|-----------------------|-------------|
| 1. Derb Souk | 6. Dar Diaf |
| 2. Derb Dlima | 7. Dar Tyab |
| 3. Skifa | 8. Bit |
| 4. Patio : Ain Ed dar | 9. Riwaq |
| 5. Patio West Ed dar | 10. Droj |



Deuxieme parcours de l'entité des notables



Premier parcours de l'entité des notables

Fig.11. Etat des parcours intérieurs de l'entité des notables
Source: Bachiminski et Grandet, 1985 ; Clichets Boutabba. H et al. 2011

Quant aux placettes ou 'Rahba', le diagnostic a montré que la place du 'souk' ne présente aucun aménagement et que la place de 'Sidi Mbarek' est dans un état délabré. Seule la place du Ksar, qui permet le lien entre ce dernier et la

ville, est relativement mise en valeur, permettant ainsi la rencontre et l'échange social (Voir Fig.12).

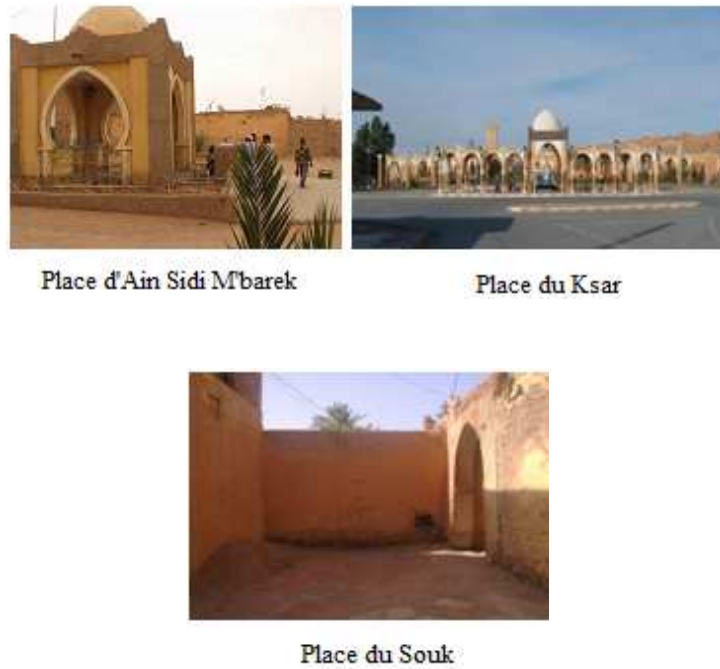
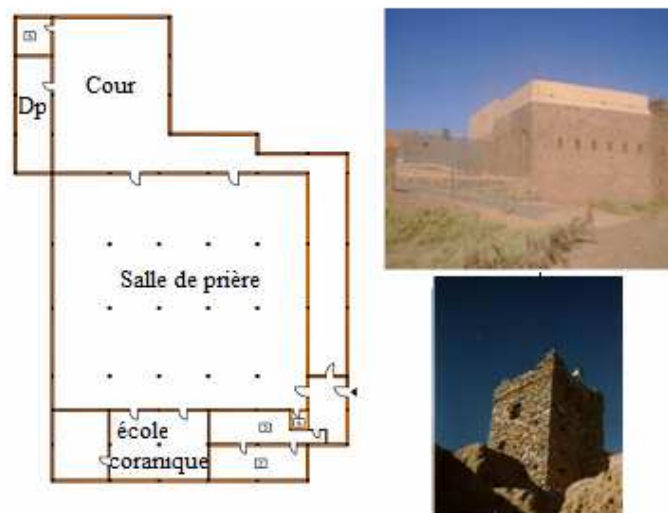


Fig.12. Etat des placettes du Ksar Kénadssa
Source: Boutabba. H et al., 2012

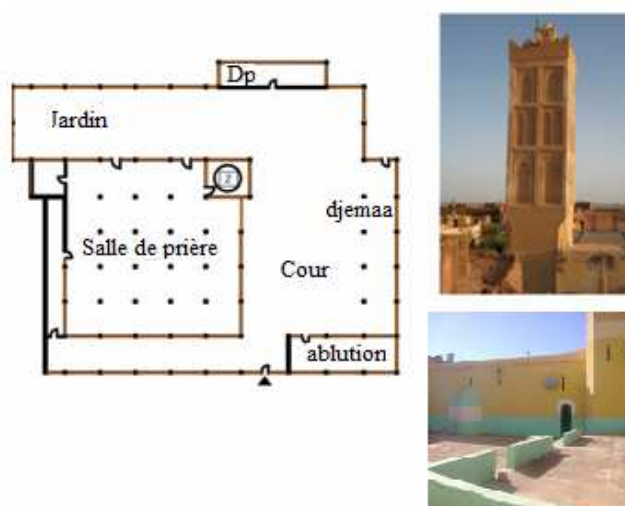
5.2. Diagnostic des éléments architecturaux du ksar

5.2.1. Les mosquées d'El atik et de Sidi Mhamd ben Bouziane

Faisant partie du noyau original de la casbah Sidi Elhadj, la mosquée El Atik est en état dégradé, son ancienne salle d'ablution située au sous sol est actuellement fermée du fait qu'elle menace ruine. De même, la situation de l'ancienne école coranique ainsi que le minaret présentent de grands dommages. Quant à la mosquée Ben Bouziane, elle présente un état moyen de conservation ; cependant, elle nécessite plusieurs opérations de traitement inhérent à l'étanchéité des planchers qui couvrent l'ancienne place publique de la Djemaa (Voir Fig.13).



Mosquée El Atik



Mosquée Ben Bouziane

Fig.13. Etat des principales mosquées du Ksar
Source: Boutabba. H et al., 2011

5.2.2. La Khalwa

Lieu de recueillement et de méditation du saint (Maiza.M *et al.*, 2012), elle prend accès de '*Derb Dlima*'. Elle fait partie des hauts lieux de culte qui attirent les touristes. Elle est en état relativement dégradé comparativement à '*Dar Cheikh*' (maison du saint) qui présente quant à elle de nombreux dommages menaçant la stabilité de la bâtisse notamment, les planchers des chambres qui sont complètement délabrés, les murs de '*Westeddar*' (le patio intérieur) ainsi que les escaliers qui présentent plusieurs fissures (Voir Fig.14).

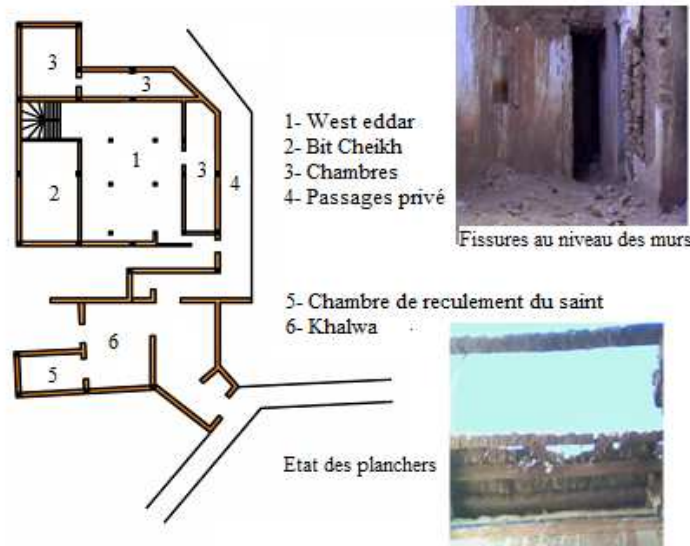


Fig.14. Etat de la 'khalwa' et de 'Dar Cheikh'
Source: Boutabba. H et al., 2011

5.2.3. La Douiria Djedida⁵

Construite en 1951 comme nouveau siège de la zaouia Ziania, elle comporte quatre cours intérieures autour desquelles s'articulent les salons de réceptions, chambres d'hôte et les cuisines. C'est un des lieux touristiques les plus visités. Particulièrement lors des fêtes religieuses, la zaouia souffre d'une dégradation alarmante au niveau des planchers, ouvragés par des arabesques en bois ainsi qu'au niveau des murs intérieurs des cuisines (Voir Fig.15).

⁵ Douiria : Désigne plus précisément la salle de réception ou chambre d'hôtes, lieu où le saint souffi (cheikh ou le mrabet : Marabout) reçoit, prie et dispense ses enseignements et ses bénédictions (baraka).

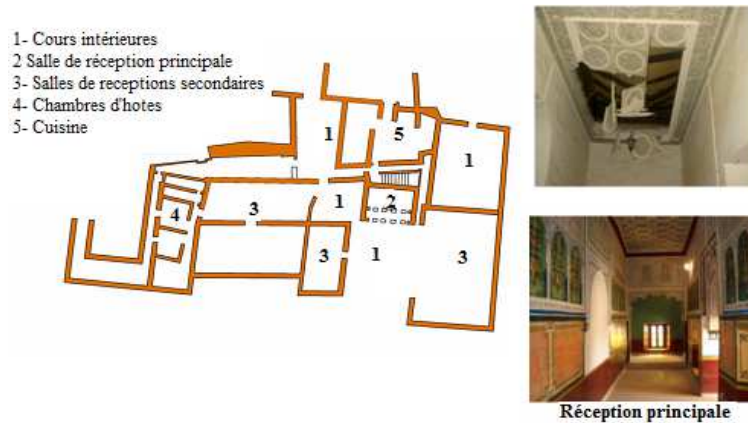


Fig.15. Etat du siège de la Z'aouia Ziania'
Source: Boutabba. H et al., 2011

5.2.4. Les mausolées

Le cimetière fait partie du premier noyau urbain du Ksar, il a été édifié à la même époque que la Ksabah. Il comporte deux mausolées celui du saint '*Sidi Mhamed*' et celui de son épouse '*Lalla Kaltoum*'. Ils sont construits en pierre plate liée à l'argile, ils sont chapotés de coupôles et sont entourés de clôtures basses. Ce sont des lieux visités à la longueur de l'année par les gens de la région, particulièrement lors des '*Mawlid*' (fête religieuse de la naissance du prophète). Actuellement, leurs coupôles sont en partie effondrées et présentent de larges fissures qui favorisent l'infiltration d'eau, ce qui engendre des coulées d'eau boueuse le long des parois. Quant au revêtement extérieur il est en fort état de dégradation (Voir Fig.16).



Fig.16. Etat des mausolées
Source: Boutabba, H. et al., 2011

5.2.5. L'habitat domestique

Connu sous la terminologie de « Dar ». Abri, non pas du ménage mono nucléaire, mais de la famille élargie au sens tribal du terme (Grandet.D, 1986 ; Mesfer.J, 1984). Architecturalement, la maison du Ksar est composée de quatre principaux espaces:

1. L'entrée en chicane 'Skifa' : C'est un espace coudé, il constitue un filtre entre le monde extérieur et l'espace intérieur;
2. L'espace central : est soit un patio soutenu de quatre ou douze piliers entourés de galeries communément appelé 'Riwak', largement ouvert sur le ciel 'Westeddar', soit se limite à une ouverture zénitale 'Ain Eddar' appelé dans d'autres régions, notamment aux zibans par 'Raouzna';
3. Les maisonnettes ou 'Byout' : elles sont réservées à l'hébergement des familles mono nucléaires. Elles prennent accès des 'riwak' ;
4. Les escaliers 'Droj'. De dimensions étroites, ils sont situés au niveau de la chicane, juste à l'entrée.

Au recensement de 1977, le ksar comptait un total de 256 logements regroupant 186 ménages, « plus de 1500 habitants ». En 1987, le recensement a identifié 177 logements occupés par 112 ménages, « plus de 900 personnes » (RGPH 1987). Aujourd'hui, le ksar a perdu sa fonction résidentielle, seule une douzaine d'habitations sont occupées. La majorité des constructions sont en état de dégradation ou en voie d'effondrement. Les maisons rempares sont les seules qui sont en bon état et encore habitées (Voir Fig.17).

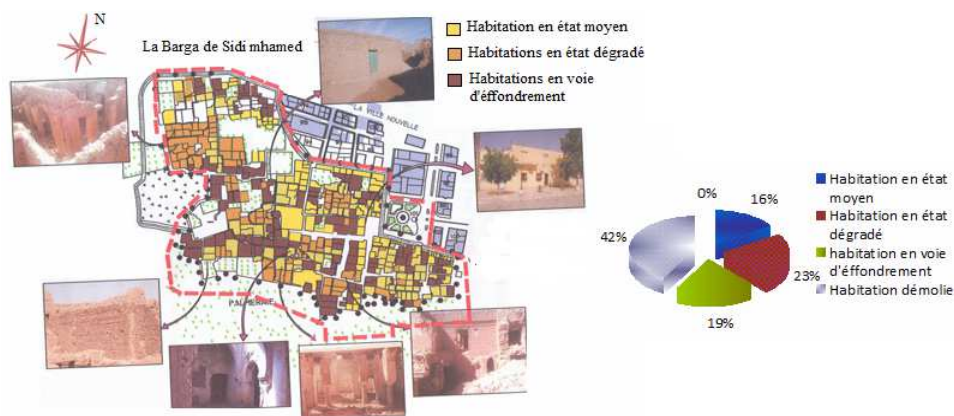


Fig.17. Etat de l'habitat domestique au Ksar
Source: Boutabba. H et al., 2012

6. Intervention urbaine

L'objectif principal de cette étude est la revalorisation du Ksar à travers la redynamisation de ses potentialités touristiques et l'attraction de ses habitants qui l'on déserté pour d'autres quartiers nouveaux mieux dotés en infrastructures de base et en services de proximité et adaptés à l'automobile.

L'expérience a démontré que toute politique de conservation du patrimoine architectural qui consiste uniquement à colmater les fissures, renouveler les enduits et mettre à neuf les bâtiments, n'arrive que difficilement à figer la population qui y réside (Sadki. A, 2006) et ne permettait que rarement de faire revenir la population qui l'avait quitté. Pour cette raison nous proposons un plan d'aménagement qui comprend différentes opérations d'urbanisme dont l'objectif est de doter, d'une part, le Ksar d'infrastructures de base qui permettent aux habitants qui y résident encore de mener une vie descendante ; d'autre part, de lui faire retrouver son rôle culturel et spirituel à travers la création d'un parcours touristique destiné à recevoir les fidèles (les nationaux) qui viennent le visiter aux moments des fêtes religieuses, comme attirer les touristes internationaux en encourageant le tourisme culturel.

6.1. Aménagement d'un parcours touristique et de ses annexes

Le parcours touristique proposé suit un système en boucle. Il prend comme point de départ Bab Rkha en empruntant l'axe principal linéaire de '*Derb Dkissa*' qui jouxte les plus importants édifices spirituels à savoir les deux mosquées '*Ben Bouziane*' et '*El Atiq*' ainsi que la '*Khalwa*' et '*Dar Cheikh*' (la maison du saint), il dévie ensuite vers '*Derb Dlima*', où il s'articule perpendiculairement à '*Derb Ain Dir*', le passage tangentiel au cimetière permettant ainsi la visite des deux mausolées de '*Sidi M'hamed*' et de '*Lalla Kaltoum*'. Le parcours empreinte après '*Derb Amor*' et s'élance sous un passage couvert vers la plus importante place de jadis : la place du Souk. Cette dernière donnera ensuite par l'entremise de '*Derb Essouk*' à l'entité des artisans où les visiteurs étrangers et locaux auront à contempler l'artisanat local sous ses différentes facettes (Tapisserie, poterie, bijouterie...etc). Ce parcours aboutira ensuite comme point final à la place du Ksar.

L'aménagement de ce parcours touristique appelle plusieurs opérations urbaines.

6.1.1. Les douroub

- **L'aménagement des douroub déjà existants support du parcours touristique proposé.** Cette opération s'intéressera à l'élargissement de '*Derb Amor*' pour permettre sa mécanisation.

Ceci s'accompagnera d'aménagement d'un premier parking à cet endroit et d'un autre à l'aboutissement de '*Derb Dkhissa*' à côté de la mosquée '*Ben Bouziane*'. De même, '*Derb Rmila*' profitera de la même opération d'élargissement afin de lui redonner son ancienne importance en reliant le Ksar et à la palmeraie, et aux autres régions sahariennes;

- Reconstruire les passages couverts originels effondrés tels ceux de l'entité des notables particulièrement les passages féminins;
- Restaurer les *douroub* au niveau : de leur pavage (la pierre est recommandée pour conserver l'aspect originel); de leurs parois en colmatant les fissures observées par des enduits à la chaux hydraulique; de leur aménagement urbain, telle que la restauration des anciennes *Doukkana* (bancs urbains), les lampadaires, les points d'eau notamment la fontaine de Sidi Mbarek ;
- **Création de nouveaux *douroub***, pour faciliter l'accès à certains repères architecturaux telle que la '*Douiria Djedida*'. Dans ce cas, la création d'un nouveau *Derb* perpendiculaire à '*Derb Dkhissa*' permettra un réel désengorgement du siège de la '*Zaouia Ziania*', objet de plusieurs visites annuelles. D'autres seront créés pour faciliter l'accès aux habitations existantes en cas d'urgence.

Aménager de nouveaux passages couverts pour redonner aux '*douroub*' proposés cette alternance rythmée par des séquences ombrées.

6.1.2. Les *Rahba* ou les placettes

Le parcours touristique englobe les placettes existantes : '*Rhaba de Ain Sidi Mbarek*' et du Souk auxquels un réaménagement urbain est nécessaire. Pour qu'elles soient fonctionnelles, il est impératif de réattribuer à chacune d'elles leurs fonctions initiales, ainsi *Rahba* du Souk hébergera un Souk (marché à ciel ouvert) au niveau du Ksar et celle de '*Sidi Mbarek*' les fontaines qui faisaient sa renommée. En dépit de l'importance que leurs aménagements va procurer à la vie sociale du Ksar, le nombre des placettes reste cependant faible et nécessite par conséquent l'aménagement d'autres placettes à l'échelle de certaines entités qui manquent cruellement d'espaces aérés. A cet endroit nous proposerons deux autres placettes : une dans l'entité des ruraux où elle jouxtera de nouveaux équipements de taille, l'autre dans l'entité des notables où elle jouxtera la mosquée de '*Sidi Ben Bouziane*' et assurera la continuité séquentielle avec les nouveaux '*douroub*' proposés, comme elle assurera la continuité spatiale avec le second parking proposé.

6.1.3 'Les Ryadh' ou jardins

A la différence des placettes aménagées et de la palmeraie à caractère agricole, les Ryadh sont des espaces verts de divertissement. Nous proposons le réaménagement de l'ancien Ryadh existant ainsi que la création de deux autres qui traversent le parcours touristique, l'un à proximité de l'entité des ruraux, l'autre à proximité de la mosquée 'El Atik' (Voir Fig.17).

6.2 Propositions de nouveaux équipements

A l'instar des autres ksour de la Saoura, particulièrement ceux de Bechar, le Ksar Kénadsa reçoit annuellement un nombre considérable de visiteurs notamment les nationaux, en quête des Ziara (visites religieuses) du saint Ben Bouziane. La visite des équipements religieux existants nécessite cependant d'autres nouveaux équipements qui complètent les anciens et redynamisent culturellement le Ksar, particulièrement à l'égard des touristes internationaux (voir tableau.01). Pour cette raison nous avons programmé, sur la base du recensement annuel des équipements servant à satisfaire les besoins quotidiens des habitants ainsi que ceux des touristes selon leurs deux compositions. Ces équipements auront des surfaces analogues à celles proposées pour les Ksour de Taghit de Béni Abbés, quant aux hauteurs, elles se limiteront à deux niveaux, afin de les harmoniser par rapport au gabarit général du Ksar. Ainsi le minaret de la mosquée 'Ben Bouziane' surplombera la totalité des bâtisses Ksourienne existantes et proposées.

L'artère principale du Ksar à savoir 'Derb Dkhissa' accueillera à son entrée soit à 'Bab R'kha' une agence touristique, 'Dar Edhiat', où des guides seront disponibles. A sa deuxième extrémité jouxtant la mosquée 'Ben Bouziane' à l'intersection de 'Derb Essouk' se placera la bibliothèque culturelle mémoire du Ksar nouveau siège de la 'Khézana El Koundoussia', entre ces deux points, des cafés-Restaurants jalonneront ce tronçon. Au cœur de l'entité des artisans, parallèlement à 'Derb Dkhissa' et celui de 'Hjaoua', le long de la nouvelle artère proposée, que nous avons dénommé 'Derb El Hirafiyine' : parcours des artisans, se situera à l'extrémité 'Dar ElHiraf' qui est une salle d'exposition des travaux artisanaux. Les boutiques artisanales privées seront situées le long de ce Derb proposé.

Dans l'entité des ruraux, à l'entrée de 'Derb Amor' se situera, en se faisant face, la maison du Folklore qui abritera les fêtes religieuses ainsi que les manifestations folklorique, et le musée d'Art et Culture. Le passage mécanisé ainsi que le parking proposé absorberont le flux des visiteurs que ces deux équipements peuvent susciter. La grande place prolongée par le Ryadh préconisé, ainsi que les locaux commerciaux appuieront le choix de ce type d'équipements.

Vu l'importance de la 'Douiria Djedida' siège de la 'zouia Ziania' dans l'attrait des fidèles, les lieux principaux d'hébergement des adeptes seront placés dans l'entité des notables, à l'aboutissement de 'Derb Zaouia' en jouxtant cette dernière. Ce parcours donnera accès au Bain maure le hammam traditionnel. Les touristes internationaux seront, quant à eux, hébergés loin des fidèles dans l'ancienne Kasbah de 'Sidi Elhadj'.

Tableau 1: Equipements proposés

Nombre de niveaux	Surface foncière	Nombre	Equipements
RDC	1700m2	01	Dar El Hiraf
RDC	2000m2	01	Dar El Folklore
RDC	500m2	01	Dar edhiaf
RDC	850m2	01	Musée
RDC	850m2	01	Bibliothèque
R+1	1200m2	01	Lieux d'hébergement des fidèles de la Zaouia
RDC	120m2/unité	16	Locaux commerciaux
RDC	300m2	01	Hammam Traditionnel
R + 1	150m2/Unité	04	Cafés- Restaurants

Quant aux équipements de premières nécessités, ils seront éparpillés à l'intérieur du Ksar au sein des unités d'habitations.

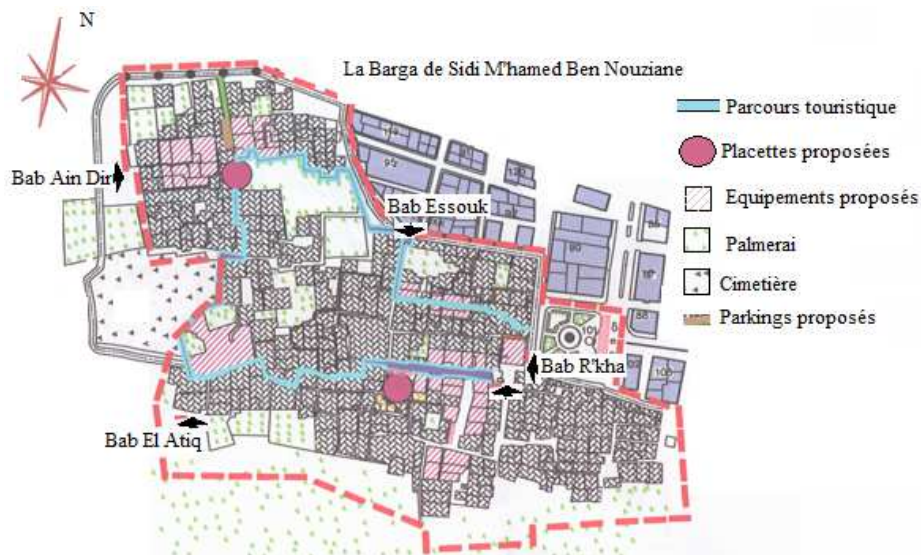


Fig.17: Interventions urbaines au Ksarau Ksar
Source: Boutabba. H et al., 2011

6.3 Les unités d'habitations

Comme indiqué, les maisons remparts sont les seules qui soient encore occupées, notamment celles donnant sur la nouvelle ville. Les autres témoignent de constructions assez anciennes. Elles se divisent en trois catégories :

- Habitations dégradées ;
- Habitations en voie d'effondrement ;
- Habitations totalement démolies.

Les habitations démolies constitueront le siège foncier des équipements proposés. Pour cela nous ferons appel à la loi d'expropriation pour utilité publique ainsi qu'à la loi de dédommagement et de financement relative à la protection du patrimoine culturel (l'article 87 de la loi n°98-04 du 15-06-1998-). Les habitations en voie d'effondrement seront reconverties en café-Restaurants, locaux commerciaux et lieux d'hébergements. Les habitations dégradées seront rénovées.

Symbole de précarité et de pauvreté, les techniques traditionnelles de construction sont hélas rejetées par les propriétaires. Le pisé, les rondins de palmier et roseaux « l'art de bâtir » traditionnel oasien ne fait plus le poids, sa valeur est devenue trop médiocre et son image se détériore. (Aba. S, 2006). Pour cette raison et en dépit de force de loi dont jouit le cahier de charge, il est dans l'impossibilité d'imposer aux habitants de faire recours à ces techniques ancestrales. En plus les instructions des pouvoirs publics promulguées suite aux inondations 2008 abolit l'utilisation de ses techniques constructives anciennes. L'architecture de terre essence de l'habitat Ksourien est ainsi condamnée à disparaître. Pour remédier à cet état de fait, et trouver une position médiane permettant de concilier entre les vœux légitimes des habitants en matière de sécurité de leurs habitations, et ceux d'une redynamisation d'une mémoire identitaire régionale via la conservation du patrimoine architectural, nous avons opté pour une structure porteuse en béton armé et un remplissage en brique de terre cuite ou en pierre. Aucune clause du cahier de charge ne discutera de la distribution spatiale intérieure qui sera l'apanage du propriétaire. Seul le nombre de niveau qui se limitera à deux (R+1) ainsi que les caractéristiques de la façade extérieure feront l'objet de recommandations allant de paire avec le cachet architectural ksourien ancien. A ce titre, les enduits extérieurs seront en chaux hydraulique, la couleur ocre jaune est recommandée, les ouvertures sur façade extérieure seront réduites à de petites ouvertures permises seulement à l'étage, les ouvertures seront garnies soit d'arcades, soit de colonnades en bois. Enfin pour des raisons d'intimité et vue l'étroitesse des '*douroub*', le vis à vis est strictement interdit.

7. Conclusion

La région de la Saoura est l'une des prodigieuses oasis présaharienne de l'ouest algérien, elle abonde de potentialités patrimoniales et archéologiques d'importance nationale et universelle. Depuis la découverte du charbon au début du siècle (1908), l'extension urbaine dans la ville de Kenadsa s'est faite selon un rythme accéléré et selon un urbanisme en complète contradiction avec celui des Ksour. En effet, suite à la création de la ville coloniale, un modèle standard urbano – architectural inspiré de la ville occidentale altéra l'originalité du paysage urbain authentique de la ville et pressa, par son pouvoir attractif, la dévaluation et la déchéance d'un riche patrimoine architectural. Nombreuses sont les expériences qui, à travers le monde, ont démontré l'intérêt économique de la valorisation du patrimoine. En Algérie la loi de 1998 a reconnu la spécificité des centres historiques par l'introduction d'un instrument à caractère urbanistique assimilable au Plan d'occupation des sols mais basé sur la «conservation» à travers la priorité donnée au respect de la continuité typologique du bâti hérité. Ouageni. Y (2006) rappelle qu'un nombre significatif d'études de «Plans de sauvegarde» a été lancé avant même la publication du décret d'application générale. A l'instar des plans de sauvegarde de Ksar Metlili (1996-1998), Ksour d'El Atteuf et de Ghardaïa (1996-1998), Ksar de Berriane (2000), Ksar de Bousseghoun à El Bayadh (2000-2002) et la Casbah d'Alger (2000-2005), la présente étude vient doter la ville de Kénadsa d'un plan d'aménagement lui permettant de valoriser le patrimoine architectural et urbain de son Ksar. Bien que privé des caractères juridiques et réglementaires en raison de l'absence déterminante de l'opposabilité au tiers propre à un plan d'urbanisme, cette étude vise à sensibiliser l'opinion des différents secteurs impliqués dans le devenir des centres historiques et la société civile. Cette conjoncture économique difficile rend la valorisation du patrimoine un besoin désormais pressant et fortement partagé.

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DISTRIBUTION AND ANNUAL REGIME OF THERMO-HYGROMETRIC INDEX IN THE WEST OF CURVATURE CARPATHIANS

ELENA GRIGORE¹, LUMINIȚA SĂFTOIU²

Abstract

Western region of Curvature Carpathians is recognized as a tourist area, which through tourism activity and infrastructure presents national and international interest. The present analysis is intended as an overview of bioclimatic potential of the region, in our case one of mountain. This highlights the synthetic picture of the event which provides a synthetic and suggestive picture of the degree of spatial extension and the evolution over the years of thermo-hygrometric index (1971-2010). The analyzed index is an important indicator in evaluating the real climatic perception and effective of human body, in this case the body of a tourist being on holiday in the studied area. Thus, through the steps presented the study ensures to the wide bioclimatic variability an optimal model of quick understanding of the information transmitted.

Keywords: bioclimatic index, comfort, discomfort, THI, mountain.

1. Introduction

Curvature Carpathians runs between the valley of the Oituz River and that of Prahova River. The West of this region consists of the groups of the mountains: Teleajenului - Doftanei and Timișului (*Geografia României*, vol. III, 1987). The area under study represents, for more than 90 years, an attractive area in terms of tourism, due to natural conditions, but also in terms of access opportunities, that led to the intensification of tourism activities. Thereby, many settlements on the rivers Teleajen, Doftana and Prahova became recognized spas nationally as well as internationally.

¹Over time, both the analysis of environmental factors, and weather condition and various environmental conditions revealed fact that they influenced both the man as well as his activity, his health and human efficiency being affected. It was found that of all physiological stress factors

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(atmospheric, hydrologic, geologic etc.), climatic stress is rampant in manifestation, due to variations in time and space of climatic conditions, affecting the human body, who cannot avoid the influence of weather, in particular, the character of hot, cold, wet etc. Thereby, different perception of the state of bioclimatic comfort or discomfort of the human body, due to environmental conditions (Ionac Nicoleta, 2004), imposed the presentation of climatic conditions expressed quantitatively and qualitatively through biometeorological / bioclimatic indexes, highlighting their influence on the health of the population.

2. Data and research methodology

Western region of Curvature Carpathians through its particularities, that distinguish it from neighboring relief units, first, through mountain peaks that have a general orientation in north-south cardinal direction, imposed the analysis of thermo-hygrometric index also in terms of the manifestation of these particularities. THI index is an important indicator in evaluating the real effective climate perception by the human body, in our case the body of a tourist on holiday in the mountainous area. In general, this index presents an applicability throughout the year (12 months), the calculation being facilitated by the fact that the analyzed territory is in an area characterized in varying climatic influences. For this study the applied research method was based on meteorological data processing and interpretation (Ciulache S., 2004), obtained from the five weather stations in the analyzed area, respectively: Braşov, Predeal, Cheia, Sinaia and Câmpina (Fig.1), then bioclimatic data obtained by applying the specific calculation formula of THI index.

The researcher Kyle W.J., in 1994, launched the specific formula of thermo-hygrometric index, expressing real ambient effective temperature perceived by the human body:

$$THI (^{\circ}C) = T_{usc} - (0,55 - 0,0055 \times UR) \times (T_{usc} - 14,5)$$

Where: T_{usc} = air temperature ($^{\circ}C$) measured on dry thermometer; UR = relative air humidity (%).

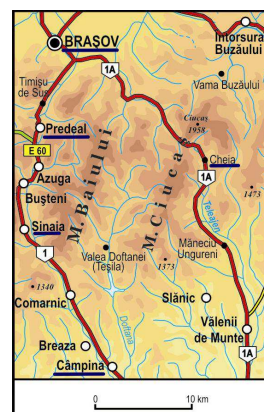


Figure 1:
Geographical position of
meteorological stations
in the western Curvature
Carpathians

To apply the calculation formula there are required values of temperature ($^{\circ}C$) and relative humidity (%) of air, being known, the fact that optimum values of the effective temperature characteristic of the human body varies

between 15°C and 20°C (outside this range climatic discomfort installs by hyperthermia, respectively hyperthermia). Thereby, several thresholds of THI values were identified, indicating the types of bioclimate, respectively bioclimatic areas (*Ionac Nicoleta, Ciulache S., 2008*).

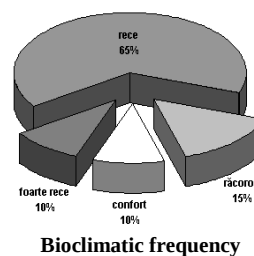
Also, useful in presenting the final results was the method of graphic and cartographic representation, being made, in the first phase, a synoptic table for annual regime, followed by specific bioclimatic map making with a highlight of the spatial distribution of THI index. Thereby, through these stages of presentation, to the wide bioclimatic variability it has been ensured an optimal model of quick understanding of transmitted information (*Grigore Elena, 2012 and 2013*). This study provides a synthetic and suggestive image of the degree of spatial extension and evolution over the years of the THI index, respectively the period of 1971-2010.

3. Results and conclusions

The values obtained by applying the calculation formula were centralized in Table 1, synoptic table, that indicates the regime of the analyzed index, and for a better understanding and a bioclimatic warning of the reader cartographic representations were made, to express the evolution and monthly and annual distribution of bioclimatic THI index, across the entire mountain and surrounding area (*Fig. 2*). The presence of local physical-geographical factors and manifestation of radiative climatic and dynamic factors have a key role in diversification of climatic and bioclimatic conditions of the analyzed region, thereby, being possible to identify the areas of climate comfort and discomfort.

Table 1 Annual regime of THI index in the west of Curvature Carpathians (1971-2010)

Month	Meteorological Station				
	Braşov	Predeal	Cheia	Sinaia	Câmpina
I	-3,6	-3,5	-3,0	-2,7	-0,5
II	-0,5	-2,6	-1,4	-3,2	1,0
III	4,2	0,7	0,0	-0,9	4,8
IV	9,0	5,4	6,3	4,1	10,1
V	13,4	9,7	10,3	7,9	14,6
VI	15,8	12,8	13,9	10,9	17,2
VII	17,3	14,5	15,0	12,8	18,9
VIII	16,9	14,3	14,9	12,9	18,4
IX	13,5	10,7	11,7	10,1	14,6
X	9,1	6,4	8,2	6,5	10,2
XI	3,2	2,2	3,0	2,2	5,6
XII	-1,0	-1,8	-1,0	-1,2	1,5
Annual	8,1	5,7	6,4	4,9	9,7



Analyzing the average annual values of the THI index, for the area under study it is found that, these values present a variation between 4,9°C, at Sinaia,

point located in the western part of the studied area and 9,7°C, at Câmpina, point located in the southern mountainous area, in the contact area with Subcarpathians. Thereby, we can conclude, that the mountainous territory of the curvature and surrounding area, the period under review, all within the *cold bioclimatic area* (Table 1), sensation felt by the human body being the climatic discomfort by cooling, given that the average annual temperature and relative air humidity varied in the period analyzed between 3,7°C and 9,0°C, respectively 76% and 86%. The annual average of THI index in the proper mountain area indicates an oscillation of 1,5°C, in the surrounding area 1,6°C, and the variation between the two regions is 3,3°C.

Thereby, is highlighted a range of bioclimatic discomfort emphasized in the west region, in the central and eastern part a moderate discomfort, and in the northwest and southwest a slight discomfort.

Monthly calculated values for the THI index indicate that in the interval between June - August, bioclimatic comfort installs outside the mountain areal, while in the mountains prevails the bioclimatic discomfort by cooling, dominating the sensation of coolness, in July and August and the cold in June. Sensation of very cold appears only in January, exception being the area of Campina, and in February, only in Predeal and Sinaia areas. In the rest of the months corresponding to cold season, with small oscillations of the calculated values, sensation of cold is felt predominantly. There is a sharp increase in THI values from the winter season to the spring, respectively for March-April and a sharp drop in the months characteristic for autumn season, end of October and up mid-November. These variations indicate a sudden shift from the one state to another, presents a variability in the range of 5°C - 6°C.

Analysis of thermo-hygrometric index highlights the visible differences for the state of bioclimatic comfort from one place to another, being possible, thereby, to identify the actual physiological sensations perceived by the human body. Thereby, based on information provided to the reader, he can build his own picture of the way of manifestation of spatial extension and the evolution over the years, in an area of the country with varying climatic influences of thermo-hygrometric index. THI index values indicate that in the west of Curvature Carpathians, in the range under review 1971-2010, **bioclimatic discomfort by cooling** prevailed up to 90%, the cold bioclimate being dominant, with a frequency of 65%. The bioclimate felt as very cold has a frequency of 10%, and the cool one, in its turn, presents a frequency also of 10%. **Bioclimatic comfort** is felt throughout the whole analyzed territory, only in summer, having a manifestation with a frequency of 10%.

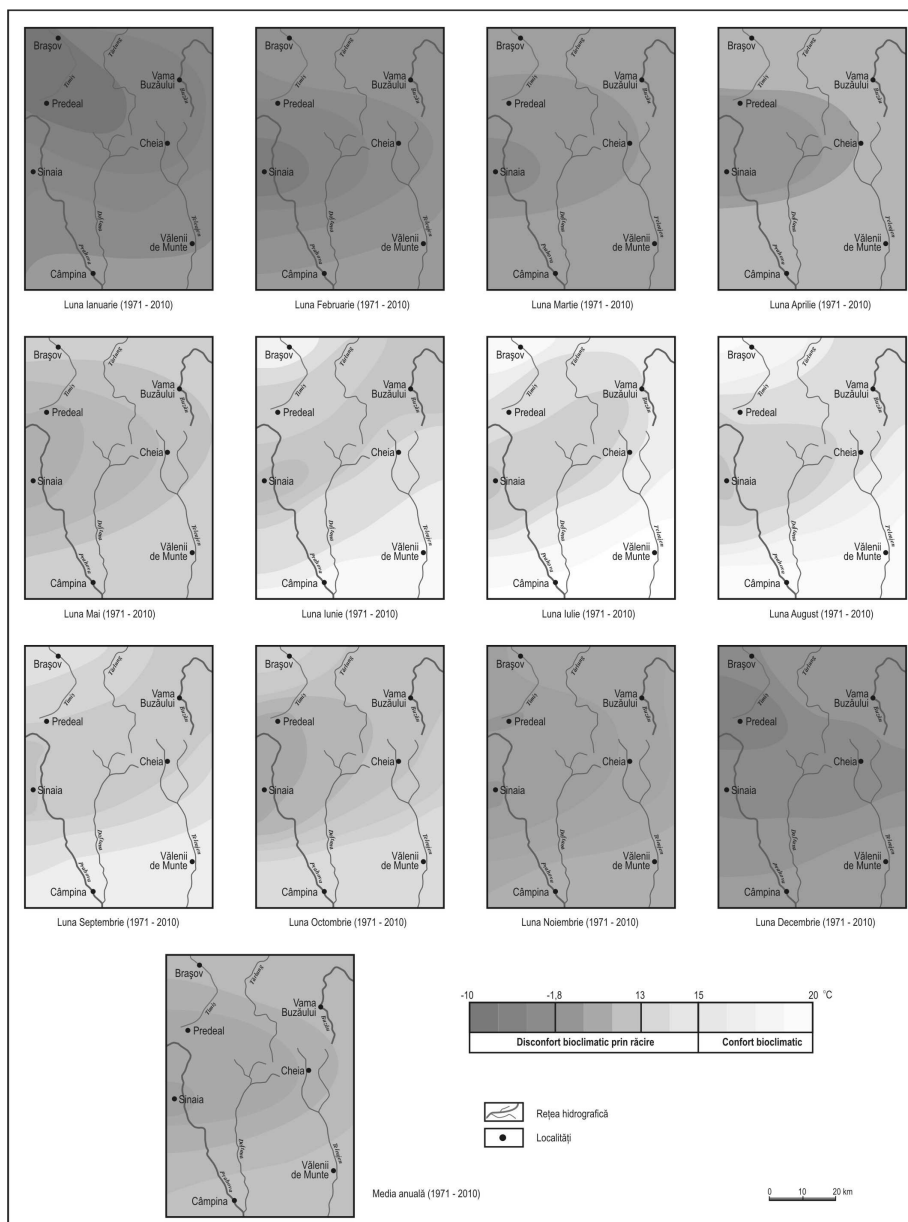


Figure nr.2 Spatial distribution of the THI index (°C) in the west of Curvature Carpathians, during 1971-2010

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THE ETHNIC AND CONFESSIONAL STRUCTURE OF HARGHITA COUNTY IN 2011

GEORGE-BOGDAN TOFAN¹

Abstract

On 5th July 2013, the National Institute of Statistics published the final results of the 2011 Population and Household Census. Therefore, for this study, we reviewed the statistical data regarding the ethnic and confessional structure of Harghita County, mentioning the fact that, at the 2011 census, registering one's religion and ethnicity was done based on each person's statement.

However, for those who did not wish to divulge these information, there is no available information for these two characteristics, and, in our article, these people were classified as undeclared.

Consequently, when it comes to Harghita County's ethnic structure, only 302 435 people declared their ethnicity, Romanians numbering 39 196 people (13.0%), Hungarians 257 707 people (85.2%), Gypsies or Rroma 5 326 people (1.7%), while other ethnicities comprising 206 people (0.1%). The declared confessional structure was 302 144 people, most being Roman Catholics, that is 200 663 persons (66.4%), followed by Orthodox, with 37 670 persons (12.4%), Reformed (36 760 people or 12.2%), Unitarians (21 023 people or 7.0%) and other religions, without religions and atheists (6 028 people or 2.0%).

Key words: the 2011 population census, Romanians, Hungarians, the religious structure.

1. Introduction

The aim of the analysis at hand is to emphasize two of the main structural indicators (*ethnicity and religion*), which offer a synthetic view on population structure (*quality*) in Harghita County (Pop, 2008). The reason behind this endeavour was that, during communism, there were several impediments in regards to studying ethnic and religious structure, as the latter was not registered prior to 1990.

Thus geographic research now focuses extensively on the whole or on different parts in order to find the basic characteristics of the population residing in Harghita County (Pop, 2007). This includes several studies written by the Cluj-Napoca Geographic School: *Așezările și organizarea spațiului*

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geografic în Depresiunea Giurgeului, M. Șeer, 2004; *Depresiunile Giurgeu și Ciuc. Studiu de Geografie Regională*, V. Mara, 2008; *Componenta nordică a ulucului depresionar din Grupa Centrală a Carpaților Orientali (Drăgoiasa-Glodu-Bilbor-Secu-Borsec-Corbu-Tulgheș)*, G. B. Tofan, 2013; as well as the monographic series, published by the Romanian Academy, focusing on *Harghita County*, P. Cocean, A. Niță, Șt. Dombay, 2013, not to mention I. Lăcătușu's paper, entitled *Structuri etnice și confesionale în județele Harghita și Covasna*, 2008. The ethnic and religious structures of Harghita County have certain specificities, just like in Covasna, being one of the two Romanian counties where the Romanian population is a minority, as Hungarians make up most of the county's population (Cocean & colab., 2013).

In the analysis at hand, two of the main structural indicators were emphasized (ethnicity and religion), offering a synthetical perspective on the population quality of Harghita County.

We must mention the fact that we may not know the exact ethnicity and religion of a large section of the total stable population (310 867 people), as the census was performed indirectly, from administrative sources.

Therefore, the presented structures for the two ethnic and cultural characteristics are calculated based on the number of people who declared their ethnicity and religion, and not on the total number of the stable population.

Within the ethnic structure of this county's population, out of a total of 310 867 people, there are 8 432 people with unknown ethnic identity, and 8 723 people whose religion is unavailable.

2. Objectives and Methodology

In order to analyse the *ethnic and religious structures* of Harghita County, I began by collecting statistical data, followed by editing and interpreting it, in specific tables for each situation, which enabled the creation of the cartographic material, as an addendum and guide for understanding the territorial realities of Harghita. All these elements, perceived as a unitary whole, led to a natural and clear view on the ethnic and religious realities of Harghita, of its urban and rural areas, of its cities and towns: *Miercurea-Ciuc*, *Odorheiu-Secuiesc*, *Toplița*, *Gheorgheni*, *Cristuru-Secuiesc*, *Borsec*, *Băile-Tușnad*, and *Vlăhița*, as well as of its 58 communes.

3. The ethnic structure of population

Following the last censuses, we observe that the main ethnic structures of Harghita County are those of *Hungarians*, *Romanians*, *Gypsies (Roma)*, and

Germans, followed, in some areas of the county, by *Ceangăi*, *Ukrainians*, *Turks*, *Russians-Lipovans*, *Armenians*, *Serbs*, *Jews*, *Tartars*, *Slovaks*, etc.

Szeklers had population this area since the second half of the 12th century, when the first groups colonised the Odorheiu Secuiesc area, a process which gradually continued until the end of the 13th century, thus fully creating the Szekler domains (Cocean & colab., 2013).

The *Hungarian population* had a percentage of 85.2% (257 707 people) in 2011, out of the total of 302 435 people who declared their ethnicity, the stable population being 310 867 people, which led to a slightly larger percentage than in 2002 (84.6%), even though they had been more numerous then (276 038 people).

In terms of habitation representation, the situation in 2011 was similar to that of 2002 (80.0% in urban areas, in 2011, meaning 101 894 people, and 79.1% in 2002 (113 998 people). In rural areas, their representation was stronger, that is 89.0%, in 2011 as well as in 2002 (155 813 people, in 2011, 162 040 people in 2002).

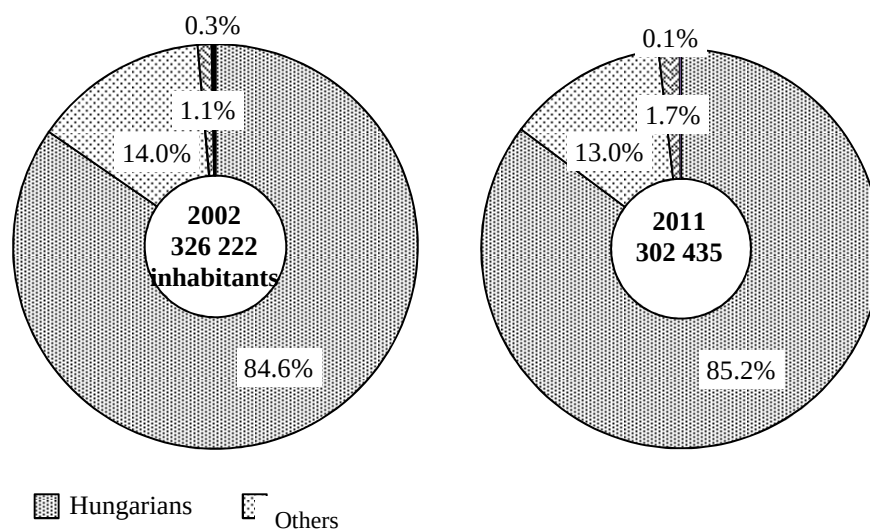


Fig. 1. The ethnic structure of Harghita County, in 2002 and 2011.

In the county's urban areas, the percentages of Hungarians in six of its cities exceeds 80% (Miercurea-Ciuc 81.5%, Gheorgheni 88.0%, Băile Tușnad 91.5%, Odorheiu Secuiesc 95.7%, Cristuru Secuiesc 95.0% and Vlăhița 99.0%), with lower values in Borsec (77.5%), Bălan (36.2%), and Toplița (23.4%), due to a higher Romanian population. Out of all 58 communes, 47 had an Hungarian majority that exceeded 90% (Tușnad 92.6%, Ulieș 93.7%, Frumoasa 95.8%,

Cozmeni 96.4%, Corund 97.0%, Ocland 98.5%, Dănești 99.1%, Merești 99.2%, Lunca de Jos 99.3%, Racu 99.5%, Cârța 99.6%, Vârșag 99.7%, Lueta 99.8% etc.).

The lowest representations of this ethnicity can be found in the northern part of Giurgeu and Bilbor depressions, which have a Romanian majority (Voșlăbeni 40.3%, Tulgheș 29.2%, Gălăușag 20.7%, Sârmaș 18.1%, Corbu 9.2%, Subcetate 4.4% and Bilbor with only 0.3%).

Romanian presence dates back to the 7th and 9th centuries, evident in a series of archeological finds in Eliseni, Șimonești and Filiaș, which belong to the *Ipoțești-Cândești Culture*. Romanians are also mentioned in several documents, during the period of Hungarian expansion in Transylvania, as well as in chronicles, alongside Hungarians and Germans (Cocean & colab., 2013).

Beginning with the 16th-17th centuries, in order to economically capitalize the uninhabited lands of Giurgeului Depression, the noble families of Ditrău-Lăzarea, created new villages, inhabited mostly by Transylvanian and Moldavian Romanians (Voșlăbeni, Subcetate, Sârmaș, Gălăușag, Bilbor, Corbu, Tulgheș). The Romanian population of Harghita County had a percentage of just 13.0% (numbering 39 196 people) in 2011, fewer than in 2002 (14.0%, 45 870 people).

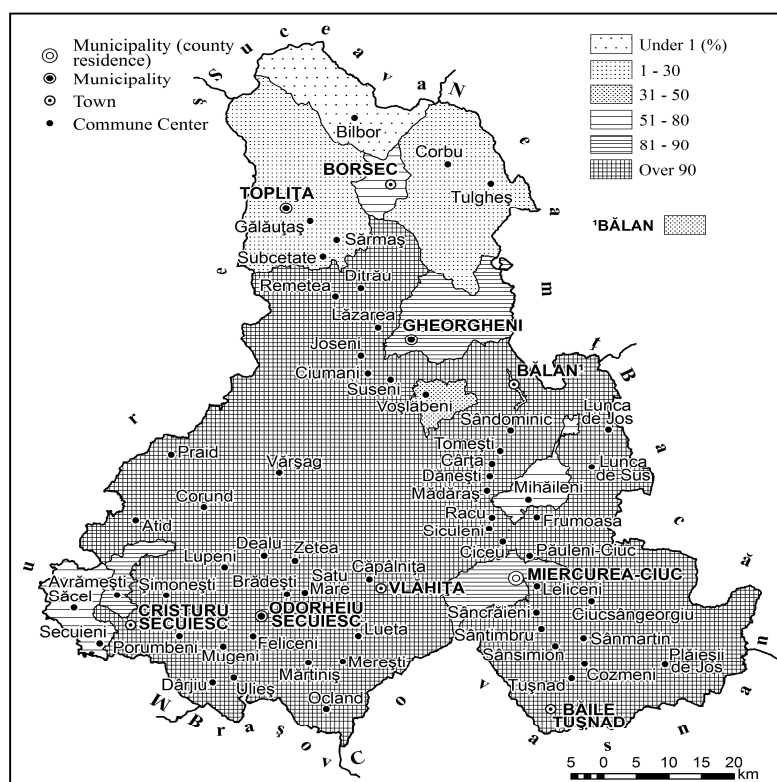


Fig. 2. The percentage of Hungarian population in Harghita County, in 2011.

The same decrease can be found in its habitation structure. In 2011, only 18.1% (23 100 people) of the county's inhabitants (127 324) were Romanians, compared to 2002, when they held 19.4% (27 936 people out of 144 083) in urban areas. At commune level (2011), Romanians represented 9.2% (16 096 people out of 175 119 people living in rural areas), compared to 2002, with 9.8% (17 934 people out of a total of 182 139 people).

Table 1: The ethnic structure of Harghita County, in 2002 and 2011

Year	Category	Total	Hungarians	Romanians	Gypsy (Roma)	Germans	Other ethnicities and undeclared
2002	County	326222	276038	45870	3835	140	339
		100.0	84.6	14.0	1.1	0.1	0.2
	Urban	144083	113998	27936	1796	112	241
		100.0	79.1	19.4	1.2	0.1	0.2
	Rural	182139	162040	17934	2039	28	98
		100.0	89.0	9.8	1.1	0.01	0.09
2011	County	302435	257707	39196	5326	70	136
		100.0	85.2	13.0	1.7	0.0	0.0
	Urban	127324	101894	23100	2165	59	106
		100.0	80.0	17.4	1.6	0.5	0.5
	Rural	175111	155813	16096	3161	11	30
		100.0	89.0	9.0	1.7	0.0	0.0

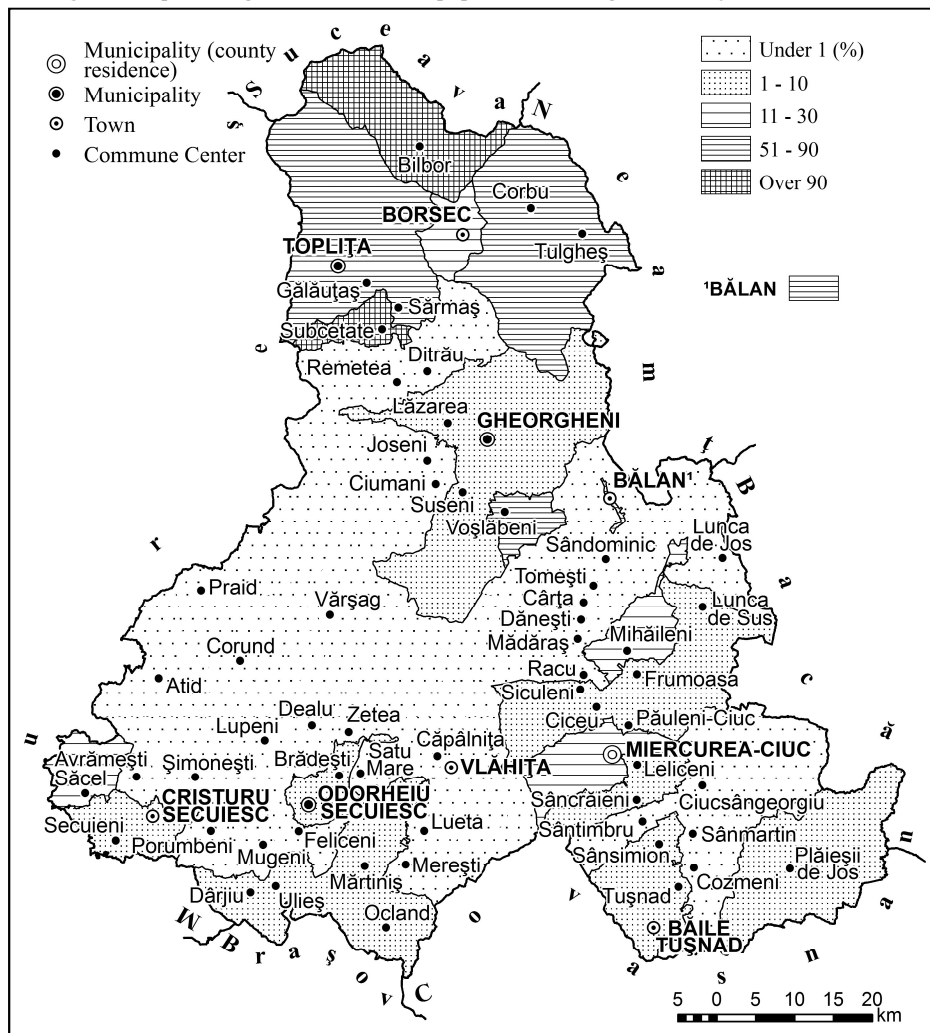
Examining the distribution of the Romanian population at administrative level (communes, towns, and cities) across the 67 units, reveals that the largest percentages can only be found in the northern part of the county, with percentages exceeding 50% (Voşlăbeni 58.6%, Bălan 62.0%, Toplița 72.5%, Tulgheș 70.4%, Gălăuțăș 78.1%), even more than 80% (Sărmaș 81.4%, Corbu 86.0%) or surpassing 90% (Subcetate 92.0%, Bilbor 99.7%).

In comparison to the analysed situation, we must emphasize the fact that Romanians find themselves below 50% in the rest of the administrative-territorial units (58 localities), due to a high percentage of Hungarians in these places.

However, reasonable values can be found in Borsec (22.1%), Săcel (19.7%), Mihăileni (19.0%) and Miercurea-Ciuc (17.4%). 22 localities have a Romanian population below 10% (Gheorgheni 9.5%, Băile Tușnad 6.5%, Plăieșii de Jos 6.2%, Siculeni 5.0%, Frumoasa 2.3%, Cristuru Secuiesc 2.1%, Lelicieni 1.6%, Dârjiu 1.3%, etc.), while 32 below 1% (Feliceni 0.9%, Praid 0.8%, Ditrău 0.7%, Avrămești 0.7%, Mugeni 0.5%, Dealu 0.4%, Cârța 0.3%, Ciucsângeorgiu 0.3%, Corund 0.3%, Lueta 0.2%, Ciumani 0.2%, Sântimbru

0.2%, Căpâlnița 0.2%, Tomești 0.2%, etc., the lowest percentages being found in three places (Mădăraș, Porumbeni and Satu Mare) with 0.1% each, due to a reduced number of Romanians, as they were included in the *other ethnicity* category (two persons in each).

Fig. 3. The percentage of the Romanian population in Harghita County, in 2011.



The third most numerous ethnicity is the *Gypsy (Roma) population*, which grew from 1.1% (3 835) in 2002 to 1.7% (5 326) in 2011, mostly concentrated in the communes situated in the Transylvanian Subcarpathians: Secuieni (22.0%), Săcel (18.6%), Avrămești (11.5%), Atid (6.8%), Dârjiu

(5.7%), Tuşnad (5.6%), Sâncrăieni (4.9%), etc. There are 11 communes where they were not declared (Bilbor) or declared themselves as Hungarians (Cârța, Ciumani, Lueta, Lunca de Jos, Lunca de Sus, Păuleni-Ciuc, Racu, Remetea, Siculeni and Vârșag); in urban areas, the highest percentages were found in Toplița (3.8%), Cristuru Secuiesc (2.7%), Gheorgheni (2.5%), Băile Tuşnad (1.7%), Odorheiu Secuiesc (1.5%), Bălan (1.4%), Miercurea Ciuc (0.9%), Borsec (0.2%) and Vlăhița (0.1%).

Germans primarily colonised Borsec, as specialists for making the glass used for mineral water bottling, Bălan, for mining, and also the town with the best industries in the county, Odorheiu-Secuiesc.

Currently, the *german population* follows the same descending national trend, their numbers decreasing from 140 inhabitants in 2002 to only 70 in 2011, most Germans residing in urban areas (84.2%, 59 people, in 2011), especially in Miercurea-Ciuc (31.4% out of the county total). In rural areas, Germans reach 15.7% (11 people), living in the following places: Ditrău, Feliceni, Gălăuțaș, Lăzarea, Lupeni, Mihăileni, Sânsimion, Sântimbru and Siculeni.

Other ethnicities (136 people) and *undeclared* (8 432 people) presented insignificant values in 2011 (0.04%), 0.02% less than in 2002. Out of the total of 136 people from other ethnicities, found across the county in 2011, most found in urban areas, the highest number belongs to Ceangai (30, out of which 17 in Miercurea-Ciuc), Ukrainians (14), followed by Turks (11), Armenians (6), Russian-Lipovans (5), Serbs (5), Jews (5), Tartars (3), Slovaks (3), Italians (3), Polish (3), Greek (1), Czech (1) and Chinese (1), as well as 45 people belonging to other ethnicities.

4. The religious structure of the population

The confessional structure of Harghita County's population in 2011 numbered 302 144 people (310 867 stable population), and consisted of: 66.4% Roman-Catholics (200 663), 12.4% Orthodox (37 670), 12.1% Reformed (36 760), 6.9% Unitarians (21 023), 0.6% Jehova Witnesses (1 724), 0.4% Baptists (811), other religions or cults, no religion, atheists, and undeclared 1.2% (Table 2, Fig. 4).

The religion with the most adherents in six of the county's urban settlements is the Roman-Catholic religion (Vlăhița 89.0%, Băile Tuşnad 84.7%, Gheorgheni 80.7%, Miercurea-Ciuc 73.5%, Borsec 73.0%, Odorheiu Secuiesc 51.1%), while in two urban centres the Orthodox religion is predominant (Toplița 71.6% and Bălan 52.0%). In Cristuru Secuiesc, the largest religion is Protestant Reformation (47.7%).

At commune level, in areas with a predominant Hungarian population, Roman-Catholics are the most frequent (in 37 settlements), followed by

Reformed (seven settlements) and Unitarians (six settlements), the Orthodox religion being characteristic to the Romanian populace (eight settlements).

The number of *Roman-Catholics* slightly increased (from 65.3% in 2002 to 66.4% in 2011) due to a minor growth of the Hungarian population (84.6% in 2002 and 85.2% in 2011). Most followers of this religion are found in rural areas (72.3%, 126 604), especially in Remetea (5 925), Sândominic (5 908), Ditrău (5312), Joseni (5 303), Zetea (5 302), Lunca de Jos (5 204), Suseni (4 836), Corund (4 644) etc.

Orthodox Christians, following the evolution of the Romanian population, slightly decreased compared to 2002 (12.4%, 37 670 people), by 17.0% (21 496 people) in urban areas and by 9.2% (16 174 people) in rural areas. The highest percentages can be found in two communes where values exceed 90% (Subcetate 94.6%, 1 717 people, and Bilbor with 99.7%, 2 606 people), while the smallest number of recorded adherents are in Satu Mare, Căpâlnița, Porumbeni, Vârșag, Sântimbru, Mădăraș etc.

The third most numerous religion is the *Reformed* (12.2%, 36 760 people, 19 281 people in urban areas and 17 479 in rural areas). The places where this religion predominated were: Cristuru Secuiesc (4 462), Praid (4 305), Feliceni (2011), Mugeni (1 765), Secuieni (1 524), Atit (1 447), Porumbeni (1 422) and Ulieș (821).

Table 2: The confessional structure of Harghita County, in 2002 and 2011

Years	Category	Declared population	Roman-Catholics	Orthodox	Reformed	Unitarian	Other religion	Without religion	Atheists	Undeclared
2002	County	326222	212937	43277	41269	23220	3846	578	56	514
		100.0	65.2	13.2	12.6	7.1	1.1	0.1	0.0	0.1
	Urban	144083	83277	25735	21576	10363	2167	248	44	337
		100.0	57.8	17.8	15.0	7.2	1.5	0.1	0.0	0.1
	Rural	182139	12960	17542	19693	12857	1679	330	12	177
2011	County	302144	20063	37670	36760	21023	5260	655	113	8723
		100.0	66.4	12.4	12.2	7.0	1.7	0.2	0.0	-
	Urban	127130	74059	21496	19281	9207	2738	259	90	5288
		100.0	58.3	17.0	15.1	7.2	2.1	0.2	0.1	-
	Rural	175014	12664	16174	17479	11816	2522	396	23	3435
		100.0	72.4	9.2	10.0	6.7	1.4	0.2	0.0	-

Unitarians, also representative for the Hungarian population, reached 7.0% (21 023 people) out of the total of 302 144 declared persons, 7.2% of the urban population and 6.7% of the rural population, with higher

numbers in Șimonești (2 612), Mărtiniș (1 898), Avrămești (1 600), Merești (964), Ocland (887) and Dârjiu (628).

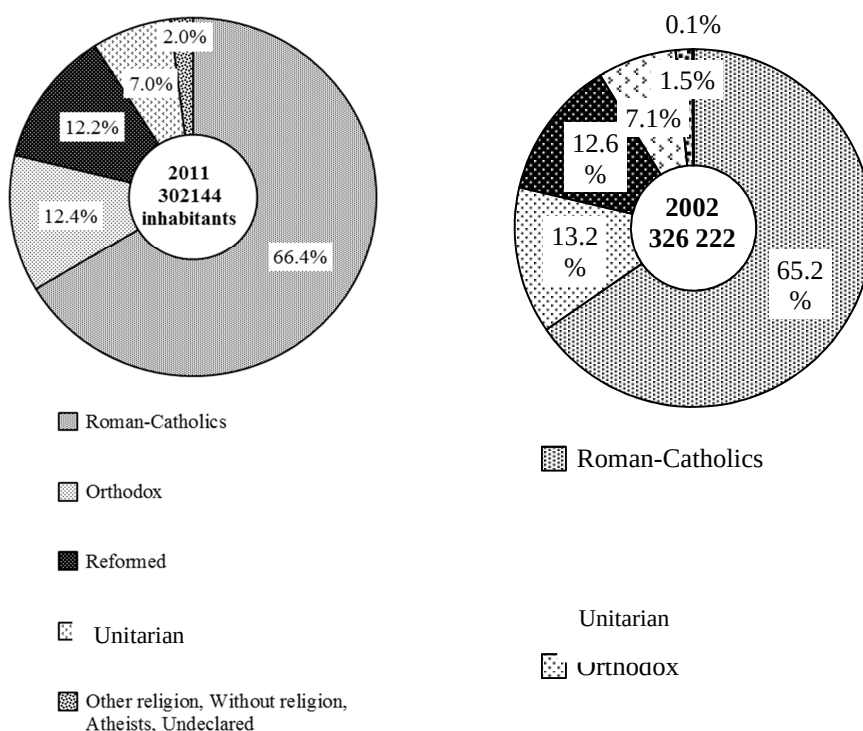


Fig. 4. The confessional structure of Harghita County, in 2002 and 2011.

Besides the above mentioned religions, one might observe the rise of the Neoprotestant *Jehova's Witnesses* cult (0.5%, 1 724 people), followed by *Baptists* (0.2%, 811 people) and *Penticostals* (0.1%, 575 people), and the decrease of the *Serbian Orthodox* (4 people), *Old Calendar Orthodox* (6 people) and *Jewish* (7 people) religions. People of other religions besides those previously presented (*Greek-Catholics*, *Adventists*, *Jews*, *Evangelical*, etc.) represent 1.7% (5 260 people), while those *without religion, and atheists* 0.2% (768 people). 8 723 people (out of a total of 310 867) did not declare their religion.

5. Conclusions

At the 2011 census, the population of Harghita County decreased by 15 355 compared to 2002. From a stable population of 310 867, only 302 435 people declared their ethnicity, while 302 144 people declared their religion.

Thus, a significant number of people (8 432, and 8 723 respectively) did not want to declare these characteristics. For these people, information was gathered indirectly from administrative sources. In terms of ethnicity, the majority is held by Hungarians (85.2%), followed by Romanians (13.0%) and Gypsies (1.7%). Compared to 2002, the Gypsy population increased from 1.1% to 1.7%, while Romanians decreased from 14.0% to 13.0%. The confessional structure, closely related to the ethnic structure, is dominated by Roman-Catholics (66.4%), followed by Orthodox (12.4%), then by Reformed (12.2%) and Unitarians (7.0%), the last two corresponding to the Hungarian populace. All these four religions make up 98% of the county's population.

This space has an distinctive *cultural diversity*, which leads to a *behavioural diversity*. Thus I analysed *ethnicity and religion*, for a cultural identification of minority and majority groups, as these elements are place defining. As specific indicators, language and religion are basic criteria for Romanians, Szeklers and Germans, religion for Jews, while life style for Gypsies.

ACKNOWLEDGEMENT

This work was supported by the strategic grant POSDRU/159/1.5/S/133391, Project “*Doctoral and Post-doctoral programs of excellence for highly qualified human resources training for research in the field of Life sciences, Environment and Earth Science*” cofinanced by the European Social Found within the Sectorial Operational Program Human Resources Development 2007 – 2013”.

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HEALTH STATUS OF RURAL POPULATION IN IALOMIȚA COUNTY

ANA-MARIA TALOȘ¹

Abstract

Health is an issue that manages to provide many topics in various fields (medicine, geography, sociology, psychology). This study aims to highlight the territorial disparities in health status of Ialomița county, to identify the health determinants and to make a preliminary analysis of the relationships between the lifestyle and the health status, using an objective assessment (statistics) and a subjective evaluation (health surveys). There were analyzed elements such as mortality and morbidity, using health indicators (mortality rate, infant mortality rate, specific mortality rate and specific morbidity rate) and an aggregate index (health index). Combining statistic analysis and spatial analysis, the study offers the possibility of comparing the rural areas with urban area, and it can be a base for further studies. The health services, ageing and the characteristics of lifestyle could explain the territorial disparities in health status. A health study can reveal important details about economic features, social behavior, mentality and social environment.

Keywords: health status, lifestyle, rural population, health problems, Ialomița county, health survey, statistics

1. Introduction

Health was studied differently over time according to the level of industrialization, development of society and awareness of science. At the beginning, health was studied strictly from the medical or biological point of view, nowadays it has become an interdisciplinary subject for study. The plurifactorial model appeared after 1950, a model in which the disease is seen as an imbalance in body function that appears due to external factors (Vlădescu, 2000).

Health status depends on many factors that are interrelated: genetics, behaviours, attitudes and values, lifestyle, social position (Brown et al., 2010). Lifestyle has a greater weight in determining the health status of the population,

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according to the studies made in Romania, about 51%, compared to other determinants such as biological factors (20%), environment (19%) or healthcare (10%).

In the 20th century one can talk about „epidemiological transition”: fewer people die from infectious diseases or nutrition problems, but living longer they are exposed to risk factors for cardiovascular diseases (Curtis and Taket, 1996). These heart diseases are specific in the developed countries and they are closely related to people's behaviors on health.

A British study established that mortality rates were higher in cities with softer water, due to lack of minerals (calcium, magnesium) and the presence of sodium, iron and cadmium. Other factors were considered to be the social class, the local climate, the job (manual workers or intellectuals), negative temperatures and the percentage of rainy days (Pocock et al, 1982).

Studies set in Canada, Australia, and USA have indicated higher overall mortality rates among rural populations. For example, higher mortality rate from suicide and cancer mortality are more prevalent in rural areas in USA. Smoking, physical inactivity in leisure time, and obesity have also been reported to occur more frequently among rural populations (Eberhardt et Pamuk, 2004).

Although data and studies show that the health status of the rural population is poorer than the urban population, rural lifestyle is considered to be healthier by its organic food, the possibility of more intense physical activities and the air less polluted.

Previous studies have shown that the Romania's population health is poor compared to other European countries. Moreover, the Eastern European countries that have much higher mortality rates than those in the West part of the continent. Romania stands out with one of the highest mortality rates. For example, in 2011, countries like Netherlands, Great Britain, Denmark, Spain, Switzerland, Belgium recorded mortality rates below 10 ‰, and Romania recorded values of 11.8‰. The same difference occurs in case of infant mortality rate: with values of 9.4 ‰ in 2011, Romania is badly positioned compared to countries such as Serbia, Ukraine, Croatia, Spain and Netherlands, with values ranging from 3.6 to 9 ‰ (Eurostat Database, 2013).

In the European Union, circulatory system diseases, particularly cardiovascular diseases, and cancer are the leading causes of death (WHO, 2009). The differences appear between continents, countries, regions, areas of living and social environments.

The differences between regions and residence (urban-rural) in communist countries become more evident after 1990, as in the cities were introduced new medical treatments, new technologies, and modern medical services, while in villages the health education was absent and the medical system was based on treatment not prevention (Alber and Kolher 2004).

In many E.U. countries, the residence is not an important factor in evaluating health. The area of residence becomes more important in countries where the differences between urban and rural areas are large, such as Romania and Bulgaria (Precupețu, 2008).

In Romania still exists high disparities between mortality rates by gender, residence, regions, counties and age group. Men have higher mortality rates than women have, the rural areas have higher values compared to urban areas, and mortality rates increase with the advance of age (Pop, 2010).

In Romania, between 2006 and 2011, the general mortality rate varied: from 12‰ in 2006 increased in the period 2007-2010 and decreased after 2010 and in 2011 was 11.8‰. In the same period, the infant mortality rate decreased from 13.9‰ in 2006 to 9.4‰ in 2011 (National Institute of Statistics, 2013). The differences are also between regions: in 2011, Bucharest-Ilfov Region had the lowest infant mortality rate (5.7‰) and South East Region had the highest infant mortality rate (11.3‰). The region in which is situated Ialomița county (South Muntenia) had the highest value of general mortality rate (13.2‰) and the infant mortality rate of 10.3‰.

Comparing with other Romanian counties, one can notice that in 2011 Ialomița county had a higher infant mortality rate (12.7‰) and general mortality rate (13.6‰) than counties like Bihor, Brașov, Sibiu, Iași, Constanța, Prahova and Arad (National Institute of Statistics, 2013).

Comparing the rural and the urban areas in Romania, in 2011, one can notice that the general mortality rate was higher in rural areas (14.2‰) than urban areas (9.8‰). The difference exists also in case of infant mortality rate: 11.8‰ in rural areas and 7.5‰ in urban areas (National Institute of Statistics, 2013).

The study area is Ialomița county, located in the south-east part of Romania, in Bărăgan Plain, close to Bucharest area, with a dominant rural population (54.2% in 2008). The administrative structure of the county contains three municipalities (Slobozia, Urziceni and Fetești), four cities (Fierbinți-Târg, Amara, Căzănești and Țândărei) and fifty nine villages.

2. Methodology

The objectives of this study were to highlight the key indicators of health status, to highlight the regional differences and the possible determinants based on preliminary results of the health survey conducted in Ialomița county. This health survey was applied in December 2013, in four sample localities chosen after calculating the health index (Slobozia, Bărbulești, Platonești and Balaciu), and its objective was to reveal the strong relationship between lifestyle and health status.

For this study, it has been used a bibliographic investigation for understanding the factors that determine the health status of population, followed by the research of the organizations specialized sites (World Health Organization, OMS Romania) and scientific articles on the subject.

The statistical investigation that followed included collecting, processing and analyzing the primary statistical data obtained from the National Institute of Statistics, Ialomiţa County Institute of Statistics and D.S.P. Ialomiţa (Ialomiţa Public Health). It was also calculated an aggregate index based on health indicators (mortality rate, infant mortality rate, specific mortality rate and specific morbidity rate), which were standardized (Dumitrache, 2004). More exactly, there were 12 indicators (mortality rate, infant mortality rate, specific mortality from circulatory diseases rate, specific mortality from respiratory diseases rate, specific mortality from digestive diseases rate, specific mortality from cancer rate, morbidity caused by circulatory diseases rate, morbidity caused by respiratory diseases rate, morbidity caused by digestive diseases rate, morbidity caused by cancer rate, and life expectancy) that were standardized for the years 2008, 2009, 2010, 2011 and 2012. The health index obtained has values between 0 and 1, showing a good health when the values are close to 0 and a poor health when the values tend to 1.

The spatial analysis was based on maps obtained using Quantum GIS, on statistic data and health survey applied in four localities. The topic of the survey was based on the main components of lifestyle, and the responses obtained were useful to create an image of lifestyles in urban and rural areas.

3. Results and discussions

Analysis the health indicators show that in chronic diseases the first 5 places are occupied by hypertension, ischemic heart disease, diabetes, ulcers and chronic lung diseases (National Institute of Statistics, 2010). In Ialomiţa county, the main cause of death is represented by the cardiovascular disease: hypertension is highly prevalent among the elderly and adults as a direct result of an unhealthy lifestyle and an indifferent attitude towards keeping health, periodically control and prevention (Ialomiţa Institute of Statistics, 2012).

In rural areas, the general mortality rate is higher compared to urban areas (*Fig. 1a*). In the period 2008-2011, the general mortality rate in rural areas increased from 16.5‰ to 18.3‰, and started to decrease after 2011 to 17.1‰ in 2012. The causes of death remain valid in 2012 as in the past years: diseases due to circulatory system, digestive diseases, respiratory diseases and traumatic injuries. Moreover, the differences are significant between rural and urban when it comes about mortality due to circulatory system diseases, the rate in the rural area is almost double (*Fig. 1b*).

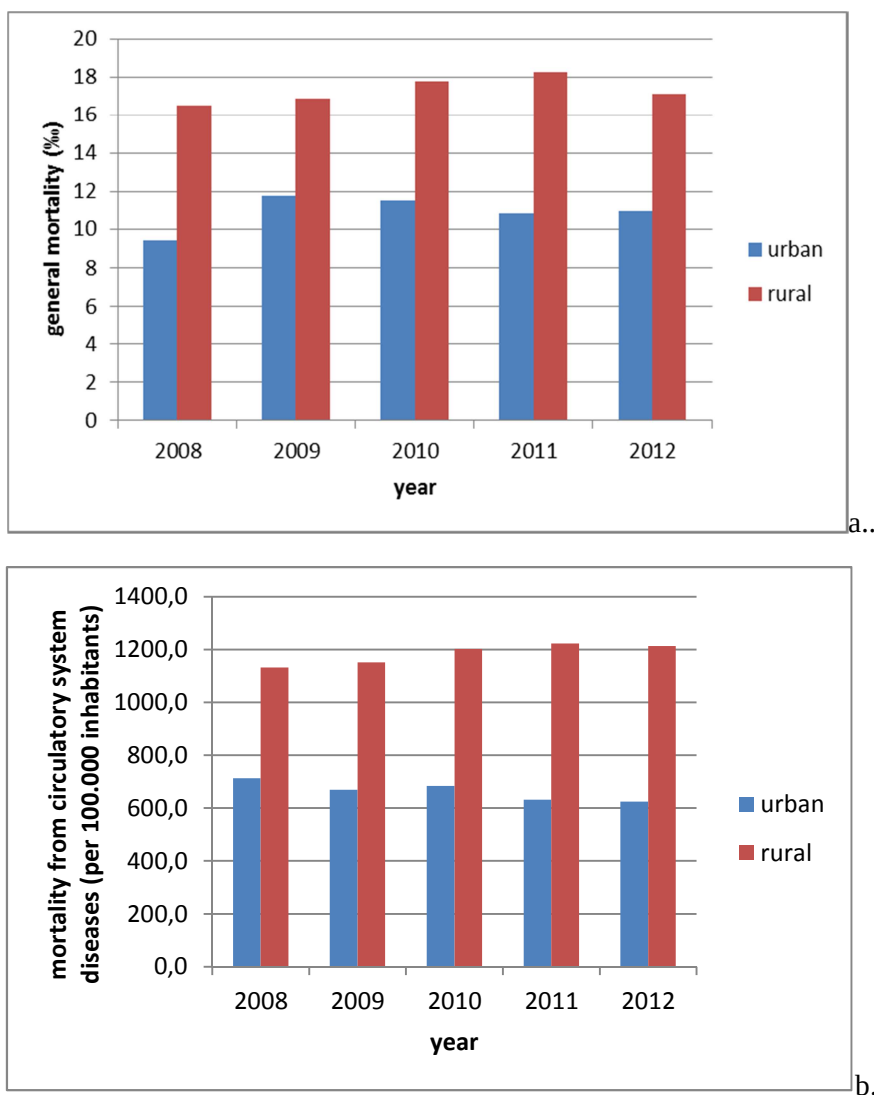


Fig. 1. The evolution of mortality between 2008-2012: a. general mortality rate; b. mortality due to circulatory system diseases.

Source: D.S.P. Ialomița (Ialomița Public Health Directorate)

Analyzing the evolution of morbidity between 2008-2012, one can notice that the number of diseases due to circulatory system diseases is much higher than diseases due to respiratory diseases, which reveals the fact that the lifestyle has a bigger influence than external factors (Fig 2). The culture (religion,

customs, cultural environment) has a bigger influence on health than space and natural environment have (Gesler, 2002).

In 2010 was recorded the highest number of illnesses and in the rural area the morbidity due to circulatory system diseases decreased after 2010, and the morbidity due to respiratory system diseases has increased after 2011. This fact can lead to two assumptions: the rural population becomes more careful with their health and the decrease is real, or they started to avoid going to the doctor and the number of illnesses decreased only in statistics.

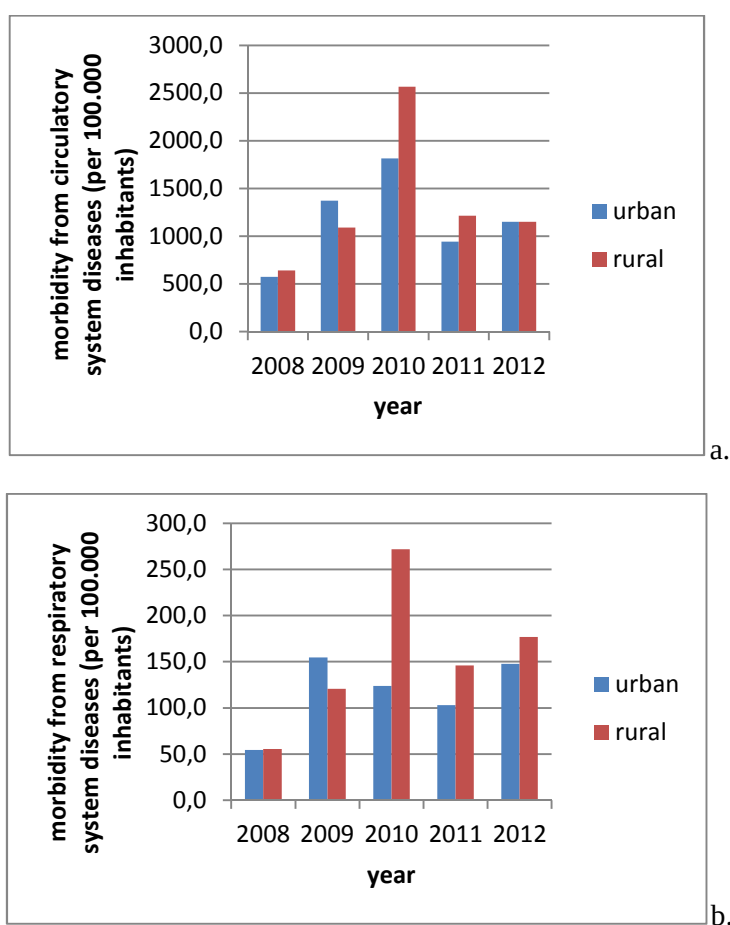


Fig 2. The evolution of morbidity between 2008-2012: a. from circulatory system diseases; b. from respiratory system diseases

Source: Ialomița Institute of Public Health

The frequency of diseases is associated with physical, biological and social factors, more exactly with climate, natural biological environment and anthropological environment (Sorre, 1933). The social environment affects the health status, and a good example can be found in the poor countries, where disease and poverty are closely linked: low income, poor diet, and low access to health services.

Age is an important issue that should not be missed when talking about mortality and morbidity. Age is a critical factor for health status. Metabolism changes in response to different energy requirements when behavioral roles change with age and growth, and physical maturation (Meade, 2010). Demographic aging is evident in the rural areas of Ialomita county (Figure 3), although the birth rate is quite high and the number of those who leave for a job in urban areas is high. The effects of the demographic aging are felt in the economic, social and health domains.

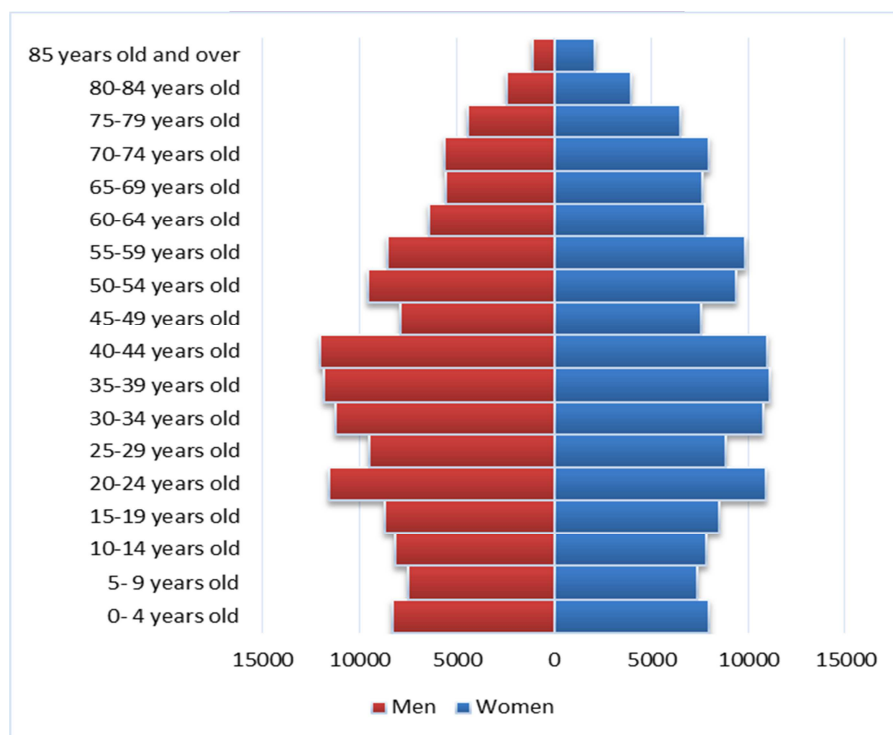


Fig 3. Pyramid by age and sex of rural population in Ialomita county (2010)

Source: Ialomita Institute of Statistics

Along with ageing increases the vulnerability to disease, so the mortality rate is higher among those over 60 years old (Figure 4). Therefore, the

demographic differences that exist between the rural and the urban population make the health status to be different between the two environments: rural ageing population show a poorer health status compared to urban population.

It is well recognized that the urban population has better health status than the rural population (Blaxter, 1990). The causes are multiple: differential access to healthcare, medical technology, information and promotion paths, different mentalities etc. This happens also in Ialomiţa county: poor health is where the population is poorly educated, the incomes are low, health services are poorly developed and / or partially accessible, the lifestyle is chaotic. In the future, these discrepancies between the two areas will accentuate the differences between the health status of Ialomiţa population.

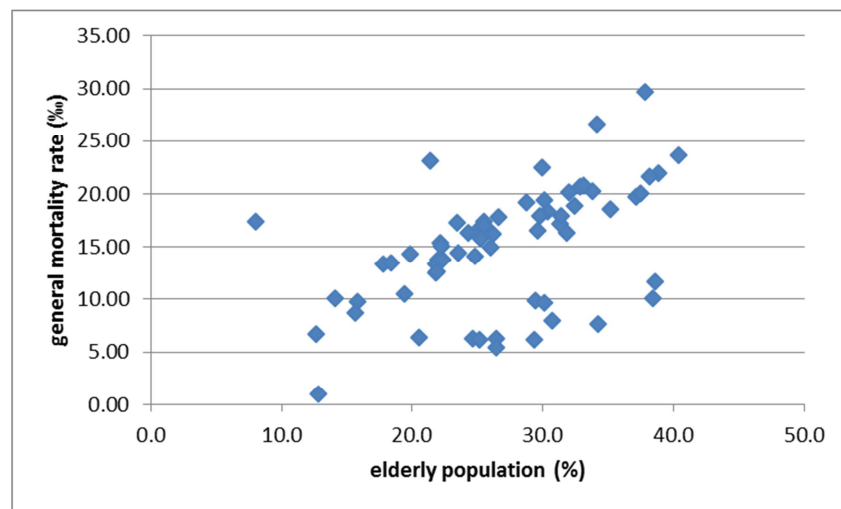
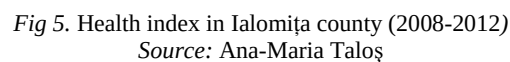


Fig. 4. The relation between mortality and age
Source: Ialomiţa Institute of Statistics

The differences between the urban and the rural health status can be observed through the multiannual average of health index: in the rural areas it has higher values, which indicates a poorer health status than in the urban areas (Fig 5).

The areas with a poor health status are located in the West part of the county, in localities characterized by a high share of population over 60 years old (Balaciu, Brazi, Valea Măcrişului, Dridu, Adâncata, Armăşeşti, Cocora, Bărcăneşti), reflecting the role that age is playing in assessing the health of the population. Also in the West part are some localities with a good health status (Urziceni, Drăgoeşti, Roşiori, Borăneşti, Bărbuleşti, Sfântul Gheorghe) that are close to the urban area influence.

The areas where the health index has moderate values are: the urban areas (the seven cities of the county) and some localities from the Central and Eastern part of Ialomița county. Here, the access to health services is made easier due to the proximity of the cities, the greater financial resources and the modern lifestyle. One can notice that the East part of Ialomița county (from Amara and Slobozia city to Fetești and Giurgeni) has the best health status, with values of health index under 0.300.



Compared with urban areas, the health status of rural population has improved between 2008 and 2010, while the urban population had the same health status in 2008 and 2009. In both residences, after 2010 the health became

worse and this happened simultaneously with the progress in the medical field, as a consequence for ageing and increasingly adoption of an unhealthy lifestyle.

Analyzing the two values of health index in 2010, one can observe the advantage of urban areas (0.134) compared to rural areas (0.184) and a better health status. The same happens in 2012: value of 0.248 in urban areas and 0.317 in rural areas.

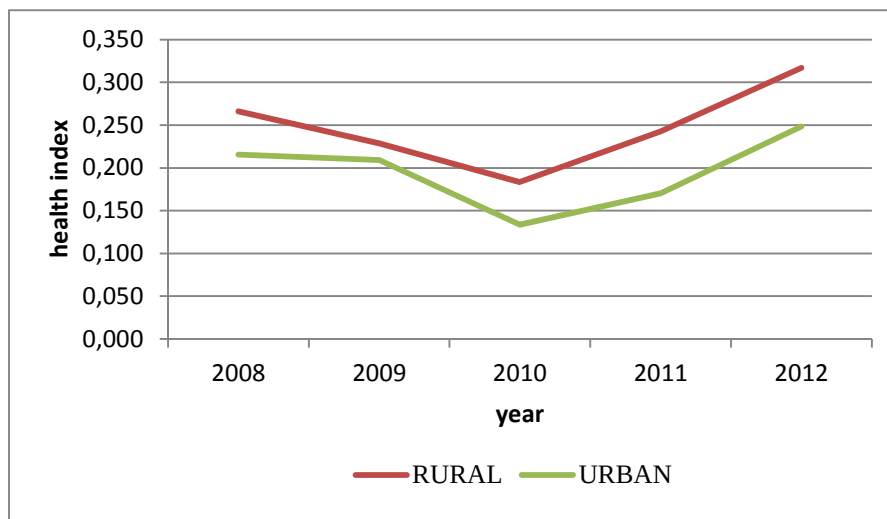


Fig. 6. The evolution of the health index between 2008 and 2012
Source: Ana-Maria Talos

Using the data from National Institute of Statistics, the author created a morbidity model for Ialomița county, with the main causes of disease for the years 1988 and 2010: infectious diseases; cancer; circulatory system diseases; respiratory system diseases; digestive system diseases; injuries, poison and other causes (Fig 7).

This model shows that the reasons for visiting the doctor are pain and health problems, visible in the big percentage of respiratory and digestive system diseases, as these diseases have symptoms. On the other side, the small percentage of cancers and circulatory system diseases shows no regular medical control and a low medical education: these diseases don't have major symptoms and they are detected late, being the main causes of death.

Comparing the two models in different years, one can notice a small improvement in 2010: the number of respiratory system diseases decreased from 55,51% to 42,89%, also the number of infectious diseases decreased from 4,39% in 1988 to 3,23% in 2010, which reveals a better health education and better medical services in 2010 compared to 1988. On the other side, the

number of digestive system diseases, cancers and circulatory system diseases increased in 2010 which shows a worse lifestyle (bad nutrition, less physical activity, daily stress, smoking and alcohol abuse).

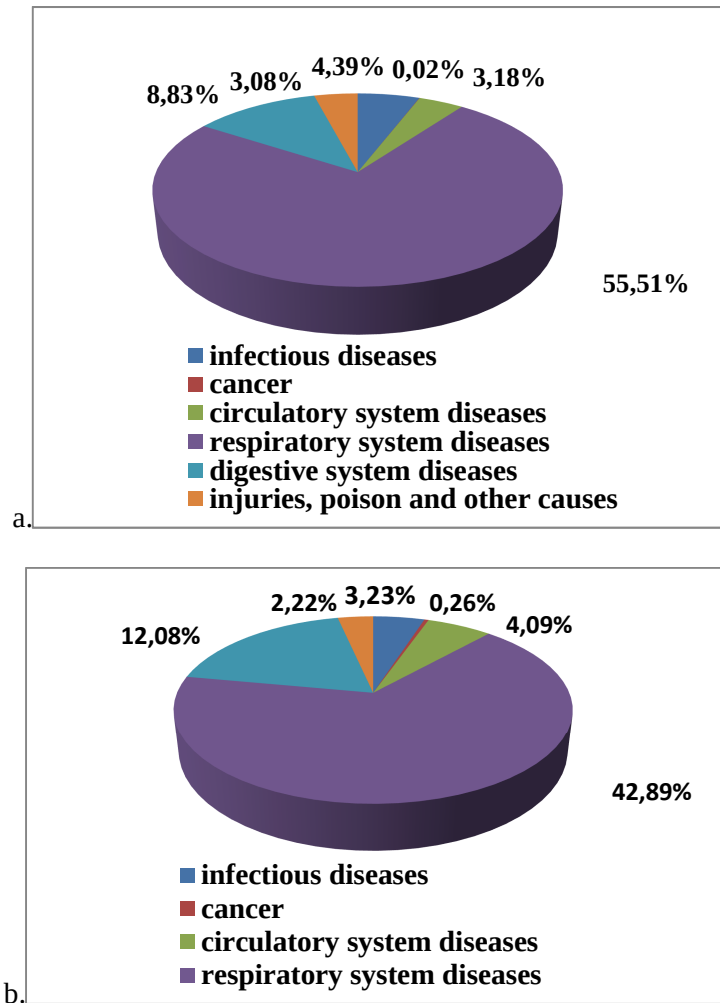


Fig 7. The morbidity model in Ialomița county:a. in 1988;b. in 2010

Source: National Institute of Statistics

After applying the health survey, from preliminary data, the author observed the differences between the lifestyle of rural and urban population. In rural areas the nutrition is more balanced as the meals of the day are strictly respected, the physical activities are intense, but the alcohol consumption is very popular, also the medical visits are rare and the stress level is medium.

On the opposite, the lifestyle in urban areas is more chaotic: dinner is the most important meal of the day, less physical activities, high level of stress, smoking and bad addressability to medical control. In the rural areas exists the possibility of natural food, but the lack of health education causes the adoption of harmful behaviors.

4. Conclusions

In this study were analyzed health statistics in order to highlight the inequalities that exist in the health status of Ialomița county, to identify the determinants and to analyze the health status of the rural population of Ialomița county. The results were obtained after a statistic analyze, through health data, and spatial analyze, using health maps.

After analyzing the health indicators, we concluded that the rural population has a worse health status than urban population, as the mortality and morbidity rate are bigger in the rural areas.

The analyze of the main determinants of the health status revealed the fact that there is a close connection between health and the age of population, which is very visible in rural areas. The personal lifestyle will be created according to the financial situation, age, education, job, traditions, mentalities, living environment, and it will affect the individual health.

The rural area has an important influence in learning habits, behaviors and attitudes that create a lifestyle, and they are hard to be modified during life, sometimes only in extreme cases (pain, illness etc.). For example, the rural population call the medical services only in cases of extreme need.

The characteristics of the rural environment give some special medical habits like no periodically medical control, the use of natural products instead of pills, drinking low quality alcohol, smoking etc. Although there are also some advantages like the possibility for food production for personal use and more choices for physical activities in the middle of the nature.

The concept of "healthy lifestyle" is known theoretically by the rural population, but the rules aren't applied in daily life for different reasons: financial resources, age, disregard about maintaining the personal health, the importance of ancient traditions, ease or poor time management.

In addition to external factors (bad information, poor accessibility to health services and modest financial situation), also the lifestyle components are neglected: nutrition, physical activity, stress, lack of disease prevention behaviours, alcohol abuse and smoking.

In the rural area, long-term information about healthy lifestyle should take into account a number of issues: promoting the prevention behaviours (blood tests); financial support for those with modest resources in order to have

an easy access to medical services; restrictions about the low quality alcohol and smoking; investment in health education and media education through public messages.

In Ialomița county, the local patterns of mortality and morbidity don't overlap, because there are differences in their structure: respiratory system diseases are the leading cause of morbidity, but not the main cause of death being easily detected and treated.

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THE IMPLICATIONS OF CHINA'S ECONOMIC GROWTH FOR THE OIL SECTOR

VASILE POPA¹, OCTAVIAN COCOS¹

Abstract:

China, the most populated state on the planet, has experienced a spectacular economic growth after 1978, with a mean annual growth rate of GDP of about 10%. Thus, China has become the second largest world economic power. Economic development has entailed significant social-economic changes, increasing life expectancy and urbanization degree. At the same time, the power demand (oil included) has grown considerably and not before long, China has become the largest energy consumer and the second oil consumer in the world. But, being unable to ensure its increasing demands from internal sources, starting with 1993, China has become a net importer of oil. A good indicator for oil consumption increase is the big number of vehicles that drive along the China's roads. As the driving force of the economy, the meeting of energy demands is one of the main priorities of every state, but the access to resources may become increasingly difficult if they start to dwindle, while the technological progress lags behind.

Keywords: *China's economic growth, increase of oil consumption, competition for oil*

China's economic growth

After a long period of stagnation, between 1860 and 1949, followed by a moderate growth during the interval 1949-1978 (*Mao Zedong* period), China has seen a spectacular economic boom following the reforms initiated by *Deng Xiaoping*, which focused on the opening to the foreign trade and on investment attraction (*Thomas, 2007; World Bank, 2012*). China, the most populated state of the planet (1.3 billion people), has become in 2010 the second largest economic power in the world, outgrowing Japan, and by 2020 it is also deemed to outgrow the United States (*Table 1*).

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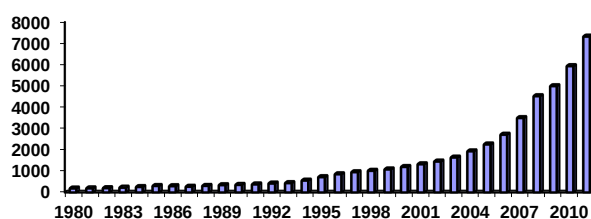


Fig. 1 China's Gross Domestic Product (billion dollars) (Source: World Bank)

According to the *World Bank*, China's GDP has increased from 189 billion dollars in 1980, to 7318 billion dollars (11347 billion dollars at the purchasing power parity) in 2011 (*fig. 1*). As far as the GDP per inhabitant is concerned, the increase was equally substantial, from 193 US dollars in 1980, to 5445 dollars (8466 dollars at purchasing power parity) in 2011. The mean annual growth rate of GDP during the interval 1980-2011 was about 10%.

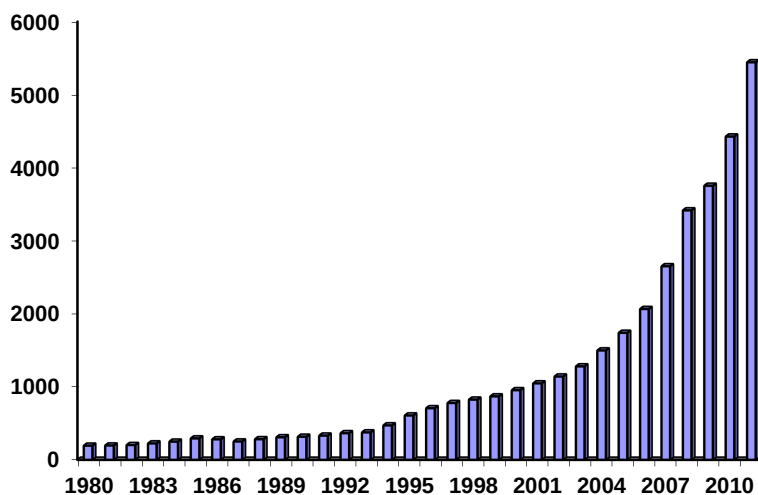


Fig. 2 China's GDP per capita(dollars) (Source: World Bank)

Table 1 Estimation of GDP increase (at purchasing power parity) (billion dollars)

No.	State	GDP 2011	No.	State	GDP 2017	No.	State	GDP 2050
1.	USA	15094	1.	China	20198	1.	China	59475
2.	China	11347	2.	USA	19745	2.	India	43180
3.	India	4530	3.	India	7042	3.	USA	37876
4.	Japan	4381	4.	Japan	5305	4.	Brazil	9762
5.	Germany	3221	5.	Germany	3692	5.	Japan	7664
6.	Russia	3031	6.	Russia	3296	6.	Russia	7559
7.	Brazil	2304	7.	Brazil	3146	7.	Mexico	6682
8.	France	2302	8.	Great Britain	2810	8.	Indonesia	6205
9.	Great Britain	2287	9.	Franța	2612	9.	Germany	5707
10.	Italy	1979	10.	Mexic	2253	10.	Great Britain	5628

Source: World Bank (for the data of 2011), IMF (for the estimation of 2017) and PricewaterhouseCoopers (for the estimation of 2050);

Energy consumption growth

The rapid development of the last decades has brought about essential changes in all spheres of social-economic life. Thus, according to the China Statistical Yearbook (2012), during the interval 1982-2010, the population grew from one billion to 1.3 billion people, life expectancy increased from 67.7 to 73.8 years, urbanization degree from 20.0% to 49.7%, while the illiteracy rate diminished from 22.8% to 4.1%.

This social-economic dynamics has created an increasing pressure on energy consumption, the demand becoming higher and higher, especially in the fields of industry and transportation (fig. 3). Thus, in 2009, according to *International Energy Agency*, China became the largest energy consumer in the world. In 2011, China consumed 21.3% of the world energy. Today, China is considered to consume 49.4% of the world's coal production, 11.4% of the oil production, 4% of the natural gas production, 19.8% of the generated hydropower, 3.3% of the power produced in the nuclear stations and 9% of the energy coming from renewable sources (*BP Statistical Review of World Energy, 2012*). Over the interval 2001-2011, the mean annual growth rate of energy consumption was 9.7%.

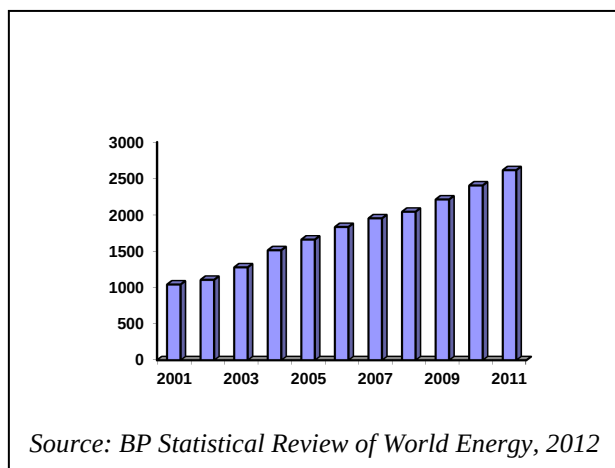


Fig. 3 China's energy consumption (million tons of oil equivalent)

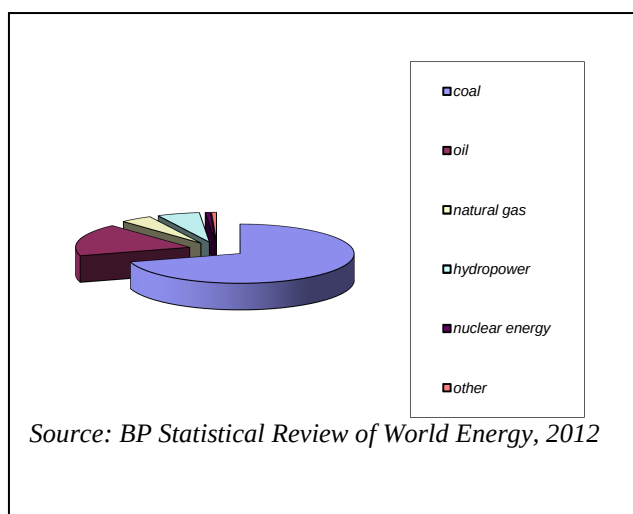


Fig. 4 Structure of China's energy consumption in 2011 (%)

At present, due to its large coalfields, lying mainly in the northern part of the country, China covers about 70.4% of its energy demand. The rest of the energy is supplied by oil (17.7%), hydropower (6%), natural gas (4.5%), nuclear energy (0.7%) and other sources (0.7%) (fig. 4). Because of the high coal production (2.7 billion tons, i.e. 45% of the world coal yield), the oil share in China's energy consumption is significantly lower in comparison with the global scale situation, which is 33.1% (BP Statistical Review of World Energy, 2012).

China's oil production and consumption

According to the *BP Statistical Review of World Energy* (2012), China's oil production has grown from 106 million tons (2.1 million barrels per day) in 1980 to 203.6 million tons (4.1 million barrels per day) in 2011, which means almost half as much (*fig. 5*). On the other hand, oil consumption increase during the same period was much more substantial, from 88 million tons (1.7 million barrels per day) to 461.8 million tons (9.7 million barrels per day). At present, China pumps 5.1% of the global production and consumes 11.4%. It is estimated that according to the present tendencies, in 2030 China's oil consumption will reach more than 16 million barrels per day, although the production will diminish (*International Energy Agency, 2012*). Unable to keep up with the growing consumption needs of the population and economy, starting with 1993 China has become a net importer of crude oil.

The increase of oil consumption in China over the period 1980-2011 was very high in comparison with other developed states. Thus, during this time, Japan and Germany have seen a drop of oil consumption, while the United States has experienced a moderate growth. On a global scale, consumption increased by 1.1 billion tons (from 2.9 billion tons to 4 billion tons). If we refer only to the interval 2000-2011, the consumption growth rate was 100% in China, and only 15 % at global scale. As far as per capita consumption is concerned, in 2011, it was 2.6 tons in the United States and only 0.34 tons in China, i.e. nearly over seven times lower. If the states of the world would approach, even to a lesser extent, the per capita consumption of the developed countries, this would put a huge pressure on the world market and the oil price.

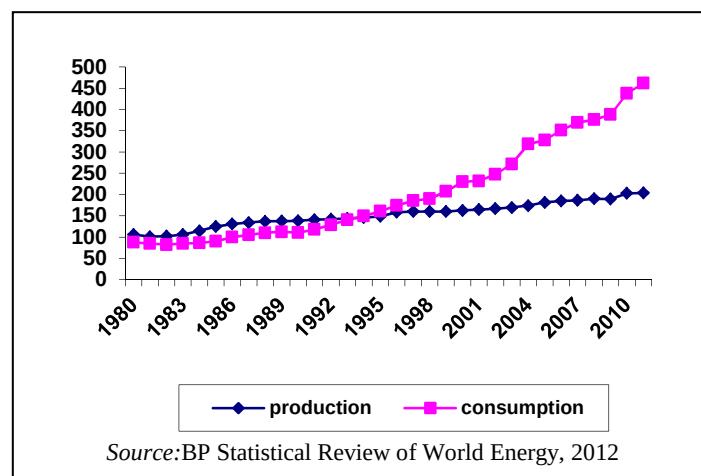


Fig. 5 China's oil production and consumption (million tons)

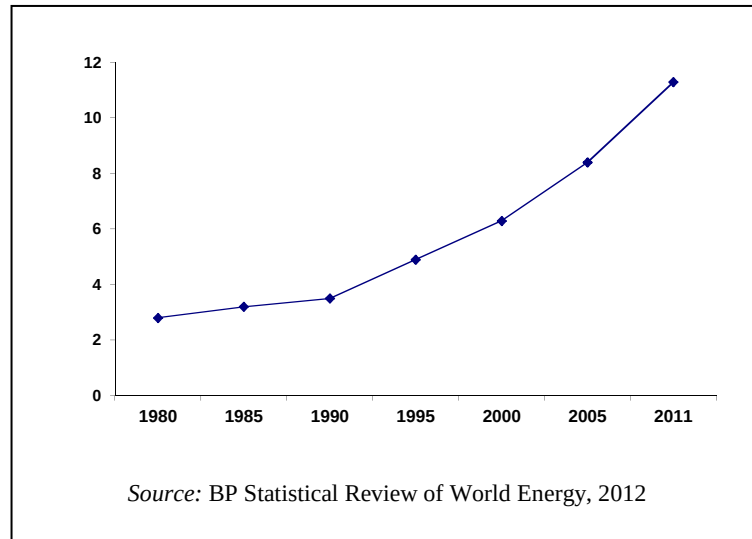


Fig. 6 China's share in the world oil consumption (%)

The increasing number of motor vehicles

A good example in what regards the increase of oil consumption is the growing number of Chinese registered motor vehicles. It is no wonder that this country has become the largest vehicle manufacturer in the world, with a production of more than 18.4 million items in 2011 (*OICA, 2012*). Over the period 1980-2010, the number of privately owned and public vehicles (cars, trucks, buses) travelling on public roads has increased from 1.8 million, of which 350000 passenger vehicles, to 78 million, of which 61.2 million passenger vehicles (*China Statistical Yearbook, 2011*). In the last decade, the number of new registered vehicles has risen from 3.3 million in 2002 to 15.2 million in 2010 (*Fig. 8*).

In 2030, China could get to possess between 247 million and 287 million vehicles (cars, trucks, buses), which, together with the motorcycles and rural vehicles, would consume between 354 million and 497 million tons of oil (*Wang et al., 2006*). By contrast, in 2005 the Chinese vehicles consumed only 108.6 million tons of oil, which accounted for a third of the national consumption.

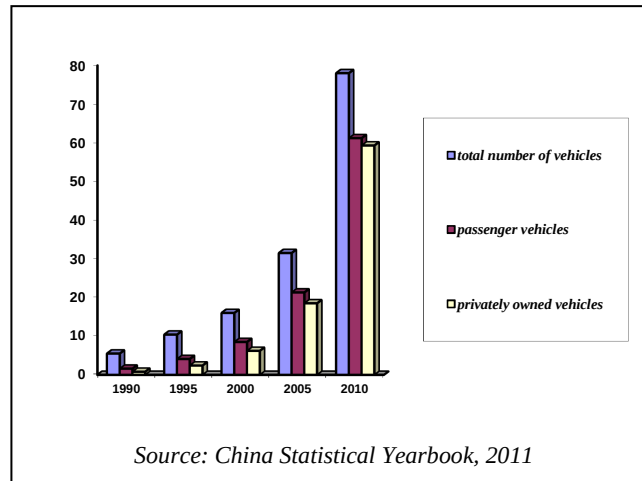


Fig. 7 The number of motor vehicles in China (million items)

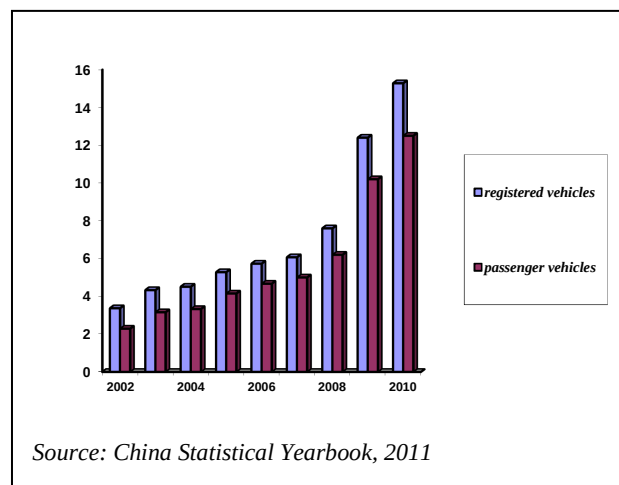


Fig. 8 New civil vehicles registrations (million items)

China's oil strategy

Being the driving force behind the economy, meeting the energy demand is undoubtedly one of the main concerns of the Chinese state. Any crisis in oil

supply, triggered by domestic or external factors, may lead to serious social-economic unbalances. In order to avoid such undesirable situations, China strives to implement a number of measures, as follows: the development of new oil fields, the involvement in international oil exploration and processing, the diversification of import sources and transportation routes, and the slackening of its dependence on the oil sources of the Middle East.

The identification of new domestic oil fields is a must, inasmuch as the large Chinese active fields, *Daqing*, to the northeast, with a production of 800 thousand barrels per day in 2011, and *Shengli*, in the Bohai Gulf, accounting for 547 thousand barrels per day, have already reached maturity, being in operation since the 1960s (*U.S. Energy Information Administration, 2012*). In the last few years, the Middle East, and especially Saudi Arabia, Iran and Oman, has been the major import source, followed by Africa, mainly Angola, which is the third African oil producer (*tab.2*). The slackening of the dependence from the Middle East, which by 2011 ensured 51% of the imported oil, is also motivated by the solid political and military influence of the United States in the region.

The orientation to Kazakhstan and Russia, which have become more and more important partners to China, has resulted in the implication in various oil projects, including pipelines construction. Thus, the first transnational oil pipeline, coming from Kazakhstan (Atasu-Alashankou/Xinjiang Uygur A.R.) became operational in 2006, while the first oil pipeline from Russia (Skovorodino-Mohe-Daqing) was put into use in early 2011. The Russian oil pipeline, which enters the Chinese territory near Mohe, is a branch of the ESPO pipeline (Eastern Siberia-Pacific Ocean), meant to transfer the Russian oil to the Asia-Pacific market.

Over the last years, the state-owned Chinese oil companies (CNPC, Sinopec) have been actively engaged in many regions of the world, and especially in Africa, Central America and Latin America. Within the context of world economic crisis and taking advantage of political and financial support, Chinese companies have become strong competitors of the large multinational oil companies. The substantial loans offered by some Chinese banks, as for instance the 10 billion dollars loan granted by China Development Bank to the Petrobras Company of Brazil in 2009, were crucial for the access of the Chinese companies to oil or infrastructure projects in Angola, Sudan, Venezuela, Brazil, Chad or Equatorial Guinea (*Christie et al, 2009*). In September 2008, Venezuela, one of the world's largest oil producers, signed a series of energy co-operation deals with China, that oil exports could rise threefold by 2012 to one million barrels per day (*BBC News, 25 September 2008*).

Table. 2 China's crude oil import sources

No.	1993	%	No.	2003	%	No.	2011	%
1.	Oman	26,1	1.	Saudi Arabia	16,6	1.	Saudi Arabia	19,7
2.	Indonesia	25,6	2.	Iran	13,6	2.	Angola	12,2
3.	Yemen	10,6	3.	Angola	11,1	3.	Iran	10,9
4.	Angola	7,8	4.	Oman	10,2	4.	Russia	7,7
5.	Papua New Guinea	5	5.	Sudan	6,9	5.	Oman	7,1
6.	Libya	4,5	6.	Russia	5,8	6.	Iraq	5,4
7.	UAE	3,6	7.	Vietnam	3,9	7.	Sudan	5,1
8.	Malaysia	3,3	8.	Congo Republic	3,7	8.	Venezuela	4,5
9.	Australia	2,6	9.	Indonesia	3,7	9.	Kazakhstan	4,4
10.	Singapore	2	10.	Malaysia	2,2	10.	Kuwait	3,7

Source: UN Comtrade/Christie et. al (for the data of 1993 and 2003) and EIA (2011)

Increasing competition for oil

From the energy point of view, the future geopolitical evolutions will depend to a large extent on two essential factors: the level of oil resources and the technological development in the field of energy. In the event that resources will not be able to meet the increasingly oil consumption needs and the technological development will not make consumption more efficient, we might expect a more aggressive competition in terms of the access to the world's oil resources. Judging by the current reserves and consumption rates, we can estimate that oil reserves will last for 54 years, of which 10.8 years in the United States and 9.9 years in China. The world trade in oil and oil products was 54.6 million barrels per day in 2011, which means an increase by 2% in comparison with 2010. China's share in this trade was 6.65 million barrels per day (5.08 million barrels of crude oil and 1.57 million barrels per day of oil products), i.e. an increase by 13% (*BP Statistical Review of World Energy, 2012*). In 2030, according to the *International Energy Agency*, China's dependence on foreign oil will be 80%.

In this context, crude oil prices may record large fluctuations, which may have negative effects on economy, public transportation and agriculture. How much will contribute China to oil prices increase is still debatable, however this is a fact.

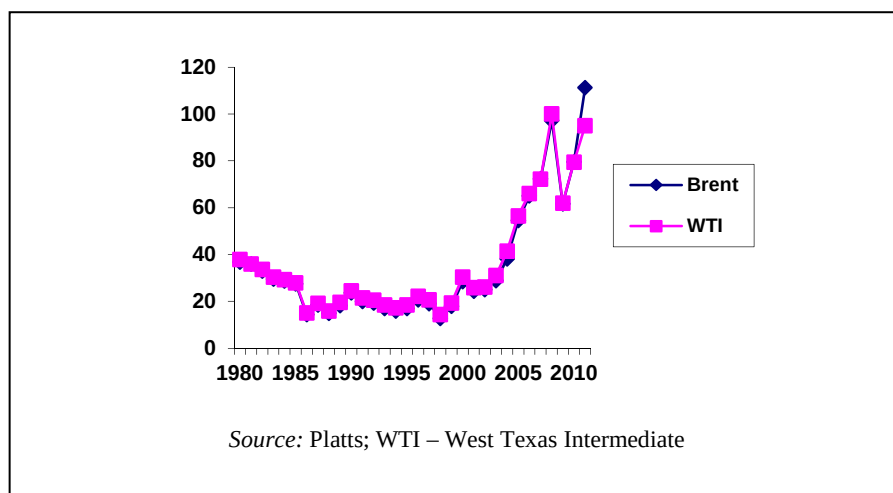


Fig. 9 Oil prices (dollars per barrel)

In conclusion, could be China's economic growth a subject of concern? This is a difficult question to answer. The fact is that China's social-economic dynamics of the last decades has induced significant changes at international level, including in the oil market. Also worrying is the fact that environmental protection in the context of the increasing consumption of fuels, both in the power plants and in the vehicles' engines, leads to an increase of CO₂ emissions, which have a negative impact on climate change. Last but not least,, this economic growth is subject of concern for the large energy consumers and oil companies, both in terms of energy supply and its price. The emergence of this state as a major global competitor may be beneficial, boosting the interest for energy saving and for the development of new technologies.

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LES HÔTELS DE PATRIMOINE DE BUCAREST : ENTRE CONSERVATION, TRANSFORMATION ET DÉMOLITION

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Abstract

Le patrimoine construit représente une ressource qui joue un rôle important dans la régénération et la promotion des villes. L'article analyse les immeubles des hôtels de patrimoine de Bucarest, anciens et encore en fonction, prenant en considération leur état de préservation et leur trajet comme destination économique. L'étude des trois catégories des hôtels identifiés (préservés, transformés et démolis) facilite la compréhension de l'histoire hôtelière au niveau de la capitale pendant les dernières deux siècles et de l'approche concernant les projets urbains mis en œuvre pour différents enjeux économiques, n'oubliant pas le côté culturel.

Mots-clés: patrimoine construit, hôtels de patrimoine, reconversion fonctionnelle, Bucarest

1. Introduction

Le patrimoine construit de Bucarest est à la base de l'histoire de la capitale, une ville des contrastes et contradictions du point de vue architectural, ainsi que fonctionnel. Dans l'ensemble, il s'agit de bâtiments construits à la fin du XIX^{ème} siècle et au début du XX^{ème} siècle, avec des influences architecturales diverses, dont les empreintes française et anglaise ont eu un rôle décisif dans la projection de l'architecture bucarestoise et même dans les noms des bâtiments.

L'histoire des hôtels de Bucarest commence avec la première moitié du XIX^{ème} siècle, quand les premiers hôtels apaisaient, c'est-à-dire les hôtels Brenner et Hugues. Leur nombre réduit et le rythme lent d'augmentation des investissements hôteliers font que, pour une période de temps, l'hébergement dans la capitale soit représenté toujours par les auberges, dont l'origine se situe à la moitié du XVII^{ème} siècle (Cercleux, Merciu, Merciu, 2011, p. 52).

L'analyse de leur apparition dans le temps met en évidence quatre périodes de construction comme les plus importantes :

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- a. *1850-1900* – caractérisée par des hôtels de plus en plus modernes - Hôtel de France, Hôtel zur Stadt Wien, Hôtel de Londres ou Hôtel St. Petersburg, Fieschi, Grand Hôtel du Boulevard, Brofft, Union, Métropole, Manu, Orient, Oteteleșanu, Hôtel de Pesth, Concordia, Victoria, Dacia, Gabroveni, Patria, Simion, Moldo-Român, Transilvaniei, Hôtel de Bulgarie, Neubauer, Avram, d'Athènes (Parusi, 2007, p. 262 et 346) ;
- b. *l'entre-deux-guerres (1918-1939)* – pendant cette période l'aménagement des hôtels qui portaient des noms français et anglais continue; du point de vue du confort il s'agissait des hôtels de luxe (Bulevard, Splendid, Athenée Palace, Stănescu et Union) et des hôtels de I^{er} et II^{ème} rang (Parusi, 2007, p. 563, cité par Cercleux, Merciu, Merciu, 2011, p. 53) ;
- c. *1970-1990* – cette période correspond à la réouverture des hôtels fermés antérieurement - Bulevard, Continental, Capitol et Capșa, à l'inauguration de nouveaux hôtels (comme Hôtel Capitol– en 1976, l'ancien Hôtel Luvru, Hôtel Intercontinental– en 1971, Hôtel Dorobanți – en 1977 ou le complexe hôtelier Lebăda– en 1984), ainsi qu'à la démolition d'un nombre significatif d'édifices (y compris des hôtels) pour le projet du nouveau plan de systématisation de la capitale (Hôtel de France, par exemple);
- d. *après 1990* – plusieurs hôtels parcourront un ample processus de modernisation, étant achetés par des chaînes hôtelières internationales : Hôtel Dorobanți sera prise par la chaîne hôtelière Howard Johnson ; Hôtel București deviendra Hôtel Rammada; Hôtel Athenée Palace fera partie du réseau Hilton. Le nombre d'hôtels sera en augmentation et leur gamme deviendra de plus en plus diversifiée, contribuant ainsi à la croissance du degré d'accessibilité. La disparition dans le temps de certains hôtels classés 1 étoile et qui n'ont pas réussi à s'aligner aux nouveaux standards imposés par l'occidentalisation, a été remplacée par l'apparition d'une nouvelle catégorie, inexistante avant 1990, les hostels, dont l'emplacement caractérise pas seulement la zone centrale de la capitale. Ces investissements, réalisés surtout après 2000, ont participé à un début de contreponds dans leur distribution à l'intérieur de la capitale, couvrant des zones antérieurement non-desservies par des services d'hébergement. À l'autre pôle, se situent les hôtels de 5 étoiles qui, suite à des travaux importants de reconsolidation et rénovation, se sont transformés dans des espaces de logement de luxe qui encouragent le développement du tourisme d'affaires.

Dans l'étude présente, les auteurs analysent les hôtels inscrits sur la Liste des monuments historiques de Bucarest, un inventaire valable depuis 2010 et qui représente une mise à jour de la liste des monuments historiques de 2004. Approuvée par l'Ordre n° 2361 du 12 Juillet 2010 et réalisée par l'Institut National du Patrimoine dans le cadre du Ministère de la Culture et du Patrimoine National, la liste comprend un nombre important d'hôtels emblématiques pour l'histoire hôtelière de la capitale, dont certains ont été détruits par la suite (*Fig. 1*) :

Hôtels	Dates d'identification
1. Hôtel Marna	fin du XIX ^{ème} siècle
2. L'ancien Hôtel Național, aujourd'hui ASIROM	première moitié du XX ^{ème} siècle
3. L'ancien Hotel Negoiu	première moitié du XX ^{ème} siècle
4. Grand Hôtel du Boulevard	1867
5. Hôtel Athenée Palace	1914
6. L'immeuble des fonctionnaires BNR, aujourd'hui Hôtel Prezident	première moitié du XX ^{ème} siècle
7. Hôtel Ambasador	1936-1937
8. Hôtel Palas	1940
9. Hôtel Patria – Elias	XIX ^{ème} siècle
10. Hôtel Concordia	fin du XIX ^{ème} siècle
11. Hôtel Continental	fin du XIX ^{ème} siècle et la première moitié du XX ^{ème} siècle

Fig. 1. Hôtels inscrits sur la Liste des monuments historiques de Bucarest (2010)

En dehors des hôtels de patrimoine, sur la liste des monuments historiques sont présents aussi quatre auberges d'importance pour la vie touristique du XX^{ème} siècle : Hanul Gabroveni (1739), Hanul lui Manuc (1808), l'Ensemble architectural « Str. Hanul cu Tei » et Hanul Solacolu (fin du XIX^{ème} siècle). Parmi ces auberges, seulement Hanul lui Manuc garde son image symbolique pour le tourisme des XX^{ème} et XXI^{ème} siècles. Hanul lui Manuc devient hôtel en 1872, année où sa grande cour se transforme au fur et à mesure en salle de spectacles et restaurant. Changeant plus tard son nom en Hôtel Dacia et après 1848 sa destination en habitations, le bâtiment, caractérisé par un état de dégradation avancée, redevient auberge dans les années 1960, période dans laquelle l'auberge gagnera son image d'autrefois (Mucenic, 2004, p. 81). Au fil des siècles, Hanul lui Manuc a connu aussi une importance historique car ici a été signée le 26 Mai 1812 la Paix de Bucarest qui met fin à la guerre russo-turque.

2. Méthodologie

Les hôtels de patrimoine inscrits en 2010 sur la Liste des monuments historiques de Bucarest ont été inventoriés pendant les visites sur le terrain

effectuées dans la période 2011-2014, des photographies de chaque hôtel étant prises in situ pour analyser l'évolution de la qualité physique des bâtiments et du point de vue économique. Au cela s'est ajouté ensuite le travail en laboratoire qui a compris : a) la recherche dans les archives, les bases de données existantes de diverses institutions publiques (comme le Ministère de la Culture, par exemple) et les médias ; b) l'analyse des données pour l'évaluation des hôtels de patrimoine : données générales sur la construction (architecte/constructeur, état actuel : utilisé/non utilisé, état physique et des suggestions pour la réutilisation de la construction), données sur l'architecture des hôtels de patrimoine (style et type architectural, matériaux de construction et d'autres informations selon le cas) ; c) la documentation sur quelques études de cas au niveau international, de façon à présenter une série d'exemples de bonnes pratiques dans la reconversion fonctionnelle des hôtels de patrimoine.

3. Résultats

Le XIX^{ème} siècle représente l'étape de passage de l'auberge à l'hôtel, renonçant ainsi à l'ancienne forme d'auberge-citadelle (Mucenic, 2004, p. 29).

L'histoire des auberges s'achèvera au milieu du XIX^{ème} siècle, quoi que les auberges plus anciennes, construits au XVII^{ème} et XVIII^{ème} siècles, aient essayé de s'adapter aux nouvelles demandes du commerce. Ainsi, au rez-de-chaussée des immeubles des portes et fenêtres seront aménagées pour accéder aux boutiques directement de l'extérieur. Malheureusement, dégradées au fil du temps, pars les incendies et les tremblements de terre, les auberges ne seront plus utiles ce qui fait que, une par une, ces-ci soient démolies ou englobées dans de nouvelles constructions (Mucenic, 2004, p. 48-49).

Les auberges qui survivent et ceux de petite taille deviennent au fur et à mesure habitations, tandis que d'autres adoptent l'appellation d'hôtel (Mucenic, 2004, p. 50). Le plan des hôtels n'est pas loin de celui de l'habitation-boutique : sont en forme de L, avec l'entrée par un couloir en semi-arche et des chambres qui s'ouvrent vers le couloir. Ce qui leur est caractéristique est l'introduction de l'échelle dans un volume semi-circulaire vitré qui, ensemble avec les galeries fermées par des vitres, donnent une note d'élégance souple (Mucenic, 2004, p. 51).

Les auberges représentent le point de départ des grands hôtels qui n'accomplissent plus le même nombre de fonctions comme les premières, mais enregistrent une amélioration des services, plus efficaces et de qualité (Zamani, 2007, p. 93) : les hôtels sont des endroits où les voyageurs louent des chambres et déjeunent au restaurant, dans une période où le commerce et les métiers se dirigent vers d'autres espaces de fonctionnement adaptés aux nouvelles conditions.

L'analyse met en évidence l'évolution des hôtels de patrimoine au cours des XX^{ème} et XXI^{ème} siècles, groupés en trois catégories qui reflètent, en dehors de leur histoire et participation à l'évolution temporelle et spatiale des activités touristiques au niveau de la capitale, les préoccupations municipales vis-à-vis de leur destin : *hôtels conservés, hôtels transformés et hôtels démolis*.

3.1. Les hôtels préservés

3.1.1. L'Hôtel Athenée Palace a été inauguré en 1914 d'après les plans de l'architecte Théophile Bradeau, étant la première construction importante de la capitale qui utilisait le béton armé. L'hôtel a été construit à la place de l'ancien auberge Hanul Gherasim du XIX^{ème} siècle et financé par une société française qui avait déjà construit deux bâtiments importants à Sinaia : l'Hôtel Palace et le Casino de Sinaia. Au rez-de-chaussée l'hôtel avait un grand restaurant avec cuisine française (en 1920, La Maison Grigore Capşa prend en exploitation le restaurant de l'hôtel - Parusi, 2007, p. 521). En 1937, une aile nouvelle est construite (Parusi, 2007, p. 479). Après sa destruction partielle due aux bombardements de 1944, l'hôtel est rénové dans les années à venir. D'autres interventions de rénovation et modernisation ont eu lieu en 1954 et 1966, année où une nouvelle aile est construite avec un jardin d'été à côté (Parusi, 2007, p. 718). En 1947, l'hôtel a été nationalisé (Parusi, 2007, p. 643). Aujourd'hui, celui-ci fonctionne toujours comme hôtel, mais dans la chaîne des hôtels Hilton.

3.1.2. Hôtel Ambassador. En 1939, est inauguré l'hôtel dont sa construction avait commencé en 1937, à côté du Restaurant Café Bucureşti, une copie à petite échelle du restaurant du transatlantique français Normandie. L'architecte de l'hôtel est Arghir Culina. L'hôtel est occupé pendant la guerre par les membres de la mission militaire allemande et sera fermé en 1949, recevant ensuite une autre destination. Après des travaux de rénovation, le restaurant Café Bucureşti sera inclus dans le corps de l'hôtel, l'inauguration ayant lieu en 1954. Ambassador redevient hôtel partiellement en 1953 et complètement en 1958. L'hôtel et le restaurant se situent parmi les premières unités re-ouvertes pendant la période communiste, après des années de blocage des activités hôtelières. L'hôtel est consolidé après le tremblement de terre de 1977 et après 1990 celui-ci bénéficie des travaux de modernisation (Parusi, 2007, p. 598, 599 et 681).

3.1.3. Hôtel Continental. En 1884 a lieu la réception de l'hôtel, construit d'après les plans de l'architecte Ritttern Forster et sous la surveillance de l'architecte I. I. Rosnovanu. En 1900, à l'intérieur de l'hôtel est ouvert le bar Luncheon, un des premiers bars de Bucarest (Parusi, 2007, p. 363 et 425).

Fermé plusieurs fois pendant la période communiste, l'hôtel a connu deux moments importants de restauration : les années 1970 et l'intervalle de temps 2007-2009 (*fig. 2*). Sarevitalisation s'est produite après la dernière rénovation qui a précédé son ouverture en 2009 : au rez-de-chaussée il y a des boutiques qui rappellent dans une certaine mesure de l'image des magasins qui fonctionnaient au début du XX^{ème} siècle.



Fig. 2. Hôtel Continental après sa restauration (2011)

3.1.4. Hôtel Capșa. En 1866 ou 1868, les frères Capșa ouvrent au rez-de-chaussée loué dans un bâtiment sur Podul Mogoșoaiei la confiserie La doi frați, la construction restant renommée jusqu'aujourd'hui (Casa Capșa - La Maison Capșa). Plus tard (en 1872), ils achètent tout le bâtiment et le transforment en hôtel en 1886, restaurant en 1888 et café en 1891, tous étant renommés à la fin du XIX^{ème} siècle (Parusi, 2007, p. 189). Le local est modernisé en 1906 par le nouveau propriétaire, membre de la famille, à l'image que celui-ci a aujourd'hui, mais transformé ensuite en casino des soldats par les bulgares vers la fin de la première guerre mondiale, après avoir été fermé en 1916 en raison de sécurité de l'information et, quelques mois après, réquisitionné par les autorités militaires allemandes (Parusi, 2007, p. 304, 486 et 488). Ouvert de nouveau après la guerre (en 1918), ensemble avec le café et le restaurant (Parusi, 2007, p. 491), l'hôtel sera transformé en Société sur actions en 1921. En 1936, le café est fermé. En 1948, a lieu la mise en concession de la société à une société commerciale de la municipalité, au fur et à mesure lui étant retirées jusqu'en 1950 (l'année de la fermeture), tous les biens de qualité supérieure. Suite à sa fermeture, une brasserie et un restaurant resteront fonctionnels. Dans les années qui ont suivi, l'hôtel n'a pas connu des investissements jusqu'à la fin des années 1970, après le tremblement de terre de 1977. L'appellation ancienne de Casa Capșa sera reconnue officiellement pendant les

années 1983-1984. Après 1990, l'hôtel a été réaménagé en plusieurs étapes (Parusi, 2007, p. 303 et 304).

Casa Capșa a occupé dans le temps une place importante dans l'ensemble des hôtels de Bucarest (Parusi, 2007, p. 316, 322, 326, 386, 447 et 580) : en 1871, l'introduction de l'éclairage au gaz ; en 1873, la préparation du diné de gale du Palais régna ; en 1875, Casa Capșa devient le fournisseur de la Cour royale de Serbie et à l'occasion de l'Exposition internationale de Paris, ses produits de confiserie obtiennent la médaille d'or ; en 1890, le premier téléphone privé de Bucarest est installé ; en 1906, est introduit l'éclairage électrique ; en 1936, dans les salons de Casa Capșa est introduit le chauffage au gaz à la place de celui au bois. L'hôtel est détruit partiellement par les bombardements du 1944.

3.1.5. Hôtel Palas. L'hôtel a été construit pendant la période d'entre les deux guerres (1940) par l'architecte Ernest Doneaud (le même architecte qui a projeté l'Hôtel Lido), dans un style éclectique, caractéristique pour la ville de Bucarest dans son chemin de devenir une capitale européenne s'inspirant des modèles parisiens (<http://www.casecareplang.ro/case/hotel-palace/>). À l'heure actuelle, le bâtiment est abandonné, avec un panneau contenant des informations sur la durée des travaux de rénovation qui étaient prévus pour finir en mars 2009 (Fig. 3).



Fig. 3.Hôtel Palas (2013)

3.2. Les hôtels transformés

3.2.1. Grand Hôtel du Boulevard, dont Frédéric Damé rappelle dans son livre « Bucarest en 1906 », était le plus moderne et grand de l'époque. Ouvert

dans les années 1870, Grand Hôtel du Boulevard est l'ancien Hôtel Herdan, construit en 1867 (Parusi, 2007, p. 285) d'après les plans de l'architecte Alexandru Orăscu. Deux ans après sa finalisation, le propriétaire Herdan vent l'hôtel à Mme Phor qui changera le nom avec l'appellation actuelle (Parusi, 2007, p. 298). Lors de son inauguration, l'hôtel était le plus grand de Bucarest, bénéficiant d'un restaurant de cuisine française et des salons de réception, ainsi que d'une brasserie (Parusi, 2007, p. 313) et, dix ans plus tard, de l'eau courante dans chaque chambre (Parusi, 2007, p. 332). Au rez-de-chaussée a fonctionné une librairie (sous le nom d'Alcalay), depuis 1883 jusqu'à la nationalisation de l'hôtel en 1948 (Parusi, 2007, p. 298). Après sa nationalisation, la fonction hôtelière a été interrompue jusqu'après le tremblement de terre de 1977, moment où celui-ci sera ouvert sous le nom d'Hôtel Bulevard. Jusqu'à la moitié des années 2000 (avant sa fermeture), l'hôtel a été le plus ancien hôtel de Bucarest. À l'heure actuelle, Grand Hôtel du Boulevard connaît les derniers travaux de reconsolidation et modernisation avant d'être utilisé comme bâtiment de bureaux (Fig. 4).

Des moments importants ont marqué son importance historique : en 1881, a lieu le banquet pour la célébration des 65 ans de C.A. Rosetti ; en 1906, Automobil Clubul Român a organisé à l'intérieur de l'hôtel son assemblée générale ; en 1924, Constantin Brâncuși a été accueilli à l'hôtel (Parusi, 2007, p. 355, 447 et 513).



Fig. 4. Grand Hôtel du Boulevard :
a) pendant la restauration (2011) ; b) après la restauration (2014)

3.2.2. Hôtel Național a été construit pendant la première moitié du XX^{ème} siècle dans un style Art déco par l'architecte Ioan Ionescu. Pendant la période communiste, le bâtiment a été le siège du Ministère des Affaires Étrangères. Aujourd'hui, l'immeuble est destiné à héberger la société d'assurances ASIROM (Fig. 5) (<http://armyuser.blogspot.ro/2009/12/casa-asigurarilor-sociale.html>).



Fig. 5. Hôtel National (2012)

3.2.3. Hôtel Negoiu (connu au début comme Hôtel Stănescu) a été construit toujours dans la première moitié du XX^{ème} siècle par l'architecte Arghir Culina, étant un des hôtels de luxe de la zone centrale de Bucarest. Aujourd'hui, le siège est utilisé par quelques institutions et sociétés qui déroulent différentes activités de services (bancaires, assurances, de rédaction etc.). Le bâtiment avait une volumétrie apparente symétrique à son hôtel de vis-à-vis, l'Hôtel Union, en style Art-Deco, avec des motifs d'inspiration néo-roumaine (Fig. 6). L'immeuble présente des modifications au niveau du rez-de-chaussée et la gloriette du dernier étage fermée avec vitrage (<http://arghirculina.blogspot.ro/p/traseul.html>).



Fig. 6. Hôtel Negoiu (2012)

3.2.4. Hôtel Patria, mentionné dans un Guide du voyageur en 1879, date du XIX^{ème} siècle. Connue aussi comme Elias, l'hôtel a été à l'origine une auberge. Après avoir devenu hôtel, un café, un restaurant et une salle de

billard ont été ouvertes (Zamani, 2007, p. 122). À présent, le bâtiment est en rénovation, étant utilisé comme logement et par quelques unités commerciales (meubles, atelier de reliure livres etc.) au rez-de-chaussée (*Fig. 7*).



*Fig. 7. L'ancien Hôtel Patria transformé en espace résidentiel :
a) pendant la rénovation (2013) ; b) après la rénovation (2014)*

3.2.5. Hôtel Concordia, datant depuis la deuxième moitié du XIX^{ème} siècle (1852), a une importance historique (Parusi, 2007, p. 265 et 317) : le 23 janvier 1859, Al. I. Cuza est proposé comme souverain de la Valachie, étant élu le lendemain; en 1872, l'hôtel avait un restaurant de cuisine allemande, un café et une salle de billard.

L'Hôtel Concordia était le bijou de la couronne de Bucarest, dans son restaurant étant servies des spécialités françaises, italiennes et allemandes. Les incendies de 1884 et 1901 ont détruit l'hôtel, mais dans les deux cas l'hôtel a bénéficié des travaux de restauration, restant une longue période l'endroit de rencontre des politiciens, industriels et diplômés étrangers. Pendant la période communiste, l'hôtel se dégradera après sa transformation en habitations. Sa destruction continuera dans les années 1990-2000 et encore après 2000 pendant sa gestion par un propriétaire privé (<http://www.romanialibera.ro/actualitate/bucuresti/hotel-concordia-cladirea-in-care-s-a-nascut-romania-moderna-291232.html>). À la fin de l'année 2013, sous l'administration d'un seul propriétaire, personne physique, des travaux de rénovation sont envisagés après l'obtention de toutes les autorisations de consolidation, restauration et fonctionnement de l'ancien hôtel (<http://www.rfi.ro/reportaj-rfi-47169-fostul-hotel-concordia-ultima-ramasita-actul-nastere-al-unirii-ruina-primaria>). En conclusion, l'Hôtel Concordia représente un cas particulier car pour une longue période celui-ci s'est inscrit dans la catégorie des hôtels transformés, mais un retour à sa

fonction initiale est possible dans les années à venir (n'étant pas néanmoins un hôtel préservé).

3.3. Les hôtels démolis

3.3.1. Cette dernière catégorie est représentée par un seul hôtel, *l'Hôtel Marna*. Construit à la fin du XIX^{ème} siècle, l'immeuble a été démoli en 2011 pour faire place à la construction de la diamétrale Nord-Sud, une nouvelle voie de circulation avec le rôle de faciliter les connexions entre différentes zones de la capitale.

À la fin de l'année 2010, l'Association Salvați Bucureștiul avait réussi à suspendre les autorisations pour la démolition de l'hôtel, ainsi que pour l'ancien Cinéma Grivița, mais l'action de démolition a été reprise par les autorités au début de 2011, après la signature des avis des démolitions par le Ministère de la Culture et du Patrimoine National pour plusieurs immeubles dans la zone. En dépit des essais de la part des différentes ONG, les deux bâtiments ont été démolis (adevarul.ro/news/bucuresti/s-a-ales-praful-hotelul-marna-1_50bdec747c42d5a663d01af5/index.html).

4. Discussions

Le processus de réutilisation ou transformation des immeubles de patrimoine garantit la revitalisation des bâtiments et de l'espace où ceux-ci se trouvent, créant en même temps une utilisation économique qui couvre les coûts de rénovation et de reconversion fonctionnelle et offre un revenu suffisant pour payer les coûts d'entretien et réparations. D'autres effets positifs indirects naissent après la reconversion : le progrès de la structure matérielle des zones urbaines, la participation communautaire et le développement du sens de la propriété, l'amélioration de l'image urbaine, nouveaux emplois directement et indirectement créés, nouvelles entreprises, des dépenses primaires et secondaires, plus de visiteurs, l'augmentation des investissements de l'État et privés.

Deux types de reconversion sont mis en évidence par les spécialistes : la réorganisation fonctionnelle et la diversité fonctionnelle (Thurley, Walley, Peace, 2013).

En outre, il faut mentionner l'importance de l'existence des fonds financiers pour la réalisation des reconversions. Les subventions publiques et autres fonds non-remboursables ou les investissements privés peuvent être mentionnés comme sources de financement. Les fonds octroyés à la réhabilitation physique des bâtiments deviennent importants car ceux-ci peuvent

éviter des restrictions légales, comme la classification qui contribue à l'augmentation du coût de la restauration.

Barabash (2012) considère que les investissements dans le patrimoine culturel peuvent générer des effets positifs pour l'économie locale ; ces effets se retrouvent pas seulement dans la consommation culturelle, mais aussi dans l'augmentation du nombre d'emplois et des revenus (Bowitz, Ibenholt, 2007), comme il a été déjà affirmé plus haut.

Il y a différentes formes générales de réutilisation des bâtiments de patrimoine, souvent ces-ci prenant la forme d'un usage commercial (hôtels, bureaux, magasins), résidentiel ou culturel.

La mise en œuvre des projets de transformation des monuments en hôtels n'est pas simple car les contraintes architecturales sont souvent lourdes et renchérissent le coût de l'investissement (Petit, Couteleau, 2011).

Les exemples de reconversion des bâtiments avec une histoire importante en hôtels sont multiples au niveau international. Un exemple de changement fonctionnel est représenté par l'actuel Hôtel St. Pancras Renaissance London (Deborah, 2012) ouvert à Londres en 2011, dans le bâtiment St. Pancras Chambers où antérieurement étaient installés les bureaux de chemin de fer. En réalité, il ne s'agit pas entièrement d'une reconversion fonctionnelle, car à la base ce bâtiment avait été construit avec destination hôtelière (comme Hôtel Concordia). Ainsi, entre 1873-1935 a fonctionné Midland Grand Hôtel qui a été fermé ensuite, laissant la place aux bureaux de chemin de fer jusqu'en 2011. Ce retour à la destination fonctionnelle de base peut être qualifié comme un hommage apporté à l'histoire de la ville et de l'endroit en même. D'autres exemples sont : a) le bâtiment Central Technical School de Sheffield City Centre qui a été aménagé sous la forme d'un projet mixte qui a réunis des unités résidentielles, un hôtel boutique de quatre étoiles, des bars et un restaurant autour de la place publique Leopold ; b) la transformation d'un ancien bâtiment en hôtel, Oxford Castle, qui jusqu'en 1996 a fonctionné comme prison (Thurley, Walley, Peace, 2013) ; c) l'hôtel Radisson Blu de Nantes a été ouvert après 2010 dans l'ancien Palais de justice de Nantes construit en 1852 (Petit, Couteleau, 2011).

Dans une période où les préoccupations des chercheurs dans le domaine du patrimoine se dirigent vers la transformation en hôtels des différents édifices monumentaux, y compris religieux, la démarche de la préservation des hôtels de patrimoine existants détient déjà un support impressionnant au niveau européen en termes d'analyses et études scientifiques, de base légale, de la participation d'une variété d'acteurs territoriaux à leur protection ou de la conscientisation de leur importance par la population concernée.

Le patrimoine historique doit développer ses fonctions marchandes et trouver un usage économique plus large et viable, c'est à dire enrichir sa fonctionnalité actuelle, reposant surtout sur l'hébergement et la restauration

(Grard, 2011). Mais cela signifie garder la fonction de visite du monument historique et rajouter d'autres fonctions. Comment peut-on alors intervenir dans l'évolution temporelle des hôtels monuments historiques ? Dans leur cas, on ne peut pas leur octroyer une fonction de visite que si on aménage un musée à leur intérieur; il reste alors deux possibilités d'agir: a) continuer l'histoire du bâtiment et préserver sa fonction touristique ou b) transformer le bâtiment du point de vue fonctionnel, mais malheureusement souvent aussi architectural. Par conséquent, on a à faire en général à deux situations concrètes de moyens d'intervention: participer à la conservation architecturale du bâtiment original (qui peut être valable dans les deux cas) ou remplacer l'ancien bâtiment par une nouvelle construction (applicable des fois dans le cas b). À Bucarest, le choix de la deuxième solution d'intervention est renforcé par le développement au niveau de la capitale d'une approche de la part des propriétaires ou investisseurs plus centrée vers la mise en valeur des bâtiments anciens s'appuyant sur des ventes successives, rénovations pas chères, fermetures ou démolitions au lieu de continuer le *savoir-faire* architectural local (Cercleux, Merciu, Merciu, 2011, p. 61), dénaturant ainsi l'authenticité.

Au niveau international il y a des organismes ou associations impliquées dans la promotion des hôtels de patrimoine, ne négligeant pas leur préservation. Un exemple de ces organismes est représenté en France par *Hôtels & Résidences Historiques* (anciennement *Hôtels France Patrimoine*, une association née de la volonté d'installer des hôtels de charme dans des monuments historiques. Créée au début des années 2000, *Hôtels France Patrimoine* était en 2011 une chaîne hôtelière de quatorze établissements dans toute la France, de 2 jusqu'à 4 étoiles (Pantz, 2012, p. 33). Malheureusement, au début de 2013, la société était en redressement judiciaire, comptant que 6 hôtels (Boyer, 2013, p. 34).

Pour devenir membre de la société *Hôtels France Patrimoine* il faut accomplir quelques critères : le monument historique doit présenter une capacité permettant l'installation d'au moins cinquante chambres, offrir la possibilité de mettre en place un restaurant gastronomique, pouvant exister en autonomie et accueillir des événements comme des mariages ou séminaires, des conditions qui assurent une certaine rentabilité de leur activité (Pantz, 2012, p. 33).

Hôtels & Résidences Historiques représente un modèle de fonctionnement espagnol, s'inspirant des *paradores* espagnoles, pensées comme un recours à la valorisation touristique et commerciale de toute une série de monuments, réhabilités et transformés en hôtels et restaurants de luxe (Négrier, 2007, p. 25).

En parlant de l'accroissement de la fréquentation des monuments et reposant sur les Rencontres internationales pour la protection du patrimoine culturel d'Avignon sur le thème de la Diffusion culturelle et exploitation touristique (1988), Lecoq (1991, p. 6), propose l'appropriation du monument par le public, car celui-ci lui

donne la possibilité d'en « acquérir une parcelle symbolique » (objets-souvenirs) et la permission d'en user sans façon : hôtels, restaurants, buvettes, boutiques et commodités diverses.

Au niveau national, le processus de promotion des hôtels de patrimoine est au début de son chemin, les organismes ou les associations impliquées dans leur sauvegarde, préservation et continuation de leur rôle économique s'inscrivent plutôt dans la catégorie générale des organisations qui luttent pour la conservation architecturale de tous les monuments historiques. Au niveau des grandes villes, cette notion de conservation architecturale commence à être mieux conscientisée comme étant importante car celle-ci est en liaison avec le sentiment d'identité et d'appartenance à un territoire, ainsi qu'à celui de perception de l'image des villes.

5. Conclusions

La réutilisation des bâtiments de patrimoine est une nécessité, d'une part pour leur préservation dans le sens de l'importance historique et, d'autre part, pour leur accorder une nouvelle utilité économique.

Les actions de reconversion fonctionnelle représentent une approche de plus en plus rencontrée dans les processus de rénovation urbaine au niveau de la ville de Bucarest. La sauvegarde des bâtiments de patrimoine impose leur redécouverte, réhabilitation et réutilisation ce qui conduit à la fin à leur renaissance. Le respect du *savoir-faire* architectural local peut contribuer à des vraies réussites d'entrepreneuriat touristique. La direction que Bucarest et autres villes de Roumanie doivent suivre dans le développement des projets qui concernent différents enjeux économiques et culturels urbains nécessite la prise en considération de quelques principes: a) la démolition doit représenter la dernière solution d'intervention dans un endroit après avoir éliminé toutes les autres possibilités d'action et après avoir sorti l'immeuble ou les immeubles de la catégorie des monuments historiques; b) les travaux d'envergure dans le cas d'un monument historique ne sont pas toujours la réponse correcte si la modernisation n'est pas accompagnée par une consolidation en préalable ou si la modernisation et la consolidation ne respectent pas les valeurs patrimoniales d'origine; c) dans les années à venir s'imposent des perspectives de dynamisation du patrimoine.

6. Remerciements

Cette étude a été financée partiellement dans le cadre du projet UB 1322 «Analize integrative și sectorială în dinamica teritorială transcalară» (Analyses intégratives et sectorielles dans la dynamique territoriale transcalaire).

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SHARING COMMON POOL RESOURCES AT THE BORDER OF PROTECTED AREAS IN THE ROMANIAN CARPATHIANS

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Abstract

The common pool resources are a very actual topic approached by both scientists and practitioners preoccupied nowadays of gradually increasing environmental problems. Protected areas in Romania and especially in Romanian Carpathians of national and natural park type (IUCN II and V) represent areas of particular interest in the light of the common pool resources theory imposing conservation laws on areas meeting an increased pressure from human communities around them. The important socio-economic and ownership changes that Romania met in the last decades changed its previous state unique ownership into a multiple stakeholder ownership. At the same time vulnerable human communities located in fragile mountain areas and depending to a high extent on natural resources met an increased stress when exploiting natural resources at the border of protected areas. Consequently sharing the common pool of resources in the buffer zone of protected areas in the Romanian Carpathians represents a very actual and important topic to be treated in the present study.

Keywords: common pool resources, protected areas, Romanian Carpathians.

1. Introduction

Protected areas in Romania and especially in Romanian Carpathians represent areas of special interest in the light of common pool resources theory. They are particular territories imposing conservation laws on areas meeting an increased pressure from human communities and settlements overlapping them. All these are explained through the important socio-economic and ownership changes that Romania met in the last decades of post-communist transition. The common pool of resources within protected areas in Romanian Carpathians changed from a previous state unique ownership into a multiple stakeholder ownership, management and exploitation pattern under the laws governing types of natural resources (ex.: forest) and property restoration. At the same

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time human communities themselves, located especially in remote areas lacking socio- economic opportunities and depending to a high extent on natural resources for their daily activities as well as for obtaining supplementary revenues met an increased stress in the vicinity of areas with special regime of conservation. Sharing common pool of resources at the border of protected areas in the Romanian Carpathians represents consequently a very actual and important topic to be treated in the present study.

1. 1. The Concept of Common Pool Resources

The common pool resources are a very actual topic approached by both scientists and practitioners preoccupied nowadays of gradually increasing environmental problems. It was introduced by Hardin in 1968 and generated a whole literature and debates on it as other terms launched in the '70s and '80s and referring to the sustainability of ecological resources (e.g. sustainable development, demographic growth etc.). According to Hardin (1968) the common pool resources describing in general natural resources (e.g. air, water etc.) are characterised by subtractability as there are "fluid boundaries" and a rivalry among potential users and by non excludability. In fact Hardin was talking about the tragedy of freedom in a commons which should be regulated by social arrangements in the view of actual numbers of populations of different territories, taking into consideration however that "every new enclosure of the commons" would mean "the infringement of somebody's personal liberty". Common pool resources put more than ever in the conditions of post communist societies with important issues in ownership restitution the problem of "moral responsibility" (Braham/van Hees 2012). In fact Braham and van Hees (2012) were redefining the tragedy of commons as a problem linked to the number of individuals that have a direct control over the outcome. "Balancing multiple interests" within resource management patterns (Steins/Edwards 1999) remains one of the key issue for preventing the commons tragedy. The increased demand for natural resources and the way in which societies organize resources extraction from environment (Braham /van Hees 2012) should be carefully approached in the context of globally transforming socio-politic and economic structures and of more and more stressed ecological systems and natural areas. In fact post socialist societies encountering during totalitarian regimes rather an anti commons tragedy, as described by Heller in 1998, are directing once with the profound societal transformations towards problems of a commons tragedy.

1.2. Protected Areas in the Romanian Carpathians

Protected areas in Romania and especially in Romanian Carpathians are of different categories but the most important in both terms of area and

management, that we refer also in our study, are the ones of national parks (IUCN II) and natural parks (IUCN V). Romania has 12 national parks, 8 natural parks and 2 geoparks mostly founded in 1990 but also after 2000 and especially in 2004 when also the park management councils and policies were established in view of the approached entry in the European Union. A major extension of protected areas in Romania and also in mountain regions occurred in 2007 when new protected areas of SCI (Sites of Community Importance) and SPA (Special Protection Areas) type, part of Network Natura 2000, were declared (Erdeli/Dincă, 2011).

The entire Romanian Carpathian Chain holds 22 protected areas of park type that total approximately 1 million hectares and also 600 reserves and natural monuments totaling 50 000 hectares (Bălteanu et al., 2008). All the park areas represent 7% from the total area in Romania (Erdeli/Dincă 2011).

Parks remain the most important protected areas influencing through their large territories and protection regime, especially national parks included in the IUCN II category, the economic systems at the level of local economies. All parks in the Romanian Carpathians overlap in different percentages the territory of 154 settlements from which 30 cities (fig. 1). Few of them are crossed by European roads and major railroads and especially at their borders (Bucegi, Portile de Fier, Apuseni, Maramuresului Mountains, Putna-Vrancea natural parks, Tara Hategului geopark, Cozia national park) (*Fig. 1*) most of them not being accessed by communication ways of national importance and being neighbored by less accessible communities. Management councils develop and are interested without exception in valuing parks' territories through ecotourism activities, their strategies reflecting this preoccupation through appropriate planning and management chapters. Although protecting various natural elements from geologic formations to endemic species of flora and fauna, all national and natural Romanian mountain parks are protecting scenic and unique landscapes which represent a major attraction for itinerant tourists that form most part of leisure domestic tourism demand in Carpathian regions during summer season. At the same time park resources (wood, pastures, forest fruits etc.) are of vital importance for, often less accessible, neighboring local communities and especially for those that were involved in a restitution process of land and forest property overlapping park areas.

Resources of protected areas and of natural areas in general and especially forestry resources increased as economic importance and met an increasingly greater pressure imposed by human communities in the post-communist period. This was even more accentuated in areas having suffered a severe process of deindustrialization (e.g. mining areas) accompanied by important unemployment rates and lacking investments and economic opportunities capable to absorb the multi-phase severe shock of mine closing. In some regions parks overlap or are very close to ex-mining areas (e.g.: parts of

Muntii Maramuresului natural park, Muntii Rodnei national park, Apuseni natural park, Cheile Nerei – Beusnita national park, Semenic – Cheile Carasului national park, Portile de Fier natural park) emphasizing in this way even more obviously the problem of sharing the commons among different economic activities within natural mountainous areas.

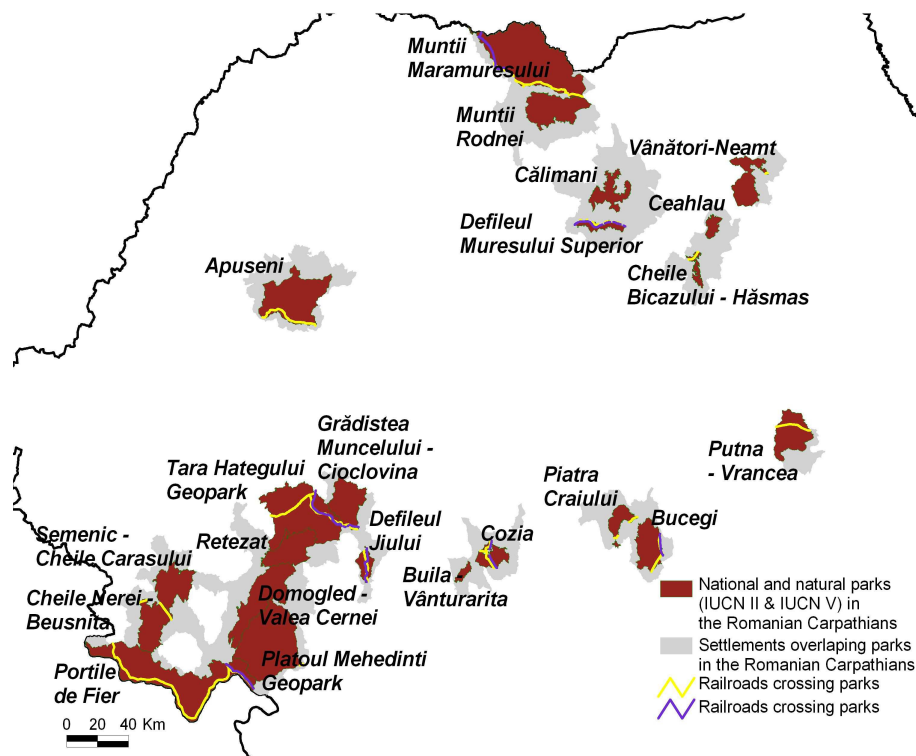


Fig. 1. Settlements overlapping national and natural parks in Romanian Carpathians

Hosting important ecological elements which represent at the same time major tourism attractions for the tourists interested in nature and scientific tourism the protected areas in the Romanian Carpathians comprise sensitive territories to tourism development (Erdeli/Dincă, 2011). However, if well managed, tourism activity is to be preferred in a common pool resources context to other much harmful activities such as mining or forestry in the whole mountain natural areas located in the Romanian Carpathians. Moreover if ‘tourism commons’ (Briassoulis, 2002) are concerned, thanks to the laws imposing the design and application of a responsible management plan in park areas in Romania, national parks are better managed and are rather

recommended as ecotourism destinations than other natural areas imposing no restrictions at all to tourists and visitors.

2. Common pool resources at the border of protected areas in Romanian Carpathians

As described above the profound politic and socio-economic transformations that occurred in Romania after 1989 determined important transformations at the level of local communities and settlements on the one hand and at the level of ownership control, management and administration of resources both through the restitution process and through territorial planning on the other hand. New types of territories, such as protected areas, appeared in parallel with the restitution of private and individual property for natural resources (e.g. forests, water, etc.) previously owned entirely by the communist state. In fact one should speak rather in the case of Romania of the anticommuns transformation, perceived and used however by mountain communities as a common pool of resources belonging to one and the same public owner, into commons governed today by 'an institutional diversity' belonging to both private and public spheres. The tragedy of commons at the border of national and natural parks in Romanian Carpathians is to be though a complex issue as the actual types of property are young and as the property upon natural goods is seen as an important source of income by profoundly economically restructured local communities and also by different stakeholders interested in exploiting resources.

If different types of resources and activities are concerned, in terms of common pool resources in the immediate neighborhood or overlapping in part protected areas in Romanian Carpathians, one should mention in the first place forests and forestry activities.

Forests represent one of the most important resources of natural areas in the Romanian Carpathians and especially of national and natural parks which suffer important changes and an important process of deforestation because of post-communist environmental and socio-economic changes. A major factor that influenced the actual state of Romanian forests and of those located in protected areas as well would be the one of forests' ownership. In this respect important transformations occurred especially after the 1989 Revolution once with the change in the communist regime and the long and controversial process of property restitution. After 1989 three successive laws were given one after another by the Romanian Government in its attempt to redesign the property system which existed before the centralized ownership that represented a monopoly during the communist period. The first normative act, Law 18/1991 was the one to make even more complicated the property restitution process as

it was the one to restitute 1 hectare of forest for whoever demanded for it, ex-owners or other inhabitants of local communities living in settlements located in forested territories. The next two normative acts tried to restitute properties only for ex-owners: Law no 1/2000 within the limit of 10 hectares and Law no 247/2005 for the entire property regardless of its size. The last normative act trying to simplify and totally restore property rights is maybe the most justified one but had the disadvantage to come into power after previous normative acts that already fragmented and deteriorated forest properties. Many forest old and new owners cut their 1 hectare properties after 1991 for different reasons and needs profiting also from the fact that the 26/1996 Law for forest administration hardly came into power only 5 years later. Forest restitution itself as well as present options of owners of forest properties for their administration and management may be explained also by the historical type of usage and property for this natural resource, very different from one Romanian historical province to another. Before the Second World War the property was very much fragmented among individual properties belonging to noblemen families, to churches and monasteries, to peasants or sometimes to colonists that received property titles and different types of common properties belonging to peasant groups with non regulated right to use a common property, with common property in division or non divided common property, to composesorates, to border forests, city forests or different associative forms that existed before 1948. The traditional common usage and the right of usage, sometimes non-divided and non-restricted upon forests, determined to a high extent, at least immediately after 1990, the old owners that recovered their forest property back to “freely” dispose on the wood resources for economic reasons. Most of them either sold their properties or exploited them within the limits imposed by laws of forest administration. The formation of park areas and especially of national parks (belonging to II IUCN category) imposed radical new restrictions on forested territories, integrated previously in different forms of property and restituted after 2005 integrally to the old owners. The common pool of ecological protected resources in areas of park type overlapped in this way the newly formed private property and sometimes common ownership or only common usage of natural resources, or overlapped already conflict situations between forest owners and non-owners using forest resources (e.g. illegal cuttings for selling or private usage of wood for heating). These successive changes within forest property system and the uncertainties induced by property fragmentation at the beginning of forest restitution process, the dissatisfaction of the owners that recovered partially or in a bad state their property but also the low and ancient level of living as well as the need of money and wood resources or the lack of interest of the inhabitants living in urban areas at great distances from their restituted forest properties made for many forested areas to be cut down affecting sometimes spaces situated nearby or inside protected areas (e.g.

Apuseni Natural Park, Călimani National Park etc.) (after Bălteanu et al., 2008). Because of all these stages of property that succeeded one after another in the history of mountain forest and natural areas in the Romanian Carpathians, now overlapping protected areas, parks comprise different types of property generally divided (Fig. 2) between state and private property. According to this general split the parks that display a low proportion of state property within their total area would be particularly Muntii Rodnei National Park (only 6%), Retezat National Park (46%), Buila-Vanturarita National Park (48%), Apuseni Natural Park (51%), Călimani National Park (57%), Piatra Craiului National Park (58%), Porțile de Fier Natural Park (64%) or Ceahlău National Park (64%).

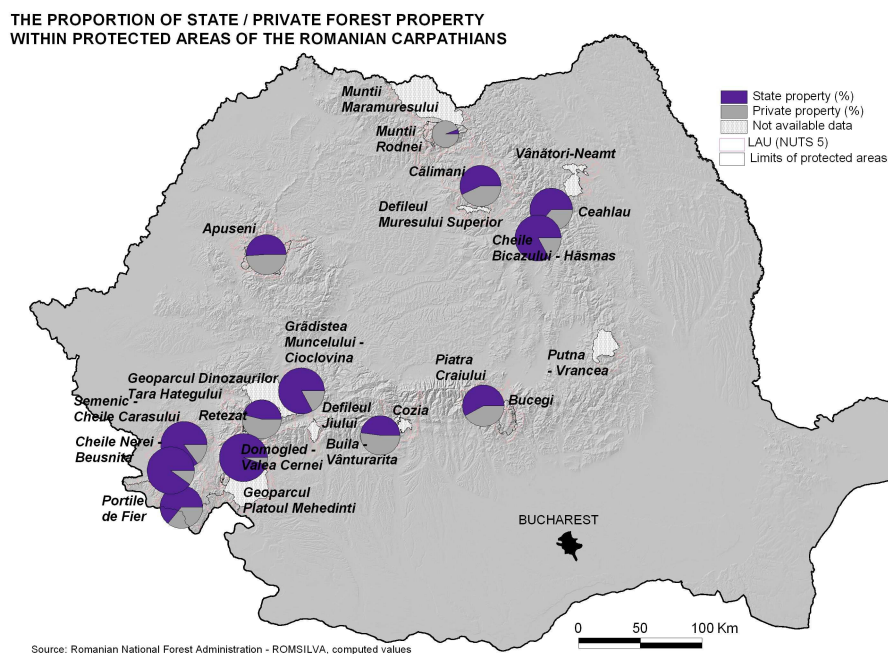


Fig. 2. The proportion of state/private forest property within protected areas in Romanian Carpathians

Their situation regarding forest property is very much different from one geographical region to another (e.g., in the case of Retezat National Park 51% of the total belongs to the alpine level) or from one historical region to another (41% of Călimani National Park belong to different city halls as a consequence of property granting to local communities during the Austro-Hungarian occupation in Bucovina and 53% of Rodnei National Park belong to city halls and to composesorate associations prevalent in Maramureș and Bistrița

provinces). According to the park category, natural parks should have generally lower percentages of public ownership and state area but this is not always the case as the above mentioned factors are the most important in determining the shares of property types. In fact the property shares figures for most natural parks were not available as the map based on figures existing in the first draft variants of parks' strategies and management plans (2010) show (*Fig. 2*). High percentages of areas belonging to physical persons within protected areas of park type belonged according to the same reference data to Porțile de Fier Natural Park (19%) and to Grădiștea Muncelului – Cioclovina Natural Park (11% composesorates, 2,5% individual properties belonging to physical persons).

All this puzzle situations describing property of natural and forest areas within parks in Romanian Carpathians perfectly corresponds to particular cases of natural resources systems regulated through property rights (Feeny et al., 1990) as nowadays all the 4 types of property ('open access', 'private property', 'communal property', 'state property') are met in under different shapes and names. Conflict situations have been described after 1990 as the forest property was restituted and reframed in new public and private administration patterns. Moreover the protected regime of the area introduced a supplementary stressor and limitation for forests exploitation generating hot spots especially at the border of protected areas within properties belonging to the same owner or for poorer communities lacking economic facilities and daily life resources. Human communities in Romanian mountain areas have traditionally lived on forest resources. Suggestive examples of generally perceived common pool forestry resources would be that of forest fruits, mushrooms or medicinal plants most of them freely picked from the forests by locals no matter their property upon forested area or other types of natural lands from where they are gathered. In this case protected areas are again a suggestive example for limiting the access or imposing sustainable ratios for exploiting these natural resources, their borders being in most cases buffer zones between the free unrestricted access and the restricted one for different sorts of common pool resources.

3. Conclusion

Common pool resources represent a very actual topic to be debated in the case of protected areas of park type in the Romanian Carpathians. The long history of property restitution and forest exploitation for instance explain the pressure upon forests perceived as common pool resources both in terms of wood and especially of other different products (e.g. forest fruits). Mountain local communities lacking economic opportunities and daily resources and meeting much stricter regulations upon using generally perceived natural common pool resources (e.g. wood, forest fruits) would put in this way a

pressure at the border zones of Romanian parks. They represent a future challenge to be coped with in view of resource sustainable management. Moreover a further analysis should be made from the point of view of other activities interested in forests maintenance in mountain areas such as tourism activities or in terms of other common pool resources than woods such as air and water resources very much affected in terms of quality by deforestation activities occurring in Romanian Carpathians especially after the 1989 Revolution once with the forest restitution process.

Acknowledgements:

The paper was presented at the international conference GEOMED 2013, The 3rd International Geography Symposium, organized by Dokuz Eylul University, 10 – 13 June 2013, Kemer, Antalya, Turkey.

This paper was supported by CNCSIS-UEFISCU, project number NP II-HR 94/2010, Contract no. 30/28.07.2010 and the Sectoral Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number SOP HRD/89.

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VIAȚA ȘTIINȚIFICĂ

PROFESSOR PhD VALERIA AMELIA MICALEVICH VELCEA HIGHLY APPRECIATED PERSONALITY OF ROMANIAN GEOGRAPHY

MIHAI IELENICZ¹

On 7 February 2014 she would have been 85 years old, having completed many decades of varied activities with great results and influence on both the Romanian higher education in geography and society in general.



She was provided with high quality education both at home and at school, focused on the honesty, respect and thorough thinking that were at the heart of her each and every achievement. As a representative of one of the best generations of graduates of the Faculty of Geography of the University of Bucharest, Prof. Velcea made herself known through her hard work and modern vision. Both her professors and her students regarded her as a great teacher and a scientist of great accomplishments and organizational skills. Due to her hard work, her intelligence and her ability to realistically understand different situations, doubled by her ambition and strong will, all of which centred on discovering the nature and tailoring the research to the present and future social and economic needs, she became a highly appreciated personality.

Her scientific achievements based on documentation and thorough research on the field and in the laboratory can be seen in an impressive collection of notes, articles, books and maps published and presented in Romania as well as abroad. Among those the research on the Carpathians held a special place. At first, the Bucegi Mountains were at the core of a PhD thesis which was actually the first breakthrough of a young teacher who set up a pattern of morphologic approach in an extremely difficult and complex context.

¹ Prof. Univ PhD at the Faculty of Geography, University of Bucharest.

That was the beginning of a successful career, with various scientific accomplishments that became a significant asset in the Romanian geographic treasure. Among those we mention: “*Geografia fizică a României*”, “*Carpatii si Subcarpatii*”, “*Geomorfologie generală*”, “*Principii si metode de cercetare*” etc.).

Professor PhD. Valeria Velcea was an amazing teacher. Her Geography classes were appreciated due to their scientific value, to the delivery and teaching strategies (short sentences yet rich in content, well-done drawings), to posture and student-centered lessons.

Prof. Velcea was the perfect manager, full of commitment, responsibility, creativity and readiness to answer the needs of the faculty. (she was head of department, dean) or to those of the different commissions within the ministry.

Over the years she had been in charge of the Romanian Society of Geography, encouraging the teaching and scientific activities of the society by organizing different symposium and conferences of physical geography, tourism and agriculture geography. She stood by former students, teachers and students during various Olympiads and school competitions.

**PROFESSOR PhD NICOLAE POPESCU
A REMARKABLE GEOGRAPHY SPECIALIST
OF THE GENERATION AFTER 1960**

MIHAI IELENICZ¹



There are many names that can be the basis for defining this chosen personality of the Romanian Geomorphological School and university community of Bucharest. Among them we reveal honesty, ambition, a perfect geographical culture, a proponent of continuous dialogue, proper for the coagulation and promotion of great ideas, an excellent teacher and an extraordinary researcher, a supporter of the truth in life and scientific creation, a man with a high civic sense, who showed a permanent care in supporting and promoting the generations of virtuous students and teachers from the pre – university academic background.

All of these are not the defining features of complacency uttered by a friend and colleague, but can be found in many evocations of his teachers , colleagues, disciples of his 40 series of graduates, or belonging to numerous collaborators from the academic world.

Their background was made up of the native qualities combining special education in the family and one of the most prestigious colleges in Craiova, followed by rigorous academic preparation with a teaching staff of which some personalities have been models in the years that followed.

Moreover , many of these summarizes the string of his life due to the valuable results, as he quickly approached university started affirming himself promptly through research, teaching and becoming a personality in Geography with a worthy record.

Early successes in research have been achieved by the works much appreciated by student scientific circle and in the students' session in Cluj, where he obtained the greatest prize. In the years that followed he

¹ Prof. Univ PhD at the Faculty of Geography, University of Bucharest.

communicated to numerous national and international scientific meetings over 200 materials out of which about 160 were printed in books and prestigious journals.

There were various problems addressed by him like geomorphology and geography, but they had a special rate on the regional studies: the genesis, evolution and chronology of relief steps (terraces, aprons, levels and areas of erosion, etc.), of river basins, depressions or large geographical units (Carpathians, Dobrogea etc.), morphodynamics of bed and slopes (emphasis on the interrelations between erosion, deposits and specific characteristics of river modeling, mapping and topographic surveys based on rigorous lab tests and applying their own formulas to quantify the volume material eroded or appreciation of chemical denudation, the place of the flowing landslides and mudflows in the evolution of the slopes and of the hills and plateaus; the specific of the alpine landscape relief and much more.

Equally valuable were the achievements of genetic geomorphology reported in Romania (periglacial, foothills, large -scale modeling and geochronology, aprons forming piedmont genesis and the evolution of valleys, Delta etc.) in the design of the geomorphologic legends needed in mapping the required landscapes at different scales, geomorphologic mapping methodology in Romania etc. His portfolio also included the results reported in 69 scientific research contracts focused on dominant themes like the dynamic geomorphology impact of human activities on the environment, resource exploitation resorts, coal deposits, the quality and the environmental dynamics of the mountain areas, models of ecotourism development in sustainable development etc.

In 1981 he obtained his Ph.D. in Geography by supporting a work considered by specialists of great scientific and practical value and a geomorphologic model approach in Transylvanian Carpathians space interference.

Added to this there are more essential contributions to geomorphology, the Geography of Romania (vol. I, III, IV), Romanian Danube Geography Encyclopedia, Romanian counties and especially the relief of Romania.

The scientific activity harmoniously combined with an active and responsible presence both in prestigious scientific associations (The Geography Society where he was Vice President, Association of Romania Geomorphology - several years President) in organizing collectives of many national and international scientific meetings (Romanian-French, Italian -Romanian, Romanian-Turkish, Romanian-British), the editorial staff of the most important geographical magazines in the country, but also multiple concerns as manager and design of scientific papers.

At the university and in the faculty he was one of the most dynamic, respected and valued colleagues who climbed through distinct results every step of the academic approach, he held numerous courses (geomorphology, soil erosion and land degradation, Paleogeography, Quaternary Geography, The

Geography of Romania, etc.), he did works in the lab or field practice utterly passionately, with relevant content expressed in understandable phrases and always accompanied by appropriate drawings. He wrote courses for the students, he worked to found the Geomorphology Laboratory, the Research Station at Orșova (Eșelnița), he organized several expeditions with the youth in the Carpathians, he was close to the school teachers with good advice or guidance (in the degree work, he has been a member of numerous committees of student training (for the Olympiads) and each time has been appreciated for accuracy and realism.

All of these qualities and fruitful results led naturally not only to feelings of esteem and appreciation from colleagues and those who knew him, but also to his appraisal by means of honor diplomas from several universities from the country and Europe and from institutions (for two of his works, he received the Romanian Academy Award MEI) and the Jubilee Medal “Simion Mehedinți”.

**27^E COLLOQUE DE L'ASSOCIATION INTERNATIONALE
DE CLIMATOLOGIE
« Climat : système & interactions »
Dijon (France), 2-5 juillet 2014**

Florentina-Iuliana STAN

En 2014, le 27^e colloque de l'Association Internationale de Climatologie s'est déroulé du 2 au 5 juillet à Dijon en France, à la Maison des Sciences de l'Homme, les responsables du colloque étant Pierre Camberlin et Yves Richard.

Chaque année, l'un des pays membres de l'Association Internationale de Climatologie (environ trente pays représentés, par exemple: France, Roumanie, Belgique, Maroc, Algérie, Brésil) organise le colloque annuel. Le but de ce colloque est d'encourager les échanges, avec le français comme langue de travail, entre des chercheurs des sciences de différentes disciplines: géographie, sciences de l'atmosphère, sciences de l'environnement.

L'édition 2014 a réuni environ 150 participants de trois continents. La Roumanie a été représentée par des enseignants, doctorants et chercheurs de l'Université de Bucarest (Faculté de Géographie) et de l'Institut Nationale d'Hydrologie et de la Gestion des Eaux : Liliana Zaharia, Gabriela Ioana-Toroimac, Ruth Perju, Florentina-Iuliana Stan et Remus Prăvălie.

Du point de vue scientifique, le thème principal du colloque a été «Climat: système & interactions» et a réuni cinq sous-thèmes: Interactions et changement d'échelles; États de surface; Changement climatique; Impacts du climat; Variabilité et aléas climatiques.

Le 27^e colloque de l'Association Internationale de Climatologie a été ouvert à des communications orales et des posters portant sur tous les thèmes de la climatologie. Toutes les études présentées ont contribué à la connaissance du climat, de son fonctionnement et de ses impacts sur les hommes, les territoires et les écosystèmes.

Le colloque a fait l'objet d'une publication d'actes, remis aux participants à l'ouverture des journées.

Du point de vue socio-culturel, les organisateurs ont proposé aux participants chaque soirée des activités comme : visite du centre de la ville de Dijon, cocktail à l'Hôtel de ville de Dijon, visite et dégustation du vin à la maison Latour, à Aloxe-Corton et dîner au Chateau de Saulon, à Saulon-la-Rue.

Le colloque a été conclu avec une sortie dans des zones viticoles de Côte-d'Or, permettant d'illustrer différentes problématiques des relations climat-vigne.

L'année prochaine, le 28^e colloque de l'Association Internationale de Climatologie se déroulera du mercredi 1er au samedi 4 juillet 2015 à Liège, Belgique, et le thème principal du colloque sera «Modélisation & Variabilités».



27^e Colloque de l'Association Internationale de Climatologie - ouverture du Colloque
(photo réalisée par Ruth Perju)

RECENZII

Virgil GÂRBACEA – **Le relief des glissements massifs de terrains (glimee)**, Presa Universitară Clujeană, 2013, 260 pages, 56 figures, résumé en anglais, 400 références bibliographiques

Les glissements de terrains de type *glimee* représentent un des reliefs spécifiques du territoire de la Roumanie qui a été observé par l'opinion internationale, suite à la présentation faite par messieurs les professeurs Morariu et Gârbacea au Congrès International de Géographie de New Delhi en 1968. Concernant la genèse de ce type de relief, bien que fréquemment analysé dans la littérature de spécialité, surtout les *glimee* de la Dépression de la Transylvanie, nous ne sommes pas encore arrivés à des explications causales acceptées à l'unanimité. C'est pour cela que l'apparition d'un tel travail sur la réflexion, les hypothèses et les recherches des *glimee* de Roumanie représente une réalisation d'exception dans la géomorphologie roumaine, qui couronne l'activité d'un auteur spécialisé dans la recherche des *glimee* – le Professeur Virgil Gârbacea. La structure de cette publication reflète les caractéristiques de ce type de relief, présentées dans la littérature de spécialité roumaine, ainsi qu'étrangère. L'auteur justifie son opinion, suite aux recherches directes dans certaines zones (Saschiz, Câmpia Transilvaniei etc.). Il y a donc une logique dans la succession des 13 chapitres, ainsi : définition, toponymes, classifications, historique (les chapitres n° 1 și 2) ; position de versant, altitude absolue, rapports avec l'évolution du relief (le chapitre n° 3) ; les caractères morphographiques et morphométriques grâce auxquels sont présentés les principaux éléments définitoires des *glimee*, comme la corniche de détachement, le glacis de glissement, les microformes de relief, l'altitude relative etc. (le chapitre n° 4) ; les facteurs et les conditions génétiques (le chapitre n° 5) ; la morphodynamique des *glimee*, avec des exemples de certains points de vue au niveau des différents auteurs (le chapitre n° 6) ; le rapport avec la structure géologique – les *glimee* inconséquents et aconséquents (le chapitre n° 7) ; les processus géomorphologiques associés, la modélisation ultérieure et actuelle des *glimee* par érosion, suffusion etc. (le chapitre n° 8) ; l'âge des glissements de terrain de type *glimee* (le chapitre n° 9) ; les causes de leur apparition (le chapitre n° 10) ; la synthèse sur la recherche des *glimee* en Roumanie (les chapitres n° 11 et 12) ; la mise en valeur des terrains de *glimee* et les conclusions (le chapitre n° 13).

Le résumé qui s'étend sur 14 pages rend l'œuvre accessible également aux spécialistes qui ne connaissent pas la langue roumaine. Nous croyons que

d'autres présentations ou interprétations de ces lignes ne sont pas nécessaires, invitant ainsi les personnes intéressées à découvrir le caractère singulier de ce livre.

L'œuvre est précieuse grâce à la richesse des interprétations, le style clair, explicite et indubitable du Professeur Virgil Gârbacea. Nous croyons que nous ne trompons pas quand nous affirmons que le Professeur Virgil Gârbacea est le seul géographe/géomorphologue qui s'est penché patiemment et laborieusement dans la recherche des *glimee* depuis déjà une longue période, collectant dans un ouvrage exhaustif, la littérature existante concernant ce type de relief (400 travaux consultés et inscrits dans la bibliographie). Certainement, la publication constituera un sujet d'étude aussi pour d'autres générations. Ce relief qui nous a fasciné et incité aussi dans nos recherches, mérite pleinement son appellation de *glimee*.

Florina GRECU

**TEZE DE DOCTORAT SUSȚINUTE ÎN PERIOADA
DECEMBRIE 2012 – MAI 2014
SISTEMUL BOLOGNA –**

OANA PUIA

Nr. crt.	Numele și prenumele doctorandului	Data susținerii publice	Titlul tezei de doctorat	Profesor coordonator
1.	Pakular (Moldovan) Cristina Elisabeta	Decembrie 2012	Restructurarea economică și efectul ei asupra populației municipiului Brașov	Prof.univ.dr. G.ERDELI
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3.	Dumitrache Lucian Sebastian	Mai 2013	Modificări fizico-geografice în ultima sută de ani a regiunii de litoral cuprinsă între Midia și Perișor	Prof.univ.dr. I. MARIN
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6.	Catană Simona	Septembrie 2013	Studiu hidrogeografic al bazinului râului Teleajen. Aplicații ale SIG și teledetecției	Prof.univ.dr. L.ZAHARIA
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24	Cucu (Lazăr) Irina	Ianuarie 2014	Modificări în evoluția și structura populației României în perioada postcomunistă	Prof.univ.dr. L. DUMITRACHE

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Kleiber, Georges, 2001, *L'anaphore associative*, Paris, Presses Universitaires de France.

Zafiu, R., C. Stan, Al. Nicolae (eds.), 2007, *Studii lingvistice. Omagiu profesoarei Gabriela Pană Dindelegan, la aniversare*, București, Editura Universității din București.

(2) Pentru **articole din volume colective**:

Rand Hoare, Michael, 2009, "Scientific and Technical Dictionaries", in A. P. Cowie (ed.), *The Oxford History of English Lexicography*, Oxford, Oxford University Press, pp. 47-94.

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Fischer, I., 1968, « Remarques sur le traitement de la diphtongue *au* en latin vulgaire », in *Revue Roumaine de Linguistique*, XIII, nr. 5, pp. 417-420.

Cornea, P., 1994, „Noțiunea de autor: statut și mod de folosință”, în *Limbă și literatură*, vol. III-IV, pp. 27-35.

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Kleiber, Georges, 2001, *L'anaphore associative*, Paris, Presses Universitaires de France.

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All the papers will be peer-reviewed by a committee of specialists in different philological fields: linguistics, literature, cultural studies, translation studies.

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