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(RECOMMENDED CITATION)

In Memoriam:
Prof. Dr. Vasile SURD
(1946 - 2024)

In times of carolling and waiting for Christmas, Professor Vasile SURD suddenly passed away. On the evening of December 14, 2024, he just stopped being, without any warning, walking the path of light in silence. Unfortunately, almost unbelievable, the always dynamic and energetic man disappeared silently. We are left behind, to look back with the regret that he is no longer with us, but also with the gratitude that we had the chance to meet him, to know him and to work with him, thus creating a common legacy through which he will remain visible and present in the professional environment and our personal thoughts.

Son of Gheorghe and Mariţa, Vasile SURD was born on July 22, 1946 in Micești village, Tureni commune, Cluj County, Romania. He attended the elementary school in his native village of Micești, between 1953 and 1960. In the summer of 1960, he was admitted as a high school student at "Mihai Viteazul" National College in Turda Town, but he was not allowed to attend classes as a full-time student because his parents were not enrolled in the Collective Agricultural Household (*RO: CAP*). In the autumn of the same year, he was admitted as a student to the Vocational School of the Cement Factory in Turda Town, which he graduated in 1963. Between 1963 and 1967 he worked as a trained worker at the Cement Factory in Turda. At the same time (1963-1967), he attended the night classes at "Mihai Viteazul" National College, in Turda.

In the summer of 1967, he was admitted as a student of the Faculty of Biology, Geology and Geography, of the Babeş-Bolyai University in Cluj-Napoca, the Geography programme, which he graduated in 1972. Upon graduation, he was appointed as junior assistant professor at the Faculty of Biology, Geology and Geography of the Babeş-Bolyai University in Cluj-Napoca, Geography programme. Between September 1, 1972 and February 28, 1973, he completed his short-term military service, at discharge being ranked second lieutenant.

He started his academic career in 1973, and since then he has had tenure at the Faculty of Biology, Geology and Geography, the Department of Geography, subsequently the independent Faculty of Geography of the Babeş-Bolyai University, Cluj-Napoca (in 1994). He went through all academic ranks, from junior assistant professor to university professor: junior assistant professor (1973-1976); assistant professor (1977-1981); lecturer (1982-1990); associate professor (1990-1993); university professor (1994-2012); Emeritus university professor (2012-2024).

The entire identity of Professor Vasile SURD was shaped by his academic and research activities, collaborating with people, close to him and from afar, namely students, doctoral students, members of the national and international academic community, but also people from villages, local communities he never hesitated to learn about. He was the person who gathered and united, with a remarkable ability to communicate and inspire.

His scientific and teaching activity was marked by countless key moments that formed and enriched him until he reached his definitive self. He was awarded the title of Doctor in Geography at the University of Bucharest, in 1983, under the coordination of Prof. Dr. Ioan POPOVICI, with the thesis "*Geography of settlements in the upper basin of the Arieş River, with special focus on the socioeconomic systematization*". In 1987, he attended a training course at the Institute of East and South-East European Studies in Vienna, Austria. Since 1974, he has been a member of the National Geographic Society in Romania,

and since 1990 a member of the National Geographic Society. At the request of the Ministry of Agriculture, in 1998, he founded the "Transylvania" Foundation for Rural Development, with the main purpose of developing and promoting rural development projects. Starting with 2005, he became a member of the Register of Urban Planners in Romania (*RO: RUR*) and obtained the title of geographer-urban planner, which gave him the opportunity to coordinate research projects and elaborate substantiation studies in spatial planning and urbanism. Between 2005 and 2015, he was vice-president of the Registry of Urban Planners in Romania, Cluj branch. In 2010, he initiated and contributed to the foundation of the Centre for Research on Settlements and Urbanism, at the Faculty of Geography, Babeş-Bolyai University in Cluj-Napoca, and of the scientific journal titled Journal of Settlements and Spatial Planning, holding the position of Editor-in-Chief between 2010 and 2012.

During his academic career, Prof. Dr. Vasile SURD also held several administrative positions: Chancellor of the Faculty of Biology-Geography-Geology, in the periods 1992-1994 and 2000-2008; founding member of the Faculty of Geography (in 1994) (Doc. no. 38212 of 19 September 1994 establishing the Faculty of Geography, registration no. 6842/19 of September 1994; founding members: Prof. Dr. Andrei MARGA, Ph.D. - rector, Prof. Dr. Ioan MAC, Prof. Dr. Vasile SURD); member of the Senate of Babeş-Bolyai University of Cluj-Napoca, in the period 1992-1996; coordinator of the international relations programme ERASMUS-SOCRATES, in the period 1997-2010.

School creator, founder and supporter of Geography as a scientific field, particularly Human Geography, Professor Vasile SURD has shaped not only careers, but also destinies. Starting with 1996, he became a doctoral supervisor in the field of Geography (specialisation: Human Geography), from which position he coordinated and collaborated with over 50 doctoral students from the Faculty of Geography, whom he guided in their scientific career to be awarded the title of Doctor in Geography.

He developed and proposed the inclusion of new courses in the curriculum of the Faculty of Geography in Cluj-Napoca, such as *the Organization of Geographical Space and Spatial Planning*, bringing innovation in the field of geographical higher education, but he also taught and transferred knowledge through several other fundamental university courses at bachelor and master levels, such as: *World Economic Geography*, *Geography of Population and Settlements*, *Rural and Urban Geography*, *Geography of Settlements* – course for foreign students, at the master level: *Management of Settlements*, *Quality of the Demographic Resources in Tourism*, and at the doctoral level: *Specific Forms of Organization and Planning of Geographical Space*.

As a dedicated mentor, he tutored numerous generations of students of the Faculty of Geography, guiding them with wisdom, modesty and kindness. He organized numerous study field trips with bachelor and master students, both in the country and abroad. He initiated and developed the first Erasmus international relations of the Faculty of Geography with universities from Austria, Germany, France, Belgium and participated in numerous international mobilities. He also held specialty courses at the universities of Würzburg, Tübingen, Klagenfurt, Glasgow, Novi Sad, Moscow, Vila Real, Alicante, Montpellier, Bratislava, Verona, Brussels, Belgrade, Salamanca, Beijing, Stockholm, Udaipur (India), Chambéry, Chişinău, Krakow, Haifa, and Sofia.

Throughout his university career he had a rich scientific activity. He participated in numerous national and international conferences, the most representative being the conferences of the International Geographical Union: Paris (France) – 1984, Washington (USA) – 1992, Prague (Czech Republic) – 1994, Hague (The Netherlands) – 1996, Seoul (South Korea) – 2000, Glasgow (United Kingdom) – 2004, Tunis (Tunisia) – 2008, Cologne (Germany) – 2012, Beijing (China) – 2016, Istanbul (Turkey) – 2021, and Dublin (Ireland) – 2024.

And, whenever possible, Professor Vasile SURD travelled, thus managing to reach six continents: North America (USA), South America (Peru, Chile, Argentina), Africa (Egypt, Tunisia), Asia (Turkey, Japan, South Korea, China, Jordan, Israel, India), Australia and Europe.

He, who was a great traveller, the man with a broad and deep vision of the world, a devotee of the rural areas and their socioeconomic identity, has offered us a valuable perspective on the importance of local communities and their traditions. He knew how to skilfully combine the love for people with the duty to science and education. He passionately promoted the Romanian identity and the ruralism, at the same time being a true patriot, who understood well the value of our traditions and culture. For this we have to remember Professor Vasile SURD as the one who initiated the International Conference on *"Rural Space and Regional/Local Development*" as a venue for the academia to debate on the most particular aspects that describe rural areas, event that became an identity symbol of the Faculty of Geography in Cluj-Napoca, Romania. He coordinated six editions of this scientific event in 1998, 2002, 2006, 2010, 2012 and 2014, in different locations, namely Cluj-Napoca, Turda-Micești, Baia Mare, Bistrița, Sighetu Marmației, and again Cluj-Napoca, gathering specialists from over 20 European countries, and from Israel, India, Japan, Iran, Mexico etc.

His research focus and scientific efforts are visible through an impressive number of publications (22 books and university courses, 9 coordinated volumes, 4 chapters in books, 135 scientific articles, 2 maps, and 5 extensive abstracts in collective volumes), participation in the scientific committee of

several scientific journals in the country and abroad, and the coordination and membership into several fundamental research projects, and spatial planning and urban planning projects.

A whole world knew him, and today everyone reverently thinks about what Professor Vasile SURD represented, a great teacher, but especially a great man!

With deep gratitude and sadness, we now say goodbye to Professor Vasile SURD, he who left a permanent mark in the field of Geography and in the hearts of those who knew him. Both in his scientific and personal activity, Professor Vasile SURD has become known for his exemplary correctness in his relationships with those around him and for his unconditional altruism. His legacy will not disappear, but will continue to live on in every student and colleague, in every project he has started, and in every corner of the world he has explored with an open heart. Professor Vasile SURD will forever remain a symbol of dedication, integrity and passion for science and people. He was a romantic, a pacifist and a man of great charisma, with a special sense of humor, who knew how to bring a smile to anyone around him. A true and fair colleague, a reliable friend, a wise and caring adviser, a fighter always ready to help everyone, and a very inspired storyteller.

He now leaves a huge void behind him, but also a spiritual legacy through all those he guided, helped and trained in his career as a *teacher*.

May God rest him in peace, and may we keep his memory alive every day!

December 28, 2024

Vasile ZOTIC, PhD, and **Diana ALEXANDRU**, PhD
Faculty of Geography, Babeș-Bolyai University
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THE INFLUENCE OF PETROGRAPHY ON THE RELIEF OF THE BISTRIŢEI MOUNTAINS (THE EASTERN CARPATHIANS)

Iulian SĂNDULACHE[1*], Cătălina SĂNDULACHE[2], Alexandra RIZAC[1], Mihaela RAŞCU[3]

ABSTRACT. – The Influence of Petrography on the Relief of the Bistriţei Mountains (The Eastern Carpathians). The petrographic characteristics impose certain general aspects in the morphology of any region. The geological composition of the Bistriţa Mountains is varied, being dominated by epimetamorphic rocks (sericitic, chlorite, graphite and quartzite schists) and mesometamorphic rocks (paragneisses, mica-schists, crystalline limestones and dolomites, amphibolites). To these, some isolated island-like areas of Mesozoic sedimentary rocks are added in the southern part, while in the eastern and southeastern parts, Cretaceous flysch, belonging to the Ceahlău Nappe is common. In the central axis there is a porphyroid dyke.

From a geomorphological point of view, metamorphic rocks have encouraged the formation of dull, widely vaulted ridges, domes and deep valleys, with slopes having a convex profile. The porphyroid gneisses generated a relief of sharp, lofty ridges and peaks, with steep slopes. Long, narrow crests (called "obcine" in this area, too) and wide valleys develop on the sandy-shale flysch in the southeastern part. In the south, slender hills appear, due to the presence of dolomites and limestones, whose hardness exceeds that of the metamorphic rocks surrounding them. Levelled surfaces are very well preserved on the crystalline rocks. Where the valleys cut the Pietrosu gneiss bar or the epimetamorphic schists, gorges and defiles come into existence.

Keywords: *Bistriţei Mountains, petrography, vaulted backslopes, ridges, levelled surfaces, low mountains.*

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1. Introduction

Geological structure and tectonics are two factors that decisively influence the geomorphological characteristics of a region. They have an impact on slope stability, bring about differences in the sequence of the layers with various degrees of resistance, account for the relation between dip and slope angle, and are responsible for the occurrence of fissures, diaclases, faults, etc. And the influence goes beyond the genetic types of relief imposed by rock and geological structure in a certain evolutionary stage, taking also into account the aspects induced by petrography in the overall morphology of a region (Ielenicz, 1984).

Bedrock is a control factor of the current geomorphological processes (collapses, topples, landslides, etc.), but it can also impact other aspects of the terrain, which cannot be included in the petrographic relief, but are determined by rock properties (Săndulache, 1997).

The Bistriţei Mountains are located in the northern part of the Central Group of the Eastern Carpathians ("The Moldavo – Transylvanian Carpathians", Geography of Romania, vol. III, The Academy Publishing House), between the valleys of Bistriţa to the North and East, Bistricioara to the South, and the Neagra Şarului – Drăgoiasa – Bilbor corridor to the West. If to the North, East and South the borders are clearly outlined, to the West they are separated from the Călimani Mountains by Neagra Şarului (a compartment of the Dornelor Depression), Drăgoiasa – Glodu and Bilbor depressions, and the high saddles between them. They cover an area of 1086 km^2. Adjacent to them are the Giumalău (to the North), Rarău (to the North-East), Stânişoara (to the East), Ceahlău, Hăghimaş, Giurgeu (to the South), and Călimani Mountains (to the West) (Fig. 1 a and b).

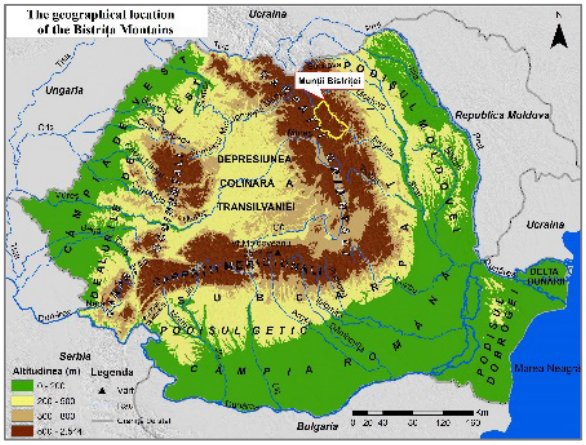

Fig. 1a. Geographical location of the Bistriţei Mountains in Romania.

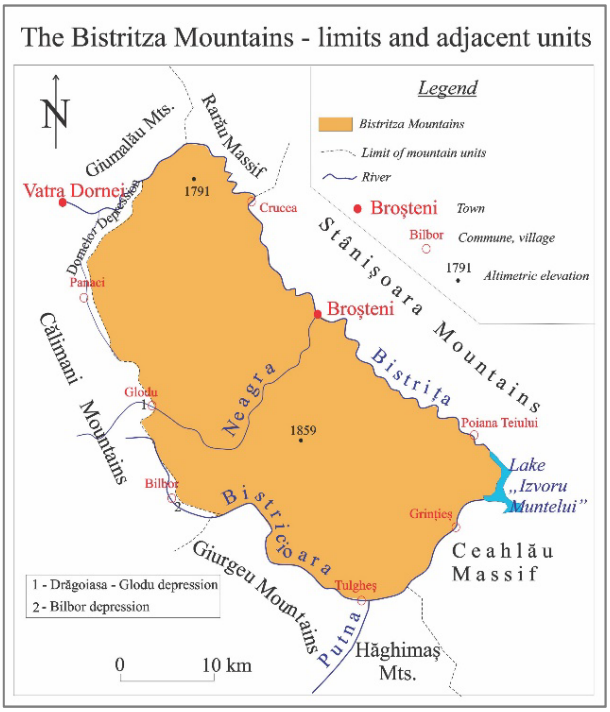

Fig. 1b. The Bistriţei Mountains – limits and adjacent units.
Source: the authors

2. Methods and Materials

In carrying out this study, the following stages were completed: consulting the specialized literature (geomorphological and geological maps, articles and treatises), georeferencing the contour lines on the topographic map of scale 1:25000, in the ArcMap program GIS 10.5, and creating morphometric maps. The documentation stage was supported by field investigations, mappings on topographic maps of scale 1:25000, various observations and thematic photographs. The geological map was accomplished based on the Geological Map of Romania, scale 1:200000, Topliţa sheet, and subsequently, by corroborating it with field observations, the map of levelled surfaces was drawn, in accordance with those identified in the field.

3. Results and Discussions

Fig. 2. Red granitic gneiss belonging to the upper complex of the Hăghimaș – Rarău – Bretila mesometamorphic crystalline, on Mount Măgura (photo: Feb. 2016).
Source: the authors

3.1. Geological features. Petrographic structure, although diverse, is dominated by the epi- and mesometamorphic rocks, which to the South are accompanied by several Mesozoic sedimentary "islands", and to the East and South-East by the internal flysch, of Cretaceous age, of the Eastern Carpathians, represented by the Ceahlău Nappe (Mutihac, 1990) (Fig. 3). The mesometamorphic crystalline formations of Hăghimaș – Rarău (Fig. 2) and Rebra – Barnar (Mutihac, 1990), and the epimetamorphic ones of Tulgheș and Repedea, have relatively equal weights. The first category includes paragneisses, micaschists, limestones, crystalline dolomites, and amphibolites, while the latter, sericitous schists (Fig. 4), chlorite schists, graphite schists and quartzite schits. At the southern end, on confined areas, sedimentary rocks, prevailingly carbonate, are found, belonging to the "Bucovinic sedimentary formation" of the crystalline – Mesozoic domain[4] (Mutihac, 1990): Triassic dolomites and limestones, Jurassic sandstones and limestones, and Lower Cretaceous wildflysch – in the Bâtca Arsurilor, Comarnic, Piatra Runcului, and Măgura massifs. Triassic dolomites also occur in the North-West (Mount Rusului, Șarului Peak, Ulmului Peak) (Fig. 7).

[4] The cited author calls the northern section of the crystalline – Mesozoic area, "the central-eastern Carpathian unit", which includes most of the Bistriței Mountains, while the southern section belongs (from a geographical standpoint) to the Southern Carpathians, specifically to the Bucegi – Leaota group, as well as to the Postăvaru and Piatra Mare massifs, and it is called "the Leaota – Bucegi – Piatra Mare unit".

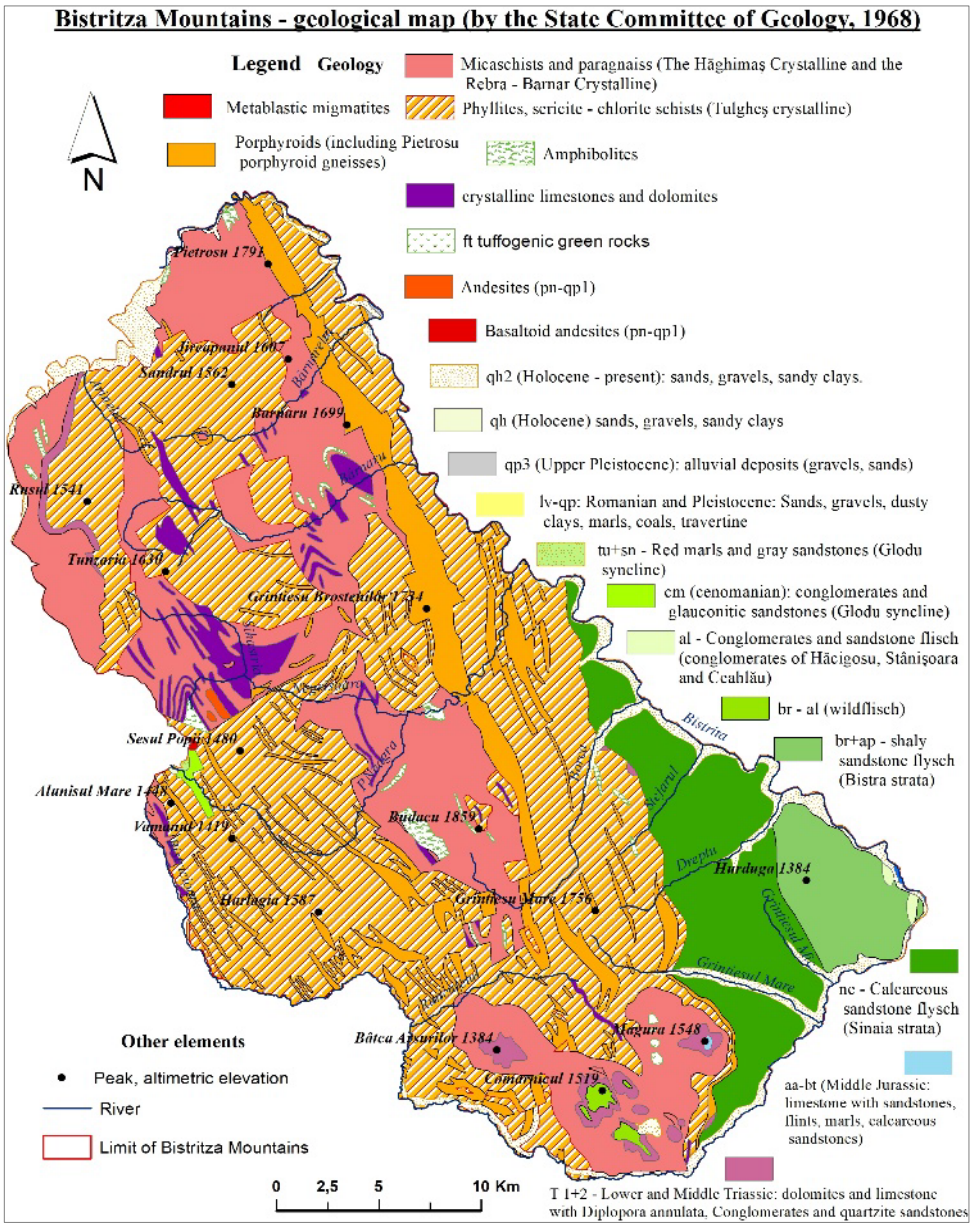

Fig. 3. Geological map of the Bistriţei Mountains.
Source: The Romanian Geological Society, 1968, Topliţa and Rădăuţi sheets

Fig. 4. Sericito – chlorite – quartzite schist belonging to the Tulgheş epimetamorphic crystalline formation, on Mount Harlagia (photo: May 2001).
Source: the authors

Fig. 5 – Porphyroid gneiss of Pietrosul Bistriţei, found on the Neagra Broştenilor valley (July 2009).
Source: the authors.

Within the Tulgheş crystalline formation, along the central – eastern axis of the Bistriţei Mountains, there is a large dyke of porphyroid rocks, trending North – South (between Giumalău and Grinţieşu Mare peaks) (Fig. 3 and 5). According to some geologists (Balintoni, Gheuca, 1977), these rocks do not represent a magmatic body, but a subaerial tuff formation (subsequently metamorphosed), which settled on a premetamorphic planation surface carved in quartzite paragneisses with biotite.

In the Glodu section, in the extreme West, there is an area with Upper Cretaceous and Paleogene sedimentary rocks (Fig. 6), making a syncline which rests upon the Tulgheș crystalline formation. Here, one can find quartzite conglomerates, micaceous sandstones, grey marly limestones, red marls, gray sandstones, variegated marls and clays, which are strongly folded (Alexandrescu et al., 1968).

The entire crystalline – Mesozoic complex in the area is affected by transversal faults (trending WSW – ENE or W – E), generally vertical; the most affected section is the one running from Valea Seacă to the northern edge of the Bistriței Mountains.

Fig. 6. The Upper Cretaceous – Paleogene sedimentary layer at Glodu (photo: July 2021).

Fig. 7. Triassic dolomites on Mount Măgura (photo: Jan. 1999)

To the East, the Sinaia Strata (Tithonian – Neocomian) and the Bistra Strata (Barremian – Aptian) (Fig. 8), belonging to the Ceahlău Nappe (Mutihac, 1990), come to surface. Both lithofacies, relatively similar, are composed of calcareous sandstones, flysch with sandstones and clays or with sandstones and marls, marly limestones and microconglomerates; however, the Bistra Strata are somewhat harder than the Sinaia Strata, as they are richer in calcareous sandstones, which generate a higher relief (Hurduga Peak, 1384 m). Likewise, on the Grințieșu Mic – Bistricioara section, the Bistricioara Valley gets narrower when crosses this area.

Fig. 8. The Bistra Strata (Barremian – Aptian), near the "Petrom" gas station at Poiana Teiului (photo: Jan. 2019). *Source: the authors*

3.2. Geomorphological features imposed by petrography

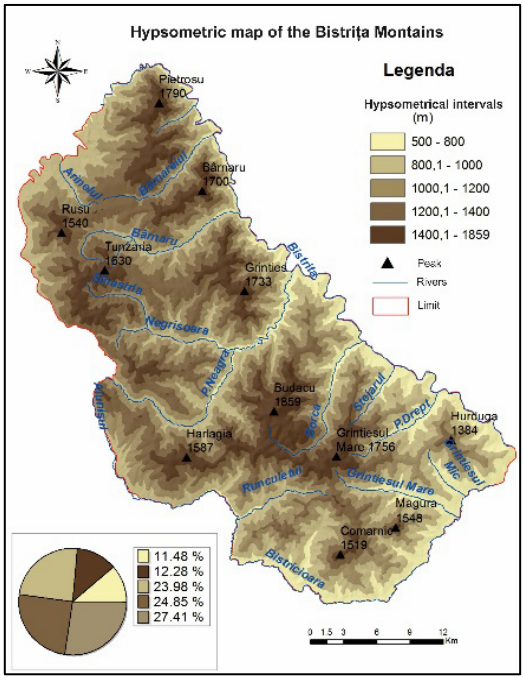

Fig. 9. Hypsometric map of the Bistriţei Mountains. *Source: the authors*

From the hypsometric standpoint, the Bistriţei Mountains start from the elevation of 502 m (at the confluence of Bistriţa and Bistricioara[5]) and reach 1859 m in the Budacu Peak (Fig. 9 and 10). In general, the area displays large vaulted backslopes and domes (Budacul, 1859 m, Grinţieşu Mare, 1756 m, Harlagia, 1587 m, Tunzăria, 1630 m etc.) (Fig. 10), developing on metamorphic rocks, while most of the valleys are deep and dark, with convex slopes (Borca, Borcuţa, Neagra, Negrişoara, Barnarul, Bârnărelul, Izvorul Rău, Muncelul, Bradul, Primătarul etc.).

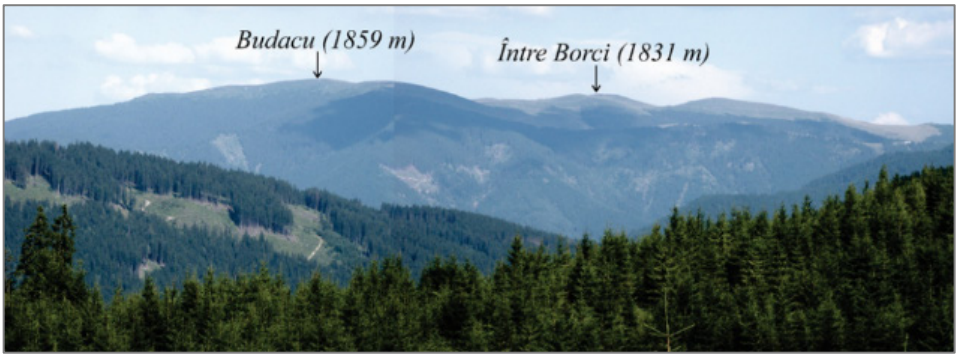

Fig. 10. General appearance of the Bistriţei Mountains, with vaulted backslopes and domes – the Budacu Massif seen from the Aluniş peak, lying in the west (photo July, 2012). *Source: the authors*

In the central-eastern strip, the porphyroid gneisses of Pietrosul Bistriţei have generated the highest and most spectacular relief: ridges and pointed peaks with steep sides (Fig. 11 and 12) and elevations between 1600 and 1800 m, which tower both the levelled summits in the West (by about 200 – 300 m) and the Bistriţa Valley in the east (by 800 – 1800 m): the Bogolin – Pietrosu summit, 1791 m; the Scăricica – Barnar summit, 1711 m; Mount Grinţieşu Broştenilor, 1734 m; and the Slopăţului summit, 1684 m. These peaks and summits make up the ridge line, which does not overlap the main watershed, because the latter has been pushed far to the west, near the edge of the Călimani Mountains (fig. 12 and 16).

[5] Starting with 1960, this confluence is flooded most of the time by Lake Izvoru Muntelui, which allows us to consider its free surface as the lowest elevation of the Bistriţei Mountains, namely 509,32 m at normal pool elevation (Ichim et al., 1980).

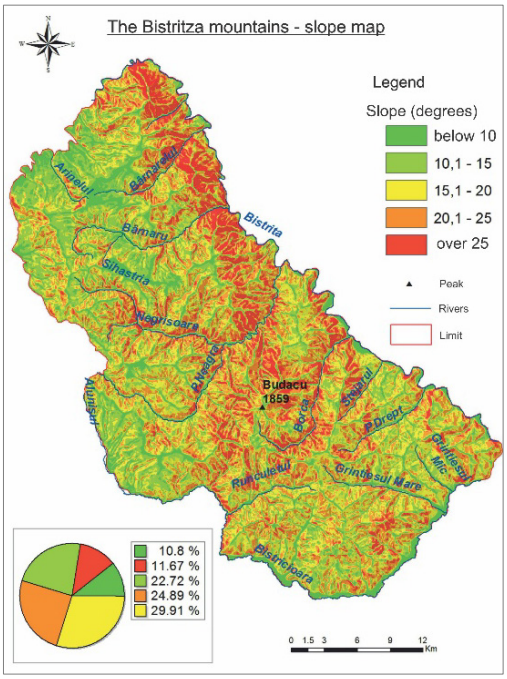

Fig. 11. The Bistriţei Mountains – slope map

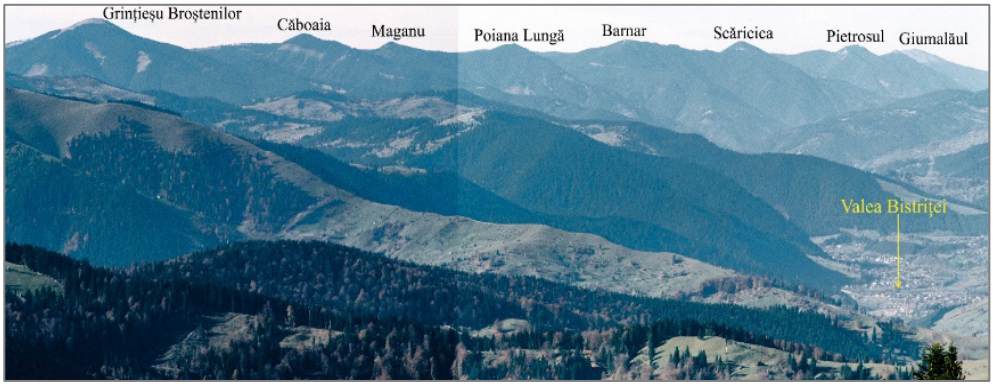

Fig. 12. The pointed peaks alignment developed on the gneiss of Pietrosu Bistriţei, between Grinţieşul Broştenilor and Giumalău, forms a ridge similar to those occurring in the Southern Carpathians (Făgăraş, Parâng, Retezat) or in the Rodnei Mountains, the main differences being the high degree of afforestation and the absolute elevations, which are by 500 – 800 m lower and which makes the glacial relief missing (photo: Oct. 2001). *Source: the authors*

Fig. 13. The main ridge of The Făgăraș mountains; wiew from Roșu peak (2462 m), Iezer Mountains; photo July 2022. *Source: the authors*

On the sandstone schists in the southeastern section, the topography consists of long and narrow ridges ("obcine"[6]), with low and medium altitudes (1384 m in the Hurduga Peak), low and medium inclined slopes (mostly 10 – 20 degrees), and large V-shaped valleys, like the ones of the Bistricioara, between Pintec and Grințișel, the Grinţieşul Mic, the Dreptului, etc. This subdivision of the Bistriţei Mountains (which also includes Obcinele Boiștei and Târşoasei from the Ceahlău Massif) was named "the Grinţieşului Low Mountains" (Săndulache, 2007). Likewise, the lower unit (1000 – 1300 m) of the neighboring Ceahlău Mountains was named "the Lower Peripheral Ridges" (Stănescu, 1980); here, most of these low ridges are called "obcine" (Fig. 14).

Fig. 14. The Bistricioara valley at Grinţieş and the Grinţieşului Low Mountains, looking like "obcine" (photo: May 2016). *Source: the authors*

[6] The toponym "obcină" (plural "obcine") refers to a long and narrow ridge, usually afforested, and it is frequent in the Eastern Carpathians, from the northern state border to the Ciucului Mountains (Bacău County).

In the South, against the general background of the dull summits shaped on crystalline rocks, some slender hillocks appear, developed on Triassic dolomites and Cretaceous limestones (Măgura, 1548 m, Piatra Mocilor, 1109 m, Piatra Runcului, 1215 m, Comarnic, 1519 m, Bâtca Arsurilor, 1384 m) (Fig. 15).

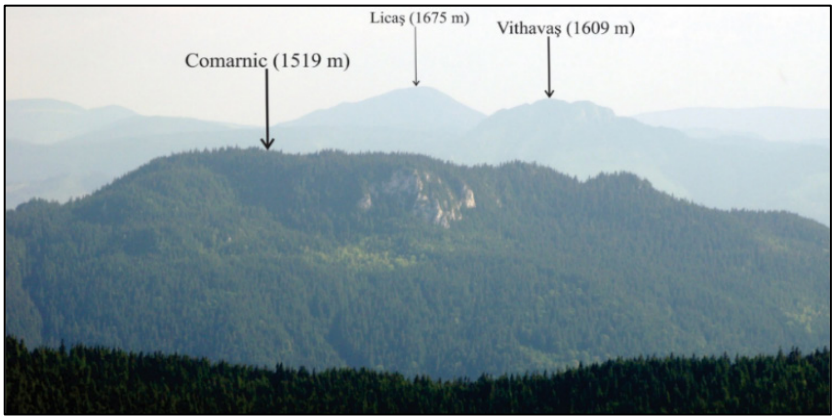

Fig. 15. Hillocks developed on Triassic dolomites and Cretaceous limestones: Comarnic, 1519 m (the Bistriței Mountains), Vithavaș, 1609 m and Licaș, 1675 m (the Hăghimaș Mountains) (photo: Aug. 2013). *Source: the authors*

On the crystalline rocks, levelled surfaces are preserved (Fig. 16), which here and there are very wide; their "classical" sequence was established by David (1949): "Poiana Ciungilor", at 1500 – 1550 m, deemed of Helvetic age, "Bâda", at 1200 – 1440 m, of Sarmatian age, and "Dornelor", of Pontian age. The planation steps are best preserved within the first order catchments of River Bistrița, which have succeeded in piercing the porphyroid gneiss bar of Pietrosu (Neagra, Negrișoara, Bârnărel, and Barnar), acting as a shield against erosion and thus preventing their rapid destruction. Here, the best preserved are the "Poiana Ciungilor" and "Bâda" surfaces (Fig. 16, 17 and 18).

For the section adjacent to the Bistricioara River, Săndulache (2007) identified five planation steps: "Grințieșu Mare", at 1650 – 1750 m (in the homonymous mountains), "Harlagia", at 1500 – 1600 m (Mount Harlagia, Țibleșu Mare – Grințieșu Mare ridge), "Făget – Mezovești", at 1200 – 1400 m (on the Harlagia – Vamanu ridge, East of Bilbor, and Pietrele Roșii – Grințieșu Mare ridge), "Malnaș – Dosu Cheosrezului", at 1000 – 1200 m (most of the secondary summits detaching from the ridge junctions Măgura, Bâtca Arsurilor etc.), and "Frasinul", at 850 – 1050 m, which appears as a sequence of valley shoulders belonging to the Bistricioara Valley (Fig. 19).

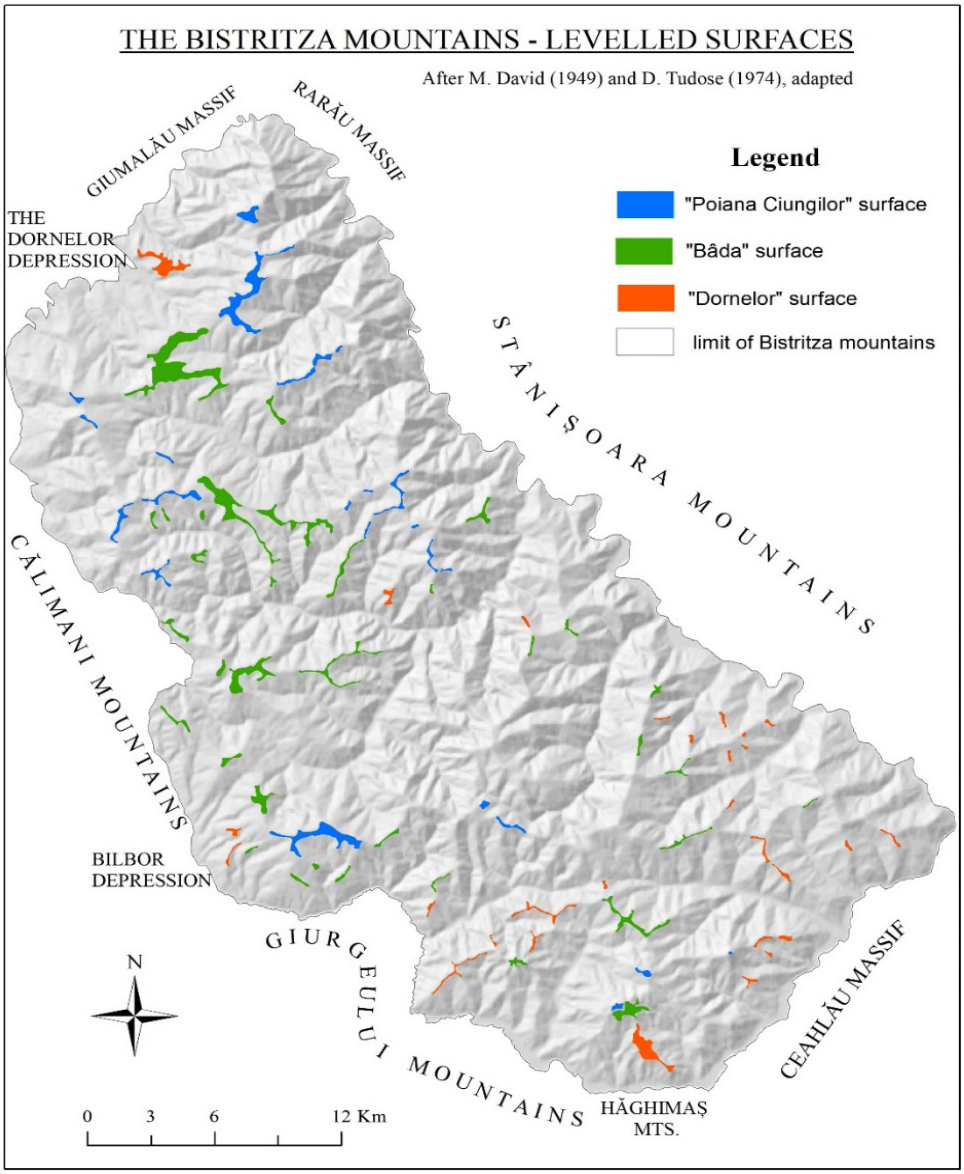

Fig. 16. The Bistriței Mountains – map of the levelled surfaces, based on the topographic map of scale 1:25000, the 1981 edition.
Source: the authors

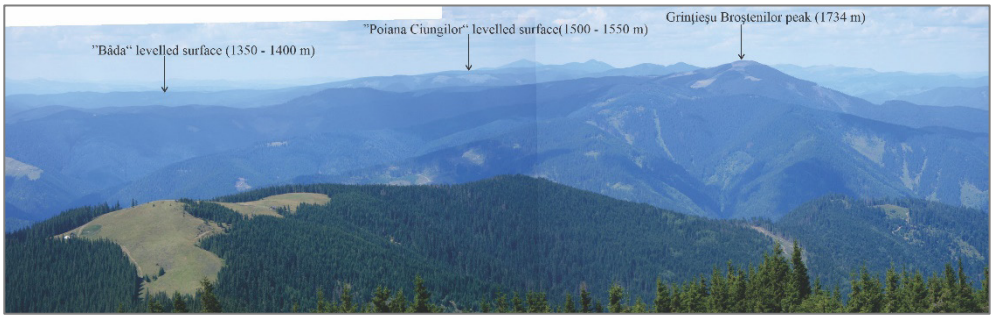

Fig. 17. "Poiana Ciungilor" and "Bâda" planation surfaces, developed West of the porphyroid gneiss bar of Pietrosu, which has shielded them against the erosion exerted by the Bistriţa's tributaries; view from the Budacu to the North-West (photo July 2009).
Source: the authors

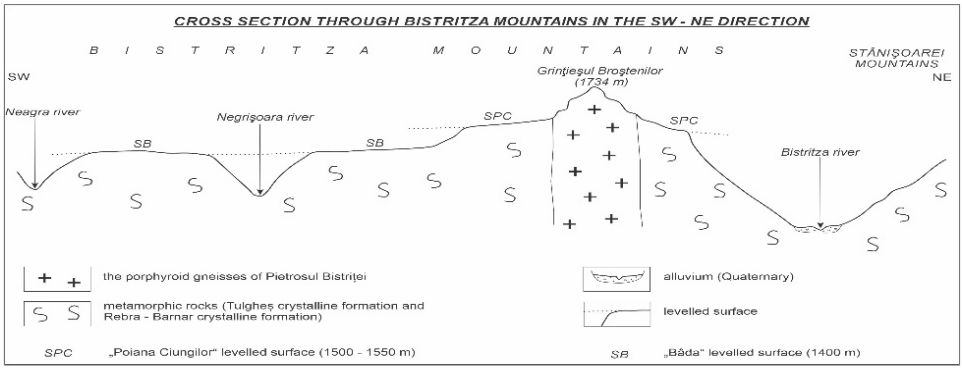

Fig. 18. Cross section through Bistriţa Mountains.
Source: Săndulache (2018)

Fig. 19. Valley shoulders ("u"-shaped), with relative altitudes of 200 – 250 m, on the Borca valley; view from the Grinţieşu Mare peak (1756 m) to the North (Photo Aug. 2008).
Source: the authors

Petrography is also responsible for the appearance of gorges and defiles. These are narrow valley sections, which generate high and very high values of local relief (Fig. 20). Such are, for the Bistriţei Mountains, the gorges formed by the antecedent deepening of the rivers in the gneiss bar of Pietrosu (the Bistriţei gorges at Sunători – Zugreni (Fig. 21), the Barnar gorges, the Bârnărelului gorges and the Neagra Broştenilor defile) or in the epimetamorphic schists of Tulgheş (the Bistricioara defile between Bilbor and Valea Seacă, and the Bistriţei gorges at Toance).

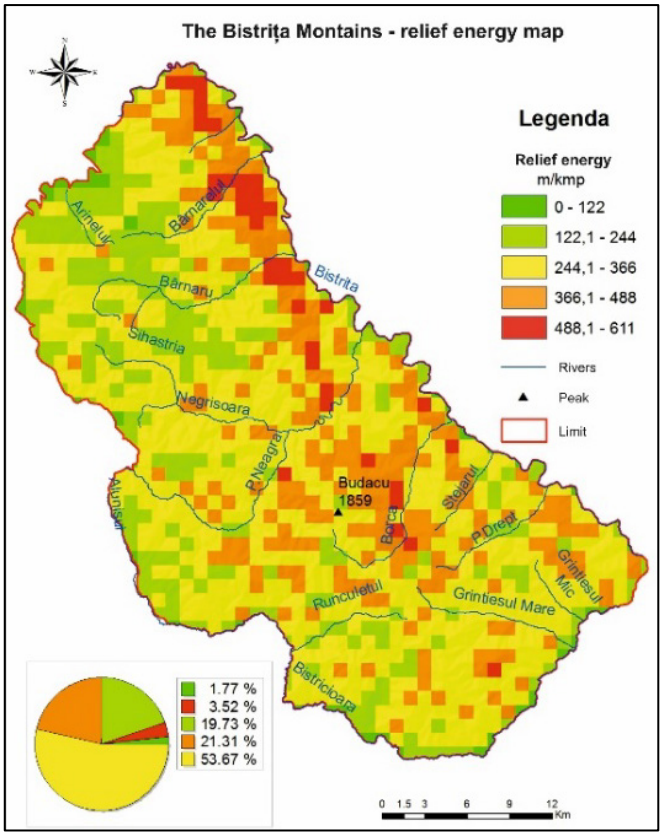

Fig. 20. The Bistriţei Mountains – local relief map.
Source: the authors

The lowest local relief values are specific for the northwestern section (as a result of the large extension of the Bâda and Poiana Ciungilor planation steps) and for the Bistricioarei Valley (due to the brittleness of the Cretaceous flysch of Sinaia and Bistra – Fig. 22).

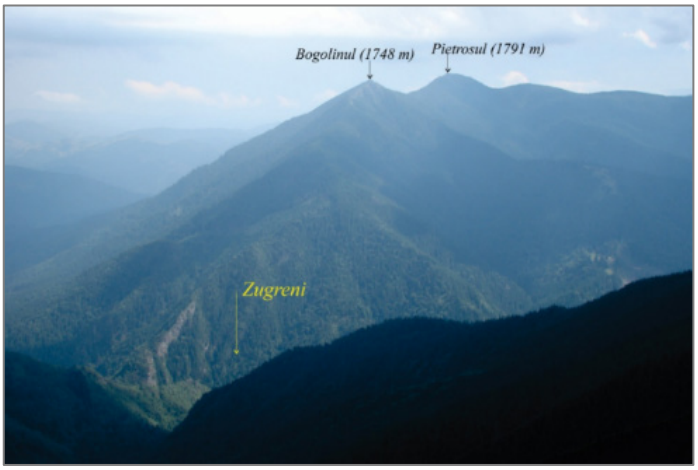

Fig. 21. High local relief and slope gradients, due to the porphyroid gneiss bar of Pietrosu and the Bistriţa's proximity (view from the Giumalău massif, Aug. 2012). *Source: the authors*

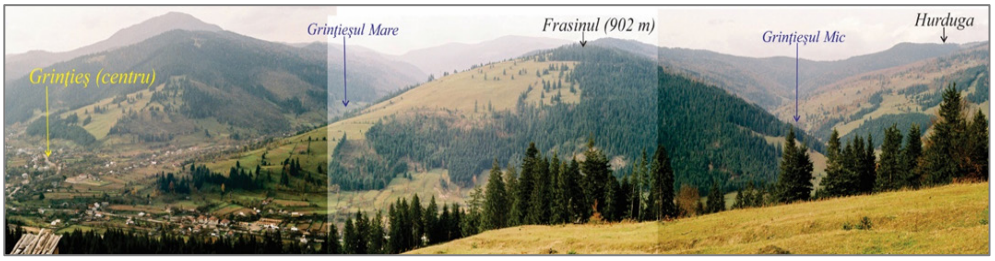

Fig. 22. Moderate and low local relief and slope gradients, due to the brittleness of the Cretaceous Carpathian flysch: Sinaia Strata and Bistra Strata (the Bistricioarei Valley at Grinţieş) (photo: Oct. 2001). *Source: the authors*

4. Conclusions

Although the crystalline facies predominates, the Bistriţei Mountains (one of the best defined mountain units in the Eastern Carpathians) exhibit a variety of landforms, from widely vaulted domes, to ridges and pointed peaks, levelled platforms, gorges, defiles, landslides etc., all originating from the different properties of the petrographic substrate.

In the morphogenesis and morphography of the Bistriţei Mountains, a very important role is played by:

- the lithological monotony of the crystalline formations of Tulgheş (epimetamorphic), and of Rebra – Barnar and Hăghimaş – Rarău – Bretila (mesometamorphic), which are responsible for the occurrence of domes and rounded backslopes;
- the high hardness of the porphyroid gneiss of Pietrosul Bistriţei, developed as a bar in the South-North direction, in the central-eastern area of the mountains, which is responsible, firstly, for the spectacular, steep and uneven terrain in this section and, secondly, for the good preservation of the "Bâda" and "Poiana Ciungilor" levelled platforms, sheltered (by this bar) against the regressive erosion of the Bistriţa tributaries;
- the higher hardness in comparison with the metamorphic rocks of the Mesozoic dolomites and limestones occurring in the southern part of these mountains, which has led to the individualization of some hillocks, usually slender, with steep slopes, rocky features and scree at their foot: Măgura, Comarnic, Bâtca Arsurilor, Piatra Mocilor;
- the brittleness and plasticity of the Cretaceous flysch in the South-East and East, resulting in the development of a less impessive terrain: wide valleys, medium and slightly inclined slopes, and medium and low local relief values ("the Grinţieşului Low Mountains" – Săndulache, 2007).

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ANALYSIS OF THE HAIL PHENOMENON IN BISTRIȚA-NĂSĂUD COUNTY IN 2024: LOCALIZATION, IMPACT, PERCEPTION, AND MITIGATION

Andras-Istvan BARTA[1], Irina RABOȘAPCA[2], Ștefan BILAȘCO[3], Aurelian Cosmin MOLDOVAN[4], Tania MIHĂIESCU[5]

ABSTRACT. – Analysis of the hail phenomenon in Bistrița-Năsăud county in 2024: localization, impact, perception, and mitigation. This study examines the hail phenomenon that impacted Bistrița-Năsăud County during the period 2022-2024, with a particular focus on the significant hail events of 2024. The research integrates climatological data, meteorological observations, and locally sourced information to evaluate the frequency, localization, and intensity of hail across the region. Specific emphasis is placed on areas such as Săsarm, where the June 2024 hailstorm inflicted severe damage on households, agricultural infrastructure, and public amenities. The study not only documents the material and economic consequences but also investigates the community's perception of the implemented preventive and mitigation strategies, such as anti-hail systems and agricultural insurance policies. Findings underline that while some measures were in place, there remains a critical need for more robust and effective climate risk management approaches, particularly in high-risk areas like Bistrița-Năsăud County. Enhanced public awareness campaigns and investment in adaptive technologies are identified as key steps toward increasing community resilience.

Keywords: *hail, storm, intensity, extension, damage, management, perception, mitigation.*

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1. Introduction

Hail is an extreme climatic phenomenon, associated with severe convective storms, and is intensified by current climate change, which contributes to the increase in frequency and intensity of the phenomenon at the European, national, and regional levels. The phenomenon is strongly influenced by morphological conditions, the contribution and consistency of air masses, and regional climatic specificities. Although the hail phenomenon has a major impact on natural and anthropogenic systems, it evolves in narrow strips, typically hundreds or thousands of meters wide, and the damage is correlated with the intensity and aggressiveness of the phenomenon, rather than its spatial extent. Because it occurs during the growing season of vegetation, the damage is considerable, especially in agriculture (crops and agricultural infrastructure) (Moldovan F., 2003).

With the intensification of the phenomenon and the increase of hailstones size, the impact on agricultural land has grown, but more recently, it has also affected homes, agricultural infrastructure, and transportation means. As a result, hail events are among the costliest extreme events related to climate in several European regions, causing substantial damage (fig. 1).

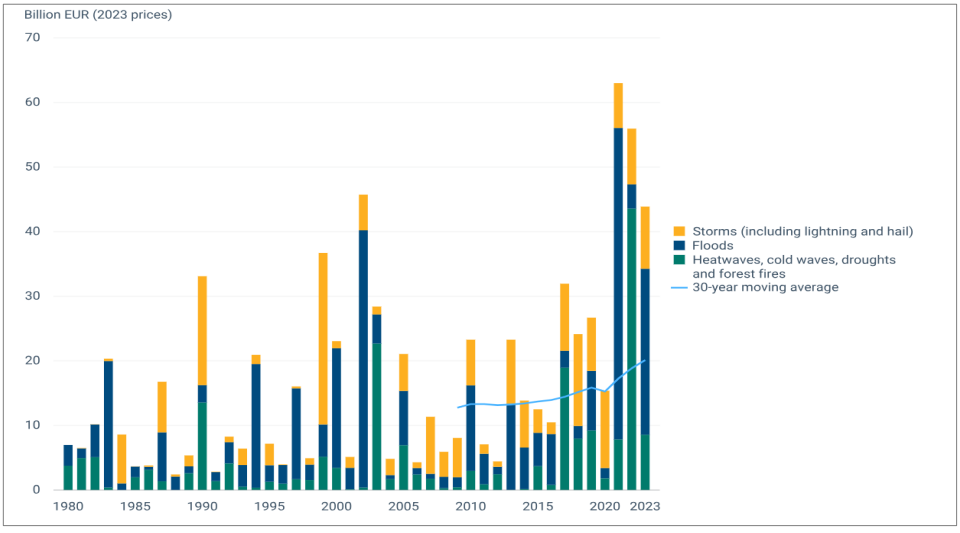

Fig. 1. Annual economic losses caused by weather-and climate-related extreme events in the EU Member States, including hail.
Source: Annual economic losses caused by weather-and climate-related extreme events in the EU Member States | European Environment Agency's home page, 06 Nov 2024

To identify the evolution of the hail phenomenon at the national, regional, and local levels in Romania, we analysed a study conducted by Francesco Battaglioli (European Severe Storms Laboratory). An Additive Logistic Regression model for large hail (ARhail) was developed using convective parameters from the ERA5 reanalysis, hail reports from the European Severe Weather Database (ESWD) and lightning observations from the Met Office Arrival Time Difference network (ATDnet). This study analysed the long-term changes in storms that produce hail. The analysis was based on observations and numerical modeling for the period 1950-2022. The results showed that between 1950 and 2022, the number of hail incidents increased in Europe, including those with hailstones larger than 2 cm in diameter, as well as the number of cases involving hailstones larger than 5 cm (fig. 2) (Battaglioli, F. et al, 2023). We noticed the same pattern of evolution of the hail phenomenon at the national level in Romania, both in terms of intensity and size, as well as in the recorded damage.

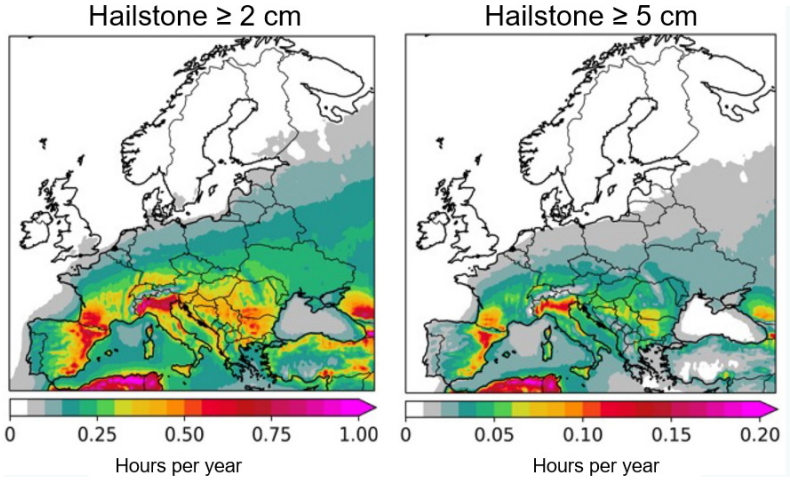

Fig. 2. The trend for large hail cases (number of hours per year) between 1950-2022 (Battaglioli, F. et al., 2003)

According to the European Severe Weather Database, between July 1 and July 22, 2023, 2262 hail cases were reported in Europe, 38 of which were in Romania (InfoClima.ro).

One remarks that there is an overlap between the locations of aggressive hail occurrences and the main agricultural regions of Europe, which results in the high value of damage and the increased vulnerability associated with this phenomenon.

In Romania, the normal occurrences of the phenomenon are specific to the transitional season from spring to summer (the months of May, June, and July), with exceptions such as hails in April and September, which are due to climatic anomalies. In the North-Western region of Romania, the hail phenomenon predominantly occurs in the counties of Satu Mare, Sălaj, Cluj, and Bistrița-Năsăud, conditioned by the intrusion of humid and cold air masses from the Icelandic Low and their collision with warm air masses from the Someș Plain, Someș Corridor, Someșul Mare Corridor, Someșul Mic Corridor, Someș Plateau, and the Transylvanian Plain.

2. Characteristics and Evolution of the Hail Phenomenon in Bistrița-Năsăud County

In Bistrița-Năsăud County, the hail phenomenon occurs in the Someșul Mare Corridor, Ilva Valley Corridor, Șieu Corridor, and the North-Eastern part of the Transylvanian Plain. Due to the climatic and geographical conditions, hail is most frequent in Bistrița-Năsăud County in June.

By performing a time analysis of the hail phenomenon in Bistrița-Năsăud County, we found that in the last decade, this phenomenon has become increasingly frequent and more intense. Previously, there were 3-4 events per year in which the hailstones were small (under 10 mm), only partially affecting agricultural crops. Currently, one notices that the hailstones are larger, reaching up to 50 mm, and most often lead to the total destruction of agricultural crops, significant damage to forest vegetation, agricultural infrastructure (greenhouses, hothouses, livestock facilities), agricultural machinery, transportation, and homes.

The analysis of the evolution of the hail phenomenon in Bistrița-Năsăud County for the period 2022-2024, based on reports from institutions responsible for managing emergency situations, reveals an obvious alignment with the general occurrence patterns noticed at the European and national levels. In the context of global climate change, characterized by increased frequency and intensity of extreme weather phenomena, hail has represented a significant risk factor in this region. Over the three years analysed, 23 events were recorded, varying in intensity and hailstone size, with diameters ranging from 3 mm to 50 mm. This variability reflects the diversity of local weather conditions and the role of regional climatic specificities.

The frequency of hail events in the county is comparable to that in other exposed regions, indicating the presence of determining factors such as the area's rugged morphology and the dynamics of warm and cold air masses, which facilitate the formation of convective storms. The size of the recorded hailstones is similar to those reported in other areas of Romania, as well as in Central

Europe, where the hail phenomenon causes significant damage to agriculture, infrastructure, and local communities. This trend highlights the importance of implementing proactive measures, such as anti-hail systems and agricultural loss insurance, which are essential for reducing economic and social impact.

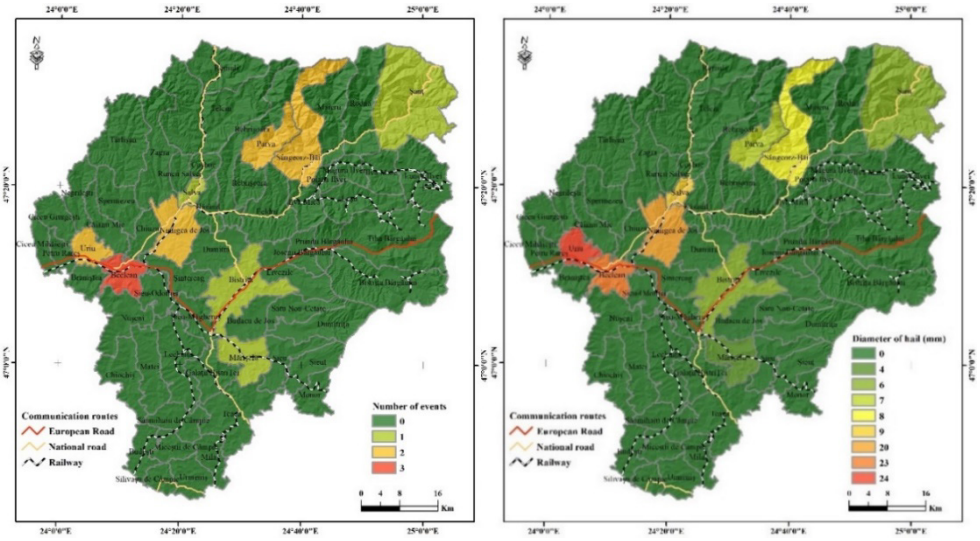

Fig. 3. Spatial Distribution and Hail Diameter in Extreme Weather Events of 2022, Bistrița-Năsăud County.
Source: Modeling performed based on data from the National Administration „APELE ROMÂNE", Someș-Tisa Basin Water Administration, Bistrița-Năsăud Water Management System

In 2022, there were 8 weather events with hail that affected 9 administrative-territorial units (UATs). As seen in fig. 3, hails in 2022 were predominantly noticed in Someșul Mare Corridor (Uriu commune, town of Beclean, Nimigea commune, Șanț commune), Rebra Valley (Parva commune), Borcut Valley (town of Sângeorz-Băi), and Șieu Valley (Mărișel commune). Pursuant to the map's color scheme, one can analyse the diameter of the hailstones in 2022. According to this, the hailstones size varied between 4 mm and 24 mm, with the largest size recorded in Cristeștii Ciceului, Uriu commune, and the smallest in Domnești, Mărișelu commune.

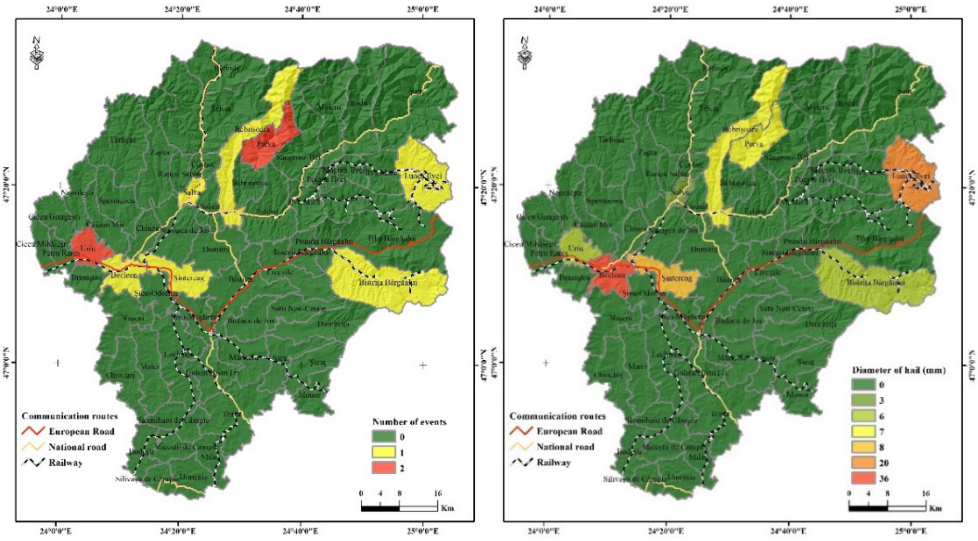

Fig. 4. Spatial Distribution and Hail Diameter in Extreme Weather Events of 2023, Bistrița-Năsăud County.
Source: Modeling performed based on data from the National Administration „APELE ROMÂNE", Someș-Tisa Basin Water Administration, Bistrița-Năsăud Water Management System

In 2023, there were 6 weather events with hail, affecting 8 administrative-territorial units (UATs). By examining the cartographic representation of the hail events in 2023, one remarks that the majority of events occurred in Someșul Mare Corridor (Cristeștii Ciceului commune, town of Beclean, Șintereag commune, Salva commune, Rebrișoara commune), along Bistrița Ardeleană Valley (Bistrița Bârgăului commune), Ilva Valley (Lunca Ilvei commune), and Rebra Valley (Parva commune). According to the color scheme of the maps, the largest hailstone diameter was 36 mm (Beclean), while the smallest diameter was recorded in Salva.

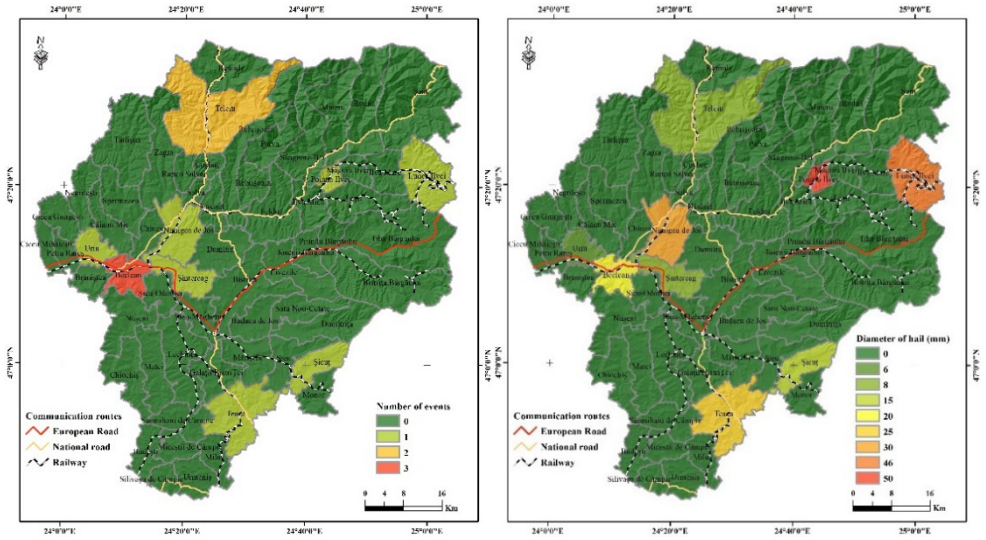

Fig.5. Spatial Distribution and Hail Diameter in Extreme Weather Events of 2024, Bistrița-Năsăud County.
Source: Modeling performed based on data from the National Administration „APELE ROMÂNE", Someș-Tisa Basin Water Administration, Bistrița-Năsăud Water Management System

Analyzing the hail events of 2024 (fig. 5), one notices that there were 6 events, which occurred in 10 administrative-territorial units (UATs), 9 of which resulted in material losses. The hail events are spatially located in Someşul Mare Corridor (Cristeştii Ciceului, Beclean, Şintereag, Mocod), Sălăuţa Valley (Telciu), Ilva Valley (Lunca Ilvei, Ilva Mare, Poiana Ilvei), Şieu Valley (Şieuț), and in the North-East of the Transylvanian Plain (Dipşa Valley, Teaca commune). The largest hailstone diameter was recorded in Ilva Valley (Poiana Ilvei and Lunca Ilvei).

The most aggressive hail events in recent times occurred in 2024, which prompted us to carry out this study. In 2024, several hail events took place in Bistrița-Năsăud County, two of which caused major damage (see Table 1).

Table 1. Economic Damage Caused by Hail Events in 2024

UAT	Date	Houses		Land		Agricultural installations (greenhouses, glasshouses)		Social and administrative buildings	Private businesses
		>25 %	>50 %	Nr. of properties/ Damage degree	Area (hectares)	Nr. of properties	Area (hectares)		
Bistrița	04.06.24	-	-	1 (>75%)	55,31	-	-	-	-
Chiuza	04.06.24	314	25	9 (100%)	530	2	0,33	6	7
Șintereag	05.06.24	41	25	1 (100%)	435,4	9	6,19	7	-
Livezile	13.06.24	2	-	-	-	-	-	-	-
Nimigea	04.06.24	38	-	101 (75%)	205	24	10,85	1	-
Beclean	04.06.24	59	-	83 (100%)	41,34	3	0,18	2	1
Branișste	04.06.24	-	-	3 (100%)	4,43	-	-	-	-
Ilva Mare	10.06.24	78	60	-	-	-	-	-	-
Lunca Ilvei	10.06.24	100	136	-	-	-	-	-	-
Total		**632**	**246**	**198**	**1271,5**	**38**	**17,55**	**16**	**8**

Data source: https://bn.prefectura.mai.gov.ro/

Quantifying the damage resulting from these events, one remarks that 9 administrative-territorial units were severely affected. In 7 municipalities, 632 houses and their annexes were affected by 25% or more, while 246 houses and annexes were destroyed by 50% or more, totalling 878 houses. 198 agricultural producers were affected, 49% of whom had total crop damage (100%), with a total affected area of 1,271.48 hectares. Additionally, 38 owners of agricultural installations (greenhouses, glasshouses, animal pens) suffered damage, with a total destroyed area of 17.55 hectares. According to the reports from the municipalities, there was also additional damage to 16 social and administrative buildings (town halls, schools, churches, cultural centres) and 8 private businesses. The previously analysed data indicates that the most aggressive hail event was on June 4, 2024, with the largest spatial extent, affecting 5 UATs.

Fig. 6. Images captured in the village of Săsarm, Chiuza Commune, during the hail events of June 4, 2024

The hail phenomenon, as illustrated by the images captured in the village of Săsarm, located in Someşul Mare Corridor, reflects the characteristics of an extreme climatic phenomenon. It had a significant impact on the natural environment, households, and the local economy, with direct implications for the rural community. As a result of the hail phenomenon in Săsarm, the damage was substantial, affecting both households and local infrastructure. Major damage occurred to the roofs of houses, with annexes being completely or partially destroyed. Large hailstones, accompanied by gusts of wind exceeding 90 km/h, punctured the exterior insulation of buildings and uprooted numerous trees. Although no victims were reported, the phenomenon caused considerable material damage, requiring intervention from emergency teams to support the population and mitigate the negative effects of the storm.

The hail event in Săsarm also had a significant impact on vegetable fields and greenhouse structures. Large hailstones and the intensity of the storm seriously damaged these agricultural structures, puncturing plastic sheets and damaging metal frameworks, which severely impacted the production of vegetables and fruits. Material damages included the destruction or damage of greenhouses and glasshouses, as well as crop losses due to plant damage. As a result, farmers had to invest in costly repairs or completely rebuild these spaces, significantly reducing their productivity and income. The impact was felt not only economically but also in the loss of confidence in agricultural practices based on protection against extreme weather phenomena, requiring stronger preventive measures for the long-term protection of agricultural investments.

The hail phenomenon was repetitive in most of the administrative-territorial units where it occurred. For example, in Uriu commune, the hail event took place in all three years included in the study, totalling 5 events. In Beclean, hail also occurred annually, with 7 such events recorded. This demonstrates that in this region, hail is no longer an exception but a frequent event, with a high probability and medium to high impact on local communities, agriculture, and infrastructure. This situation calls for the implementation of preventive, mitigating, and counteracting measures to manage the risks caused by this phenomenon. The recurrence of the phenomenon necessitates the adoption of well-founded managerial measures aimed at preventing, mitigating, and fighting the risks associated with hail.

3. Perception of the hail phenomenon

Measures taken by the public administration and individuals are directly proportional to the level of perception and acceptance of extreme climatic phenomena. The reduced perception of hail by the population is an issue that combines factors such as public awareness, climate education, media exposure, and risk perception. In many cases, hail is considered an isolated or trivial event, without fully understanding its economic and social impact.

The main reasons for the reduced perception of the hail phenomenon are:

- Lack of awareness of its impact;
- Hail is usually a short-term event with a limited geographic range, making it difficult to be perceived as a global or long-term problem. Other extreme weather phenomena, such as floods and heatwaves, receive more attention than hail, leading to its underestimation;

- The lack of detailed information in schools and educational programs about hail and related phenomena contributes to a reduced perception;
- Severe hail-related events are reported rarely or only in extreme cases, limiting public awareness;
- The lack of investments in preventive infrastructure means that those affected may suffer significant financial or personal losses without being prepared to manage these risks.

In this context, measures to improve perception and acceptance are necessary, such as:

- Awareness campaigns and educational programs highlighting the impact of hail on agriculture, economy, and safety;
- More documented media articles focusing on vulnerability, hail-related damage, and management measures.

The appropriate perception and acceptance of an extreme phenomenon inevitably leads to the implementation of preventive and counteraction measures at both institutional and individual levels.

4. Management measures of hail-induced risks

Currently, in Bistrița-Năsăud County, there is no hail management system adapted to the new climatic trends, and there are no hail protection systems in place. Due to the fact that agricultural land consists of small plots, with no associations or large agricultural producers, the insurance system is either ignored or difficult to implement. Therefore, hail risk management must be improved and involve a combination of active measures to reduce the economic and social impact of this meteorological phenomenon. The strategies can be grouped into several categories:

1. **Prevention and mitigation technologies**:
    - ***Hail protection systems***, which involve rocket launchers or the use of ground-based silver iodide generators designed to create a condensation nucleus that limits the formation of large hail, transforming it into rain or smaller hail;
    - ***Protective nets***, mainly used in agriculture; these physical nets protect crops and orchards from the impact of hail;
    - ***Drone use***, a technology involving drones dispersing substances similar to silver iodide to control hail formation. This technology has already been tested in some regions (Doe, J., & Smith, R., 2020, pp. 12-25).

2. **Agricultural insurance**: Hail insurance is essential for farmers. It compensates for economic losses and is subsidized in many countries.
3. **Monitoring and early warning**: The use of weather radars and satellites allows for the forecasting of storms with hail potential. Early warning systems enable farmers and communities to take protective measures (such as sheltering equipment, protecting animals, etc.).
4. **Education and training**: In the context of limited perception, this is an important management measure. Information campaigns would help farmers and local authorities understand the risks of hail and implement appropriate solutions (Brown, C., 2021, pp.45-48).
5. **Innovative solutions**:
   - ***Climate modeling and forecasting***: Advanced research in hail formation offers tools to forecast the size and frequency of hail in different regions;
   - ***Integrated climate risk management***: This includes adapting infrastructure and supporting the transition to more resilient agricultural practices.

These measures, when implemented together, contribute to minimizing the damage caused by hail and supporting a more resilient economy. National and local authorities, alongside international organizations, play an essential role in implementing these solutions.

5. Conclusions

The hail phenomenon in Bistrița-Năsăud County, particularly between 2022 and 2024, has significantly impacted local communities, causing major disruptions to agricultural lands, infrastructure, and economic activities.

Analysing hail events from this timeframe reveals an alarming trend: increased frequency and severity of hailstorms, as seen in notable incidents such as those in June 2024. These findings underscore the challenge of managing this extreme climatic phenomenon in the context of ongoing climate change.

Institutional and community perceptions of hail risks remain insufficient, leading to gaps in preparedness. Data collection on hail events is fragmented, and the absence of a systematic approach to inform the population about prevention and mitigation measures exacerbates the vulnerability of affected areas. For example, many localities lack access to real-time warning systems or comprehensive knowledge about protective actions, such as anti-hail technologies and agricultural insurance.

To address these challenges, implementing protective measures such as anti-hail netting, advanced monitoring systems, and enhanced insurance programs is critical. These strategies would reduce material losses and bolster the resilience of communities to extreme weather. Moreover, integrating these measures with broader climate adaptation strategies is vital for mitigating the long-term effects of hail, particularly in high-risk zones like Bistrița-Năsăud County. Ensuring public awareness and institutional coordination will be pivotal in fostering a more prepared and adaptive response to such climatic threats.

The conclusions provide a roadmap for policymakers and stakeholders, offering insights into the development of regionally and locally tailored strategies for mitigating hail risks. This framework emphasizes preparedness and adaptation in the context of intensifying climate change effects, relevant not only for Bistrița-Năsăud County but also for other regions facing similar challenges.

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ENVIRONMENTAL AND CLIMATE CHANGE EDUCATION IN ROMANIA FROM THE PERSPECTIVE OF INTERNATIONAL AND NATIONAL STRATEGIES IN THE FIELD

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ABSTRACT. – Environmental and climate change education in Romania from the perspective of international and national strategies in the field. On any society's way towards sustainable development education plays a fundamental role, by providing knowledge and shaping attitudes. Over the last decades, the education for sustainable development has been increasingly addressed by specific policies at different levels – international, European, national. In this context, this paper aims to briefly review strategies/programs/plans regarding the education for sustainable development at all these levels, with a focus on those in Romania. In order to do this, we surveyed the websites of the UN, the EU, the Ministry of Education and Research of Romania, and read the representative documents on the subject, with the aim of situating developments in the field in Romania in a more general framework, and identifying specific national elements. If internationally, concerns and policies in this field are well-established, in Romania they only date back to the year 2018, as a response to the UN's 2030 Agenda for Sustainable Development, culminating in 2022 in the development of a strategy for environmental and climate change education. As a way to implement this strategy, the "Green Week" program was introduced in all primary and secondary schools in the country.

Keywords: *education for sustainable development, environmental education, climate change, education for environmental sustainability, Romania.*

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1. Introduction

Sustainable development has become an increasingly present topic in international and national development policies in recent decades, since this concept had been presented in the Brundtland report "Our Common Future" in 1987. In achieving its main goal (to meet the needs of the present without compromising the needs of the future generations), education plays a crucial role, as it can provide knowledge and shape attitudes. At the same time, in order to produce lasting changes, education for sustainable development (ESD) needs to address every member of the society and must be embedded in all levels of the formal education – early childhood education and care, primary/secondary school, higher education – and become an important topic in the lifelong learning programs.

Since the 1990s, Romania has undertaken a sustainable development path by developing a series of specific strategies (*Romania. National Strategy for Sustainable Development* (1999), *National Strategy for Sustainable Development of Romania*. *Horizons 2013-2020-2030* (2008), *National Strategy for Sustainable Development of Romania 2030* (2018)) and creating a Department for Sustainable Development within the government (https://dezvoltaredurabila.gov.ro/) responsible for their implementation. However, the education for sustainable development was addressed more directly only recently, in a strategy for environmental education (a basic component of the education for sustainable development) that was implemented starting with the 2022-2023 school year.

In this context, our study aims to briefly review the main actions undertaken and documents developed regarding the education for sustainable development at different levels – global, European and national. The purpose of this approach is to situate the developments in the field in Romania within a more general framework, and to identify specific national elements. In this regard, our research was based on reviewing official documents on ESD in order to get an overview of the policies and actions in the field. We collected the documents (listed into the reference section of the paper) from the websites of the following institutions: United Nations (UN), UNESCO, the European Commission, the Council of Europe, the Presidential Administration of Romania (PA), and the Ministry of Education of Romania (ME).

2. ESD at the international level

Environmental education (under various names such as: environmental education, education for sustainable development, climate change education, risk adaptation education, etc.) has been a constant of all UN comprehensive sustainable development policies (Agenda 21, the 2030 Agenda) and considered an important element within the consecutive sectoral policies. For instance, the UN Framework Convention on Climate Change (UNFCCC) (UN, 1992) emphasizes, in Article 6, the need for "education, training and public awareness", at national and regional levels, for addressing climate change and its effects, while Art. 13 of the Convention on Biological Diversity supports the creation of educational programs contributing to raising awareness on the sustainable use of biodiversity resources.

The concept of "environmental education", as it was originally called, was first used in Recommendation 96 of the United Nations Conference on the Human Environment in Stockholm in 1972. Agenda 21 of the United Nations Conference on Environment and Development (the Rio Summit) of 1992 underlined, in Chapter 36, the essential role education, training and public awareness could play in achieving all sustainable development goals (UNESCO, 2020). On that occasion, the more comprehensive term of "education for sustainable development" (ESD) was chosen, including not only issues related to environmental protection, but also those regarding population, economic development, etc. (UNESCO, 2018). ESD requires the inclusion of key sustainable development issues in teaching and learning: climate change, biodiversity, disaster risk reduction, reduction of poverty, and sustainable consumption and production. Climate change is a crucial area for sustainable development (UNESCO, 2014); therefore, it can be considered one of the priority themes of ESD.

The importance given to the education for sustainable development has gradually increased to the point of declaring the period 2005-2014 the Decade of Education for Sustainable Development (DESD), with the aim of orienting education towards learning how "to live and work sustainably" (UNESCO, 2014, p. 3). The United Nations Conference on Sustainable Development (Rio+20) continued this direction by supporting the integration of knowledge and behaviors related to sustainable development in education even after the DESD ended. These initiatives were followed by action plans such as GAP 2015-2019 (Global Action Programme on ESD 2015-2019) and ESD for 2030 aimed at expanding the actions initiated within the DESD on a global scale. Through the

UN Decade for ESD and the GAPs on ESD, efforts have been made to integrate ESD into educational policies, curricula and teacher training all over the world (UNESCO, 2018).

In the UN documents on ESD, the role of Member States in the environmental education / education for sustainable development has been described more and more specifically, to the point of emphasizing, in the UN General Assembly Resolution 74/223 (2019), that it "encourages governments to increase efforts to systematically integrate and institutionalize education for sustainable development in the education sector and other relevant sectors" (UN, 2019, p. 4).

The 2030 Agenda adopted at the 2015 UN Sustainable Development Summit presents the 17 Sustainable Development Goals (SDGs), which aim to eradicate poverty, fight social and other inequalities, including by ensuring access to education, and protect nature (Benedek et al, 2021). In this agenda, education is considered a fundamental element, essential for the sustainable future of any society. Consequently, *Goal 4. Quality Education* was dedicated to it, also taking into account the fact that the right to education is one of the fundamental human rights. Target 4.7 of Goal 4 aims to ensure that, by 2030, all students acquire „the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles [...]" (UN, 2015, p. 19). Besides that, environmental education contributes to achieving the targets of many other goals, such as Goal 13 Climate Action, Goal 12 Responsible Consumption and Production, Goals 14 and 15 on the protection of aquatic and terrestrial life, etc. Therefore, ESD is recognized as a key element of quality education, and as a key enabler for all 17 SDGs (UN General Assembly, 2017, p. 3).

3. ESD at the European level

An important step taken at EU level regarding ESD is the 3046th Education, Youth, Culture and Sport Council meeting (within the Council of Europe), Brussels, 18 and 19 November 2010, where for the first time the Council tackled the issue of ESD, integrating economic, social and environmental perspectives. The conclusions adopted at this meeting emphasize the key role of education in achieving a sustainable society, in developing the knowledge, skills and attitudes needed to achieve this goal, and promoting these elements

to individuals and groups. Member States are therefore encouraged to support the development and implementation of ESD in the education and training systems at all levels, in formal, non-formal and informal education. This involves, among others, integrating ESD into curricula, implementing interdisciplinary and cross-curricular approaches at all educational levels to address sustainability challenges, creating training programs for teachers that give them the knowledge and skills necessary to promote ESD, etc. Collaboration networks among the institutions that provide education and among them and NGOs also need to be promoted, aiming to strengthening citizens' ability to cope with imminent problems that may arise unexpectedly and to find long-term solutions to them (Council of the European Union, 2010).

In response to the current worsening climate crisis, the European Commission launched The European Green Deal in 2019, through which it aims to achieve a climate-neutral Europe by 2050 (European Commission, 2019). The Green Deal highlights the role of environmental and climate education in implementing the green transition and achieving climate neutrality. Noting that, despite the obvious progress in bringing environmental issues to the attention of the public and decision-makers, education for environmental sustainability (a term used interchangeably with ESD) is not an important element in EU educational policies, a framework for its implementation at the level of all Member States has been proposed.

In this context, the **EUROPEAN EDUCATION AREA (EEA)** Portal and **GreenComp** - The European Sustainability Competence Framework were launched in January 2022. The EEA addresses five areas of interest, including environmental education (under the name of "green education"). Within it, two main directions are addressed: *Education for Climate Coalition* (a large education community where students, teachers and organizations can exchange ideas, share examples of good practices, participate in events on climate change and sustainability issues) and *Learning for the green transition* (https://education.ec.europa.eu/focus-topics/green-education).

To support this latter direction, in June 2022 a Council Recommendation on learning for the green transition and sustainable development (2022/C243/01 of 16 June 2022) and an accompanying document (Staff Working Document accompanying the Proposal for a Council Recommendation on Learning for Environmental Sustainability) were issued (Council of the European Union, 2022, European Commission, 2022). This latter document details the aspects presented in the official document and presents examples of good practices in

the field. The Recommendation suggests measures related to aligning education and training strategies and programs with the green transition and sustainable development, training the human resources in education systems to provide education for the green transition and sustainable development, investing in green and sustainable equipment, resources and infrastructure of the schools, creating learning environments for sustainability adapted to local contexts that allow for interdisciplinary approaches, supporting partnerships creation with stakeholders from the civil society, the business sector, academic institutions, etc. in order to develop educational programs.

The European competence framework on sustainability ("GreenComp") is a reference framework for competences that aims to integrate topics and values related to environmental sustainability into all education systems and school curricula in the Member States, in order for all learners to improve and develop knowledge, skills and attitudes enabling them to live, think and act sustainably, both collectively and individually. "GreenComp" includes 12 competencies (valuing sustainability, supporting fairness, promoting nature, systems thinking, critical thinking, problem framing, futures literacy, adaptability, exploratory thinking, political agency, collective action, individual initiative) organized into four interconnected areas: embodying sustainability values, embracing complexity in sustainability, envisioning sustainable futures, acting for sustainability (Bianchi et al, 2022). The document is not prescriptive and the use of the exact framework in education is not mandatory, but it proposes a conceptual reference model that can be used by all those interested and involved (educators and learners) in lifelong learning.

4. ESD at the national level

As part of several international conventions and agreements on Sustainable Development and in order to align with the international and European policies in the field of Sustainable Development and implement SDG 4 and SDG 13, Romania has recently begun to pay increasing attention to the environmental and climate change education. Within the latest National Strategy for Sustainable Development, published in 2018, the education for sustainable development was approached tangentially, through several references to environmental education linked to the transposition of SDG 4, Quality Education. Thus, for the 2020-time horizon, the recommendation was "to support the educational process through extra-curricular educational programs in order to ensure health education, civic

education, cultural-artistic education, scientific education, ecological education, and education through sports" (Guvernul României, 2018, p. 40). The targets for 2030 were: "Ensuring that all learners acquire the knowledge and skills necessary to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and non-violence, appreciation of cultural diversity and of culture's contribution to sustainable development" (Guvernul României, 2018, p. 41), and "Within the educational process, increasing the role of the civic education, of the concepts and principles of a sustainable, peaceful and inclusive society, of the gender equality, of the values of democracy and pluralism, of the values of multiculturalism, of preventing the discrimination and understanding the perception of the "other", of the importance of eradication of all forms of violence with an emphasis on the school violence phenomenon" (Guvernul României, 2018, p. 41). Based on these measures, one can note that the education for sustainable development was expected to be carried out more systematically within extracurricular activities. A suitable framework for including themes related to EDS in every school's learning schedule was "A different kind of school" (in Romanian: "Şcoala Altfel") program (ongoing since the 2011-2012 school year) consisting of five consecutive days dedicated to cultural activities, sports, civic education, health education, traffic education and education for environmental protection.

In the context of the most recent European policies on environmental education / sustainability, Romania adopted a **National Strategy on Environmental Education and Climate Change 2023-2030** in 2022. This document was based on a previous report by the Presidential Administration (AP, n.d.) and addresses primary and secondary education (Ministerul Educaţiei, n.d.). The strategy was transposed into school curricula starting with the 2022-2023 school year and refers to both formal, informal and non-formal education.

Its strategic objectives pursue four directions of action:

1. Implementing an Educational Program for Climate and Environment - in terms of students' knowledge, skills and behaviors, which would allow them not only to understand and use concepts related to the environment and climate change, but also to explore the environment, to be aware of the importance of protecting it and to act in this regard, etc.

2. Educational resources – including, among others, digital tools for environmental and climate change education (integrated web platforms/ applications with educational resources, access to virtual libraries, databases), interactive activities, and outdoor education programs (taking place in the

proximity of the school, in the local area, in protected natural areas, in geoparks, in sustainable urban or rural communities).

3. Infrastructure for sustainable schools – involving rehabilitation of the school buildings (aiming for a network of "green schools"), the provision of sustainable means for school transportation, etc.

4. Measures targeting the human resource involved in climate change and environmental education (teachers and other education actors) - training and other professional development programs in the field of sustainable development, especially on environment and climate change, training programs for learning in nature, etc.

The National Strategy uses a comprehensive definition for the climate change and environmental education, reaching the main areas proposed by the European framework on environmental competences (GreenComp). "By 'climate change and environmental education' we mean an education that promotes a sustainable lifestyle through the development of eco-social skills" (Ministerul Educaţiei, n.d., p. 5), aiming to increase young people's awareness of the natural and socioeconomic problems caused by climate change. The main goal is to provide them with the knowledge, skills, attitudes and values necessary to act and make informed decisions regarding the environment and sustainable development, but also to influence other people in the communities in which they live to respect and protect the environment, to stop the actions producing environmental degradation and combat climate change (Ministerul Educaţiei, n.d.).

The eco-social competences are described in Annex 2 of the Strategy (Ministerul Educaţiei, n.d., p. 42-44) in terms of knowledge, skills and behaviors that students should learn. For example, in the field of Climate change, students are expected to acquire knowledge about the anthropogenic causes of climate change, the impact of climate change on nature, economy and society, as well as about strategies and measures for prevention, mitigation and adaptation to climate change at international, national and individual levels. Among the pursued behaviors are, for example, reducing the student's personal impact and the impact of the family and the community in which one lives on climate change, as well as supporting public policies on climate protection. In the case of the Life on land field, special emphasis is placed on students' knowledge of natural ecosystems and biodiversity, of the threats to them, of ecosystem services, but also of the impact of people and their activities on biodiversity loss, along with measures to protect and restore the natural environment. Students must also act to preserve and protect the environment and be able and willing to engage in such actions.

In terms of implementing the Strategy, "amendments were made to the National Education Law no. 1/2011, in order to include environmental competences among the key competences mentioned in the law" (Ministerul Educaţiei, n.d., p. 4). Also, through "The National Recovery and Resilience Plan (PNRR) funds were reserved for the support and development of a network of "Green Schools", the purchase of electric school minibuses, and the renovation of a significant proportion of existing school buildings, with the aim of increasing their energy efficiency" (Ministerul Educaţiei, n.d., p. 4-5, AP, n.d., p. 4). Another measure that was taken to support the green transition, especially towards "green" buildings, was the development and approval, by an order of the Ministry of Education, of the framework methodology regarding the organization and operation of the "green schools" (MO, 2022).

Given the interdisciplinary and transdisciplinary nature of ESD, in the Romanian education system elements of environmental education are included, usually, in the core curriculum or the optional curriculum for various learning activities/modules in the fields of Geography, Biology, History, Natural Sciences, Sociology, Entrepreneurship Education, Intercultural Education, European Education, etc. However, starting with the year 2023, this type of education received greater attention in the school curriculum in the form of the **Green Week** program. This new approach proposed by the Ministry of Education comes, as already mentioned, in the context of the increased attention paid to environmental education at the level of the European Union and the UN.

Therefore, starting with the 2022-2023 school year, the "Green Week" program was introduced in all schools in Romania, as a way to more effectively implement environmental and climate change education (AP, n.d.). The Green Week is organized according to the methodology issued by the Ministry of Education (OM 3629 of February 2023) (Ministerul Educaţiei, 2023) and involves a period of five consecutive working days dedicated to specific ESD activities such as lessons in nature, debates, role-playing games, building future scenarios, photo exhibitions, documentaries viewing, experiments, living libraries, community service projects, volunteer activities, expeditions and trips into protected areas, etc. (Lesenciuc, 2023).

To support the schools with the implementation of the program, the Ministry of Education launched a digital platform with materials and examples of activities in seven major subjects, partially overlapping with the sustainable development goals (Climate Change, Waste Management, Sustainable Consumption and Production, Biodiversity, Forests and Terrestrial Life, Water and Aquatic Life, and a section dedicated to Exploring Protected Areas in Romania). Some examples of teaching resources in the field of Climate Change for students of different ages are: explanatory videos with examples from Romania regarding

the "desertification" / expansion of sandy soil surfaces in southern Oltenia and green energy and wind farms, comics that address sustainable development goals and climate action, worksheets on meteorology and climate change aspects, etc.

5. Conclusion

ESD must be understood as a part of the "quality education" goal, "as a form of holistic and transformational education" (European Commission, 2021, p. 14) with significant potential to produce bottom-up changes at the societal level by changing values and attitudes.

Its increasing importance for the present and future global society has been highlighted by UN specific action programs since 2015 (Programme on ESD 2015-2019 and ESD for 2030), and by the EU launching in 2022 the European competence framework on sustainability ("GreenComp") with a focus on knowledge, skills, behaviors and attitudes promoting a sustainable human-environment relationship.

Policies in the field in Romania are gradually aligning with these evolutions by at first introducing recommendations and measures regarding the education for sustainable development and the environmental education into the national strategies for sustainable development, and then culminating in a specific strategy on environmental and climate change education for the pre-tertiary education level.

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NATURAL AND MIGRATION BALANCE OF THE POPULATION IN SIBIU COUNTY BETWEEN 1992 AND 2021

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ABSTRACT. – Natural and Migration Balance of the Population in Sibiu County between 1992 and 2021. Sibiu County has been characterised by a better demographic situation than the rest of Romania in the past three decades. The birth rate in Sibiu County has been around 10‰ for many years, above the national and regional average. The mortality rate had similar values, around 10‰ for many years, resulting in a natural balance rate around zero. However, during the pandemic (2020-2021), the birth rate dropped and the mortality rate increased, which determined a negative natural balance rate at the level of Sibiu County, as low as -4.5‰ in 2021. The net migration rate, on the other hand, has been positive in every year since 2006, reaching the highest value of 3.41‰ in 2019, right before the pandemic. The positive net migration rate determined also positive values of the total balance rate in Sibiu County between 2006 and 2019, reaching the highest value of 3.13‰ in 2019. However, the steep decline of the natural balance rate during the pandemic also affected the total balance rate, which became negative in both 2020 and 2021. Nevertheless, the total balance rate is expected to reverse back to positive values after the end of the pandemic. Within Sibiu County, the suburbanization is the major recent process that has an important demographic impact. Areas around the city of Sibiu, especially the commune of Șelimbăr and the town of Cisnădie, have experienced a huge demographic growth, due to migration, but also due to the natural balance rate, which increased suddenly because most of the migrants are young families. Similar situations, although at a lower scale, were recorded in other communes around the city of Sibiu, such as Șura Mare, Șura Mică and Cristian, as well as in communes in Hârtibaciu Plateau (Roșia, Nocrich, Vurpăr, Merghindeal, Chirpăr, Iacobeni), characterised by high birth rates. In contrast, many communes in the western and north-western parts of

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Sibiu County, such as those in Secașe Plateau (Ludoș, Păuca, Loamneș, Apoldu de Jos), Târnava Mare Corridor and the surrounding hills (Micăsasa, Șeica Mare, Axente Sever, Blăjel, Bazna, Alma, Aţel) and even in Mărginimea Sibiului (Tilișca, Râu Sadului, Jina) experienced a population decline due to outmigration and a negative natural balance rate and a negative net migration rate.

Keywords: *natural balance, net migration rate, population dynamics, Sibiu County, Romania.*

1. Introduction

Population dynamics in Romania has changed a lot since the 1990s. The fall of the communist regime in December 1989 determined many changes in the Romanian economy and society, and also meant the end of the harsh pro-natalist policies and strategies of the communist period (Ilinca, 1999, Surd, 2001). The freedom of movement also generated an important outmigration of the Romanian population towards the Western countries, especially during the 1990s, but also after 2000. Most of those who left were young people, and therefore demographic ageing has become an important demographic process in Romania (Nancu, Guran-Nica, and Persu, 2010, Erchedi, 2021). With a lower birth rate and a higher mortality rate, Romania has experienced a demographic decline even since the 1990s, while the negative net migration rate has only worsened the demographic situation. However, in some parts, the process of suburbanization determined pockets of demographic revitalization, on the outskirts of the big cities (Rusu, Bodocan, and Man, 2020). The pandemic had a negative impact on the already declining and ageing Romanian population (Rusu, 2022).

While there are studies concerned with the main demographic issues in Romania (Vasile and Dobre, 2015, Dumitrașcu, Trică, and Caragea, 2018, Hărăguș and Földes, 2020), the number of studies regarding different parts of Romania are relatively few, such as a paper comparing counties from a demographic perspective (Benedek and Török, 2014) or a paper regarding population dynamics in Bistrița-Năsăud County (Patița, 2024). Sibiu County, the study area, is quite outstanding from a demographic point of view, because it presents many positive demographic features, which have been assessed in this paper, and may represent a potential model for other Romanian counties. Despite the pandemic, Sibiu County has experienced positive demographic trends in recent years and may soon change its demographic tendency, from decline to stagnation and then to growth in the near future. Sibiu County is located in the centre of

Romania, in the southern part of Transylvania, an area which was long inhabited by both Romanians and Saxon Germans – now almost completely disappeared, as many migrated to Germany after World War II or after the fall of the communist regime. Sibiu County is perceived favourably by Romanians, because of the economic and social opportunities, as well as the higher living standards provided. As a result, Sibiu County has been characterised by a positive net migration rate since 2006, and even the natural balance rate shows signs of recovery and revitalization.

2. Methodology

Data regarding population is provided in Romania by the National Institute of Statistics, on their TEMPO ONLINE platform. The data regarding the number of births, the number of deaths, the number of migrants (immigration and outmigration) has been taken from this platform, at several territorial levels – the local government level in Romania, comprising the basic administrative units (communes, towns and cities), the county level (specifically Sibiu County, which is the study area), the regional level (mainly data regarding the Centre Region, which includes Sibiu County), and the national level, comprising the entire country. The birth rate, the mortality rate and then the natural balance rate were then computed based on the data regarding the number of births, the number of deaths and the total population for each administrative unit belonging to Sibiu County, then Sibiu County as a whole, as well as the Centre Region and Romania as a whole, for comparative reasons, for the entire period for which such data is available, which is from 1992 until 2021, a total of 30 years. Therefore, we had the opportunity to assess the evolution of these demographic indicators. The same happened with the number of migrants: we computed the immigration and emigration rate, and then the migration balance rate for each year and for each administrative level, between 1992 and 2021. Based on the natural balance rate and the migratory balance rate, the total balance rate was also computed for each year and for each administrative unit. The results regarding Sibiu County as a whole were then compared to the values of the same demographic indicators at the level of the Centre Region and the national (Romanian) level, to assess the situation of Sibiu County in the wider regional and national context. Then, the values of the demographic indicators within Sibiu County were also assessed, in order to have a more detailed demographic analysis at the level of the local administrative units. As a result, areas with different demographic features within Sibiu County were examined thoroughly. Data from the last available year (2021) was analysed in more detail and mapped accordingly. The evolution

of demographic indicators also provided an opportunity to assess the future demographic trends in Sibiu County as a whole and in some of the distinctive areas within the county.

3. Results

3.1. The birth rate

In Sibiu County, just like everywhere else in Romania, the birth rate suffered a continuous decline since the 1990s until today. The highest value of the birth rate, 11.27‰, was registered in 1992, the first year when such data were available. The lowest value of the birth rate was 8.28‰, registered in 2021, the last year when data regarding births was provided (fig. 1).

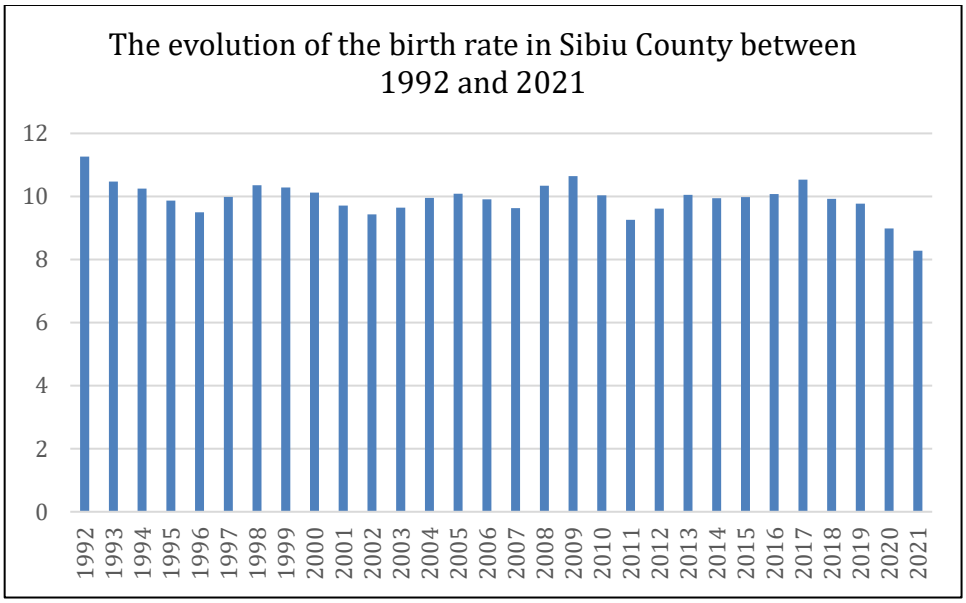

Fig. 1. The evolution of the birth rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Immediately after 1990, the legislation regarding birth control (abortion) was cancelled, and there was a large-scale introduction of contraceptive methods, which determined a drop in the birth rate during most of the 1990s. The economic and social difficulties of the transition period from the socialist period

to an open-market capitalist economy contributed to the decline in birth rate, as well as the migration of many young people. These caused a long-term drop in the birth rate, up until today. Population ageing became an important demographic phenomenon, and the ever lower weight of young people and young adults within the total population determined lower birth rates, year after year. After the year 2000, the birth rate in Sibiu County became lower than 10‰ in almost every year, with some exceptions. Secondary maximal values were recorded in 2009 (10.64‰) and 2017 (10.53‰). Since 2020, the birth rate dropped below 9‰, reaching 8.28‰ in 2021, during the pandemic. The further decrease of the birth rate in recent years is caused by a drop in weight of the fertile population, as the smaller generations born after 1990 are now in the category of young adults, on the one hand, while the pandemic itself was a period of social and economic uncertainty, which determined a decline in both fertility and birth rate.

However, one has to notice that the values of birth rate in Sibiu County have been higher than those at the national level for most years, and even in 2021, when the Romanian birth rate was only 8.2‰. Between 2014 and 2017, the birth rate in Sibiu County was significantly higher than the one in Romania or in Center Region (to which Sibiu County belongs). Nevertheless, after 2017, these differences gradually decreased and are now very small.

At the local government level (fig. 2), it is noticeable that the highest values of the birth rate in 2021 were registered in some communes in Hârtibaciu Plateau, in the centre, East and North-East of Sibiu County, such as Mihăileni (18.75‰ – the highest value), Brădeni, Iacobeni, Vurpăr, all having values above 14‰. Birth rate values above average were also recorded in other communes of Hârtibaciu Plateau (Bârghiș, Chirpăr, Roșia, Marpod, Nocrich, Slimnic, Merghindeal). The reason might be the presence of the Roma population in some of these communes, which traditionally has a higher birth rate than the others, as well as a higher weight of the young adult population in these communes. A similar explanation is true for some of the communes along Târnava Mare Valley (Hoghilag – almost 16‰, Laslea, Brateiu, Târnava). On the other hand, the second highest birth rate value in the county was recorded in Șelimbăr (17.86‰), near Sibiu, where the high birth rate may be explained by the immigration of many young families from the city of Sibiu to this commune. Therefore, the higher weight of young fertile adults determines high birth rates. Similar cases were recorded in the town of Cisnădie (also near Sibiu), in some communes of Mărginimea Sibiului, where the birth rate was traditionally higher (Gura Râului, Jina, Orlat, Poiana Sibiului), as well as in Făgăraș Basin (Cârțișoara, Cârța, Turnu Roșu).

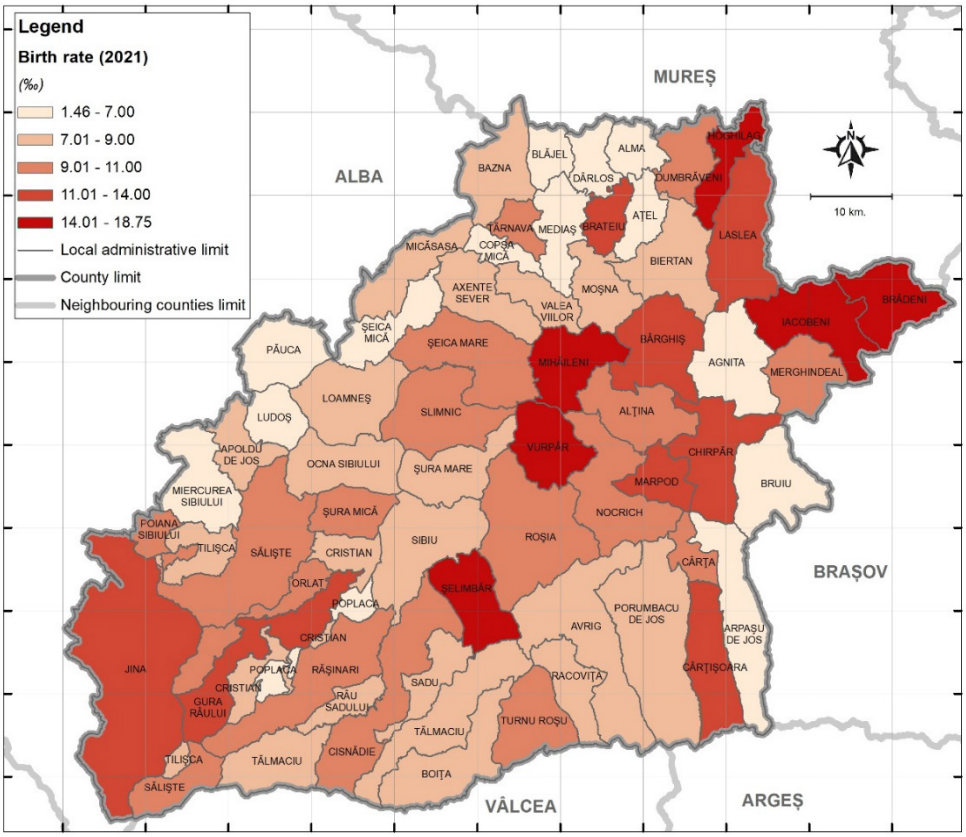

Fig. 2. The birth rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

At the other end, the lowest birth rates were recorded in the western part of the county, in Ludoș (1.46‰) and other communes of Secașe Plateau (Păuca, Apoldu de Jos) and in the western part of Târnava Mare Valley (Aţel, Șeica Mare, Alma, Dârlos, Blăjel), as well as in some urban areas, like the city of Mediaș and the towns of Copșa Mică, Agnita and Miercurea Sibiului, where the birth rate is below 7‰. The situation is worrying, especially in the case of towns and cities, where there should be a more balanced age structure of the population, allowing for a higher birth rate. In the case of communes and some of the smaller towns (Miercurea Sibiului), the main explanation for the low birth rate is the demographic ageing, the lack of young population, who emigrated to the large cities.

However, as already pointed out, the cities themselves are not characterized by a high birth rate. On the contrary, the city of Mediaş recorded the third lowest value in the county in 2021 (4.90‰), while the city of Sibiu recorded a birth rate below the county average (7.24‰). This may be at least partially explained by the process of suburbanization: many young people and young adults emigrate from the large cities to the suburban communes, which accelerates the process of demographic ageing even within the core cities.

3.2. The mortality rate

The mortality rate was relatively constant in Sibiu County between 1992 and 2019, recording values around 10‰. During the pandemic, the mortality rate increased significantly, above 12‰, reaching 12.78‰ in 2021 (fig. 3).

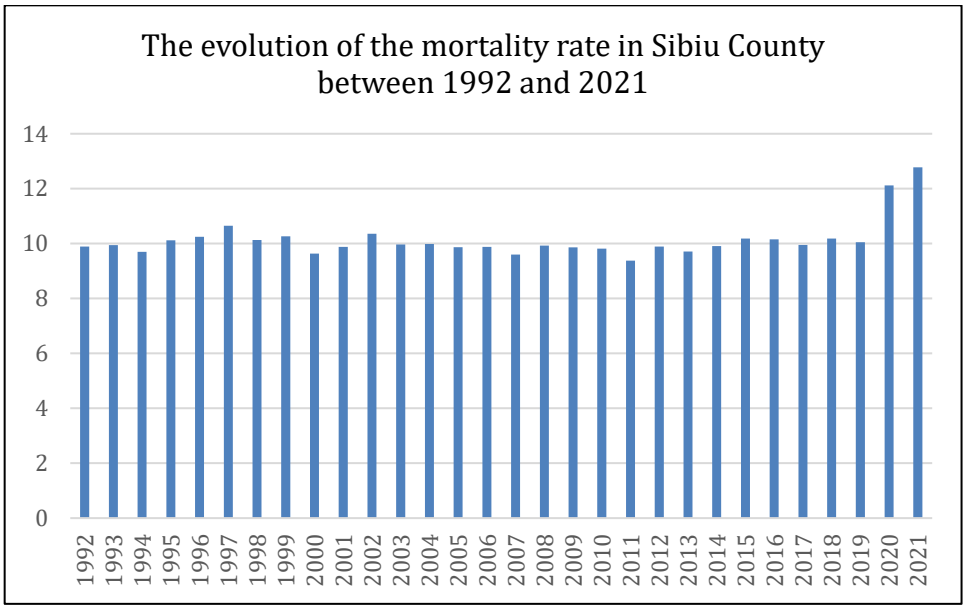

Fig. 3. The evolution of the mortality rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Not taking into account the years 2020 and 2021, the lowest value of the mortality rate in Sibiu County was 9.35‰ in 2011, while the highest value was recorded in 1997, 10.65‰. The average value between 1992 and 2019 was 10‰. However, the mortality rate had slightly higher values after 2014, exceeding

10‰ in almost every year starting with 2015. This small increase in the mortality rate may be related to the process of demographic ageing, and the ever-higher weight of elderly people in Sibiu County, which have a higher mortality than the other age groups. The mortality rate increased suddenly during the pandemic, which proves the direct and indirect deadly effect of the coronavirus, despite the measures taken by authorities to protect the population.

However, if one compares the mortality rate in Sibiu County with the one at national and regional level, it comes out that the mortality rate in Sibiu County was always lower, even during the pandemic. For instance, in 2021, the mortality rate in Romania was 15.2‰, its value in the Centre Region was 14.3‰, while in Sibiu County, it was only 12.78‰. Before the pandemic, between 2014 and 2019, the mortality rate in Sibiu County was around 10‰, compared to values between 11.5‰ and 12‰ in Romania and between 10.5‰ and 11.2‰ in the Centre Region. The situation was similar during the 1990s and 2000s. The difference is explained by the higher demographic ageing at national and regional level compared to Sibiu County, on one hand, and the higher living standards in Sibiu County compared to the rest of Romania and the Centre Region, which were translated in a higher life expectancy in Sibiu County compared to the others.

In 2021, the highest mortality rate was recorded in the communes located in the West of Sibiu County, reaching the highest value in Micăsasa (25.83‰), while values above 19‰ were recorded in communes of Secașe Plateau (Ludoș, Păuca, Apoldu de Jos) and in Poiana Sibiului. These communes are most affected by demographic ageing, and a high weight of the elderly population determines a high mortality rate. The distance to the main urban centres may also play a role, especially in emergency situations, but also taking into account the difficulty to provide medical assistance at local level. High values of the mortality rate were also recorded in some communes of Hârtibaciu Plateau (Șeica Mare, Bruiu, Mihăileni, Bârghiș, Brădeni), with similar problems, as well as in communes of Mărginimea Sibiului (Poplaca, Boița, Rășinari, Gura Râului), or along Târnava Mare Corridor and the surrounding hills (Alma, Valea Viilor, Blăjel, and the town of Dumbrăveni, 16.78‰). Values of the mortality rate above average were also registered in other urban centres, such as the city of Mediaș and the towns of Ocna Sibiului, Sălișteа, Agnita, Copșa Mică, and Miercurea Sibiului.

The lowest mortality rates were recorded in 2021 in communes that have a high weight of the young population, and therefore a low weight of the elderly population, such as Brateiu (4.83‰, the lowest value in the county), Nocrich and Șelimbăr.

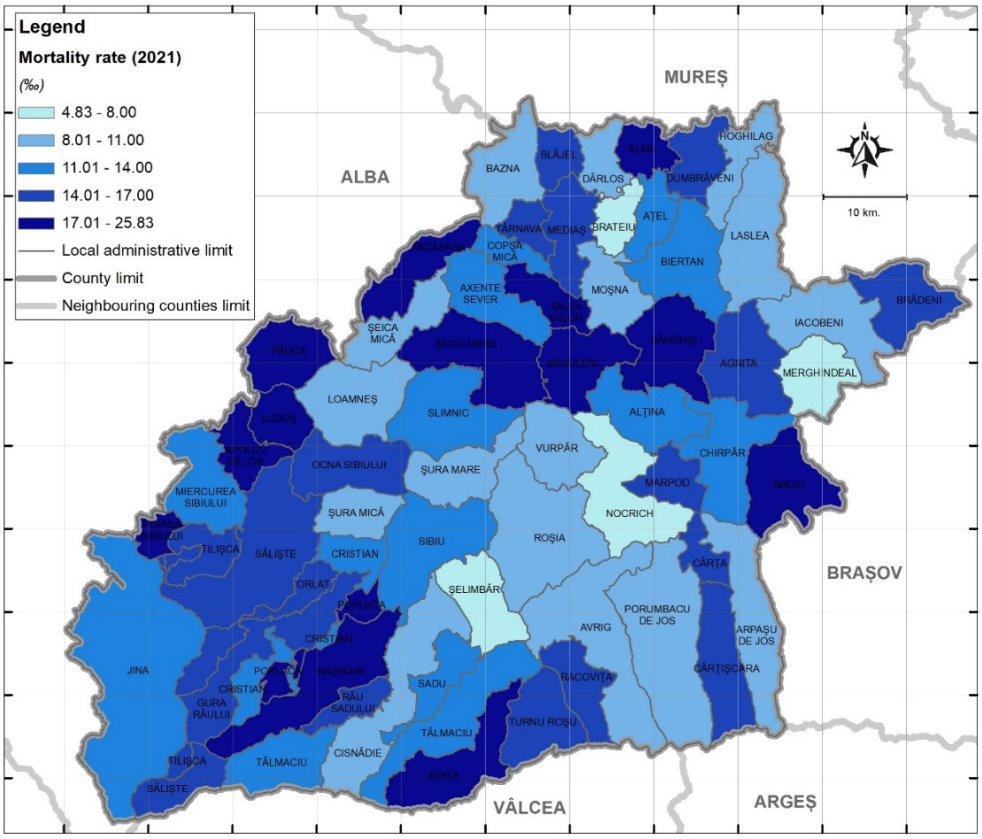

Fig. 4. The mortality rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

Other communes with a low mortality rate are located in Hârtibaciu Plateau (Merghindeal, Vurpăr, Roșia, Iacobeni), in Sibiu Basin (Șura Mare, Șura Mică, the town of Cisnădie), in Făgăraș Basin (Porumbacu de Jos, Arpașu de Jos), and along the Târnava Mare Corridor and the surrounding hills (Bazna, Laslea, Dârlos, Hoghilag). The city of Sibiu recorded a mortality rate just slightly below the county average in 2021.

3.3. The natural balance rate

The evolution of the natural balance rate is a direct result of the evolution of the birth rate and that of the mortality rate. In Sibiu County, just like everywhere else in Romania, the natural balance rate decreased between

1992 and 2021 proportional to the birth rate, because the mortality rate had only minor variations, except for 2020 and 2021, when the increase of the mortality rate led to a sudden decline of the natural balance rate (fig. 5).

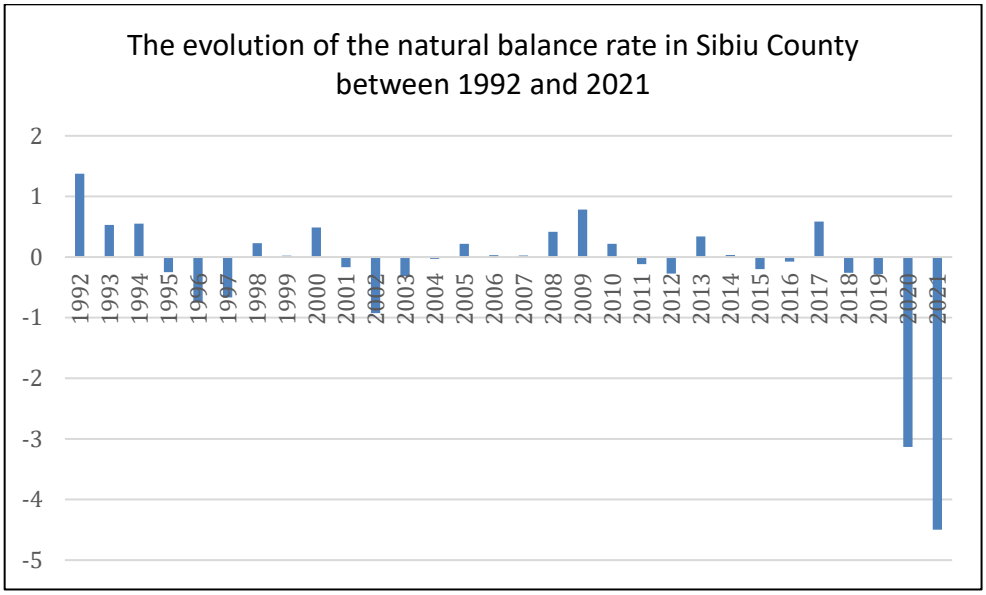

Fig. 5. The evolution of the natural balance rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

The natural balance rate had its highest value, 1.38‰, in 1992, the first year of the analysed period, when there was still a relatively high birth rate, given the then-recent ending of the socialist period in Romania. The natural balance rate decreased in the next years and became negative for the first time in 1995 (-0.25‰). After 1995, there was a certain balance between the values of the birth rate and those of the mortality rate in Sibiu County, which meant that the natural balance rate has been close to zero for many years, with some very small variations. For instance, higher values of the natural balance rate were recorded in 2009 (0.78‰) and 2017 (0.59‰), and lower values in 2002 (-0.92‰).

As a result of the pandemic, the mortality rate increased significantly in 2020 and 2021, which caused a sharp decline of the natural balance rate from -0.28‰ in 2019 to -3.13‰ in 2020 and to -4.5‰ in 2021, when the lowest value of the natural balance rate was recorded. However, even in these conditions, the natural balance rate in Sibiu County in 2021 was higher than in Romania as a whole or than in the Centre Region.

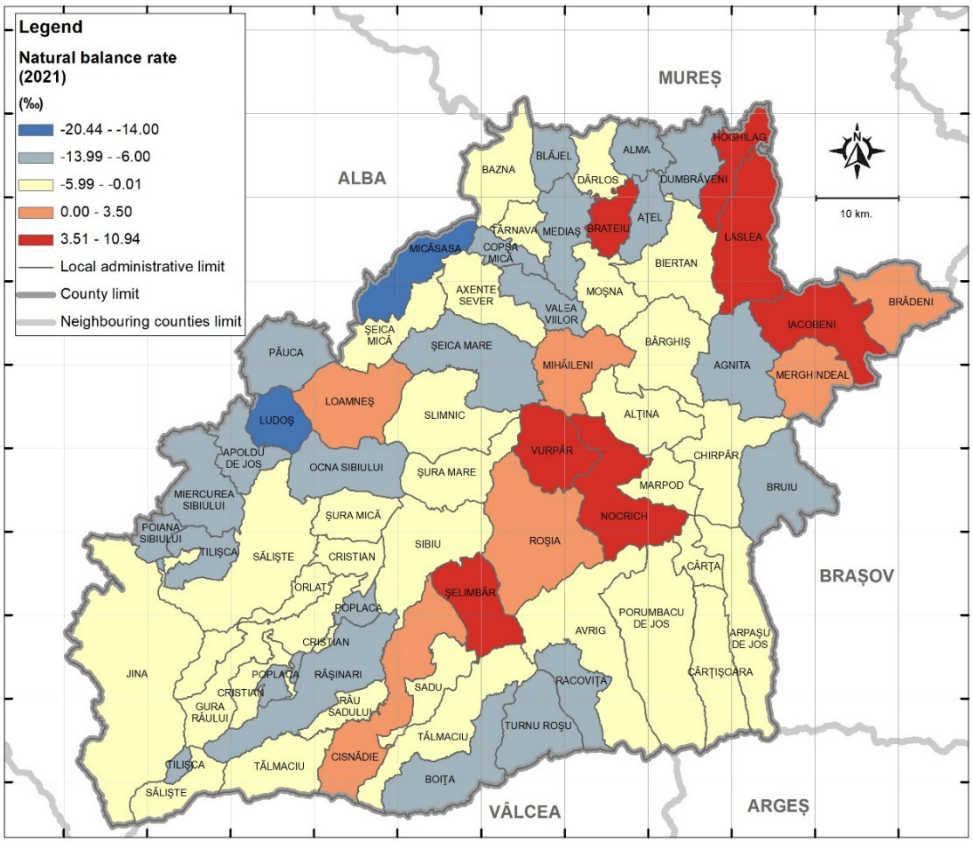

Fig. 6. The natural balance rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

In 2021, even during the pandemic, there are some areas where the natural balance rate maintained positive values. It happened in some communes that constantly have high birth rates and low mortality rates, such as Șelimbăr (10.94‰ – the highest value in the county), near Sibiu, Brateiu, near the other important city, Mediaș, as well as in some communes of Hârtibaciu Plateau (Vurpăr, Iacobeni, Nocrich, Merghindeal, Roșia, Mihăileni, Brădeni) or the eastern part of Târnava Mare Valley (Laslea, Hoghilag), which account for a higher weight of Roma population. The only town that had a positive natural balance rate was Cisnădie (1.14‰), which, very much like Șelimbăr, experienced a recent revitalization and rejuvenation due to suburbanization, mainly because of the emigration of young people from the city of Sibiu.

However, most local government units of Sibiu County registered negative values of the natural balance rate in 2021, with the lowest values in the western part of the county, in Ludoș (-20.44‰ – the lowest value in the county) and in other communes in Secașe Plateau, where there is a growing and visible process of demographic ageing, resulting in a high mortality rate and a low birth rate. Low values were also recorded in communes of the Târnava Mare Corridor and the surrounding hills (Micăsasa, Alma), Secașe Plateau (Păuca, Apoldu de Jos), in Bruiu, and in some communes of Mărginimea Sibiului (Poplaca, Poiana Sibiului, Boița). Very low values of the natural balance rate were also recorded in some urban areas, for instance in the city of Mediaș (-10.04‰) or in the towns of Agnita, Ocna Sibiului, Copșa Mică, Dumbrăveni, and Miercurea Sibiului. A very low value was also registered in the city of Sibiu (-5.45‰).

3.4. The immigration rate

The immigration rate was very high at the beginning of the 1990s (more than 15‰ in 1992), due to the freedom of movement that was allowed after the fall of the communist regime in December 1989. However, this had only a local impact, because the migrants were in fact those who moved officially from the countryside to the urban areas, while they were already unofficially in the urban areas for some time. During the 1990s, the immigration rate declined and reached the lowest value in 1998 (8.75‰). The values of the immigration rate increased significantly after 2002, reaching 19.91‰ in 2010 and 21.14‰ (the highest value) in 2019, in the last year before the pandemic (fig. 7).

Despite an apparently constant increase of the immigration rate, there were also years when a decline was registered. During the pandemic, the immigration rate also declined below 20‰, to 19.13‰ in 2021, the last year when data was available. Nevertheless, especially after 2002, the immigration rate had an important impact on the demography of Sibiu County, even higher than that of the birth rate, because the immigration rate had constantly higher values than the birth rate. This was mainly due to the fact that Sibiu County has been an attractive area for people in Romania generally, because of the above-average living standards, rendering a positive perception of the county.

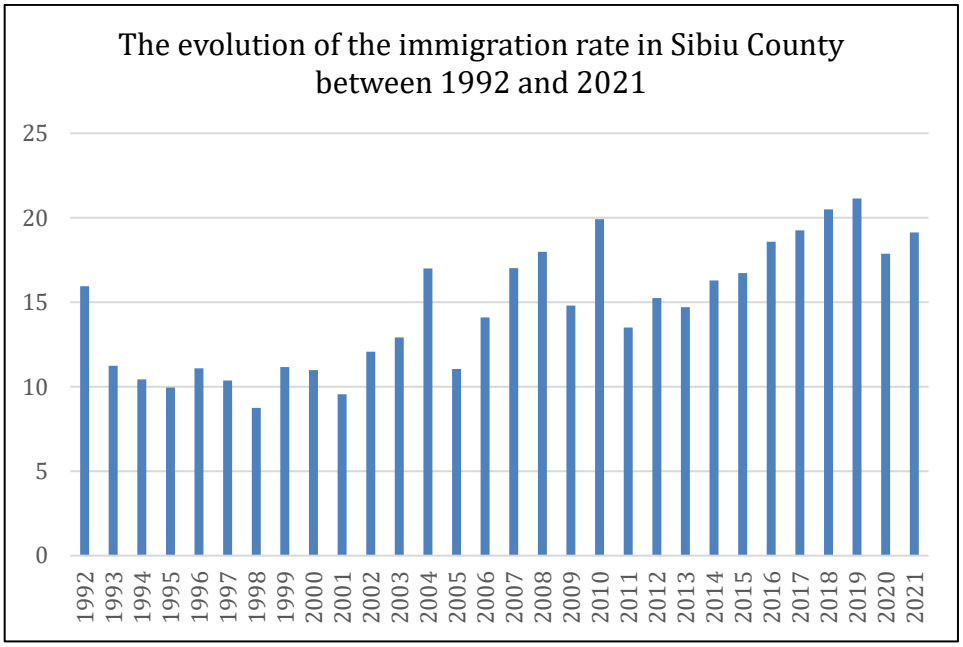

Fig. 7. The evolution of the immigration rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Within the county, in 2021 the highest values of the immigration rate were registered in Şelimbăr (a huge value, 88.98‰), followed by Marpod (51.04‰) and the town of Cisnădie (50.46‰). Şelimbăr and Cisnădie have had registered very high values of the immigration rate for the last three decades, as they are the demographic beneficiaries of the suburbanization process, by means of which a part of the population in Sibiu City moved to the suburbs. The same process explains the high values in other communes near Sibiu, such as Şura Mare, Şura Mică or Cristian. Values above average were registered in Secaşe Plateau (Ludoş, Apoldu de Jos), Mărginimea Sibiului (Sălişte town, Poiana Sibiului, Sadu), Făgăraş Basin (Cârţişoara, Porumbacu de Jos), Hârtibaciu Plateau (Roşia, Bârghiş, Brădeni, Alţîna). It is interesting to note that most urban centres, including the two cities, Sibiu and Mediaş, had immigration rates below the county average in 2021. This implies that migration paths were redirected towards the suburbs, the rural areas or the small towns, such as Cisnădie, which is also a suburban town (fig. 8).

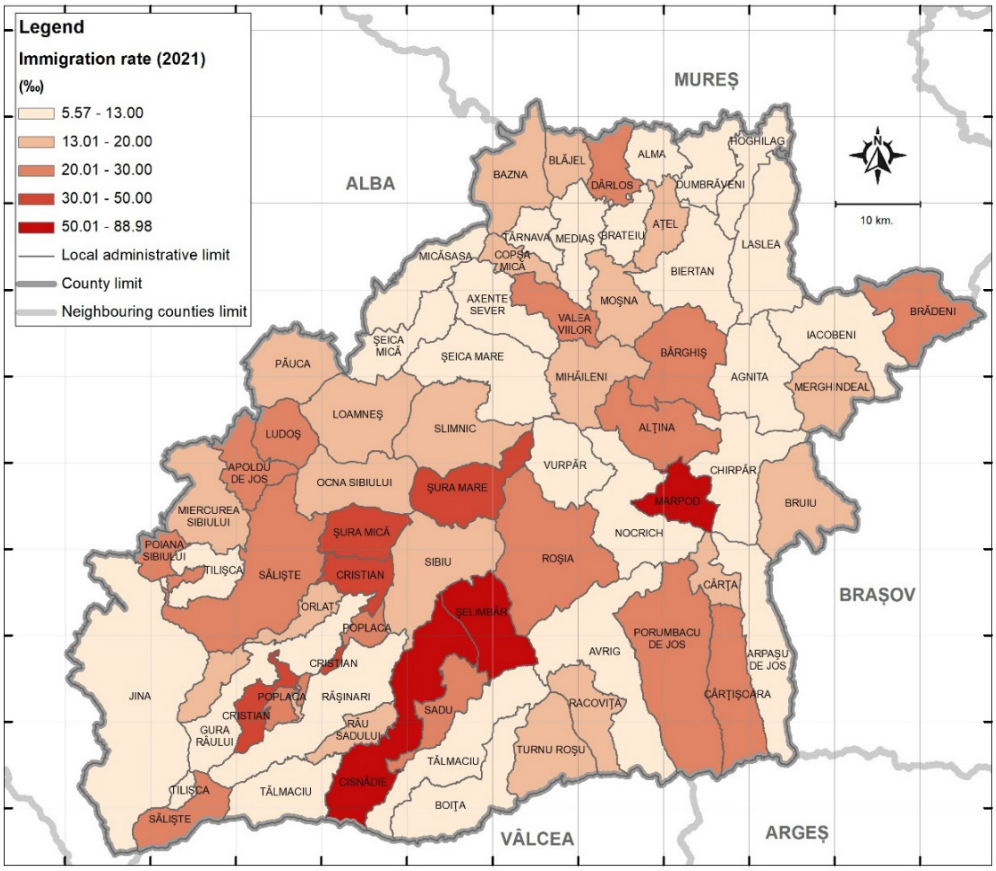

Fig. 8. The immigration rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

The lowest values of the immigration rate were registered in the less attractive communes of Mărginimea Sibiului, such as Tilișca (5.57‰ – the lowest value in the county, Jina), along Târnava Mare Corridor and in the surrounding hills (Micăsasa, Alma, Mediaș City, Biertan, the town of Dumbrăveni), in some communes of Hârtibaciu Plateau that are further away from the city of Sibiu (Iacobeni, Chirpăr).

3.5. The emigration rate

Just like in the case of immigration, the emigration rate was very high in Sibiu County at the beginning of the 1990s, a direct consequence of the long-awaited freedom of movement after the fall of the communist regime in December 1989. Therefore, the highest emigration rate (21.87‰) was registered in 1992, the first year when data was available. However, the values of the emigration rate soon dropped to 10-12‰ throughout the rest of the 1990s and reached a minimum value of 9.71‰ in 2001. After 2002, the values of the emigration rate increase steadily, at the same time with the immigration rate, which means that most of the migration took place within Sibiu County, as people moved from urban areas to rural areas, for instance. The process of suburbanization became more important, and the emigration rates increased to more than 17‰ in 2010. After a short decline between 2011 and 2015, the emigration rate reached again 17‰ in 2016 and maintained high values in the following years, with a maximum of 17.76‰ in 2018. After a short decrease in the first year of pandemic (2020), the emigration rate registered a similarly high value in 2021, 17.42‰ (fig. 9).

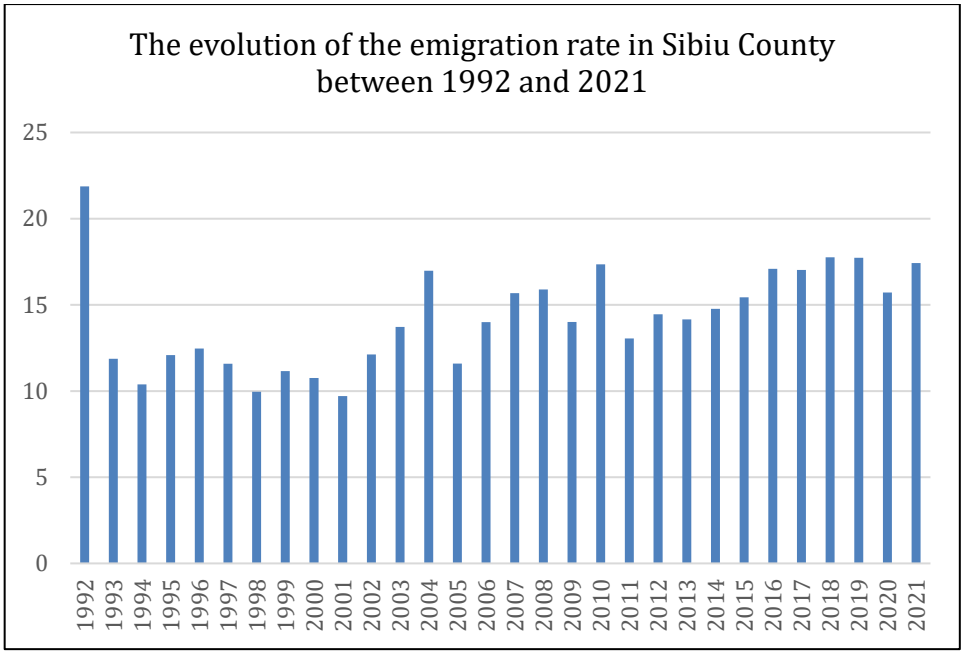

Fig. 9. The evolution of the emigration rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

In 2021, the highest emigration rates were registered in rural areas along Târnava Mare Corridor and the surrounding hills (Șeica Mare 28.41‰ – the highest value in the county, Micăsasa, Blăjel, Bazna), near the city of Sibiu (for instance in Șelimbăr, due to the remigration from the suburb to the core city), in Mărginimea Sibiului (Poiana Sibiului, Râu Sadului, Poplaca, Orlat), Hârtibaciu Plateau (Bârghiș, Mihăileni, Marpod), Secașe Plateau (Ludoș, the town of Ocna Sibiului). A very high value was also recorded in the city of Sibiu, 19.02‰, which continued to provide migrants to the nearby suburbs during the pandemic (fig. 10).

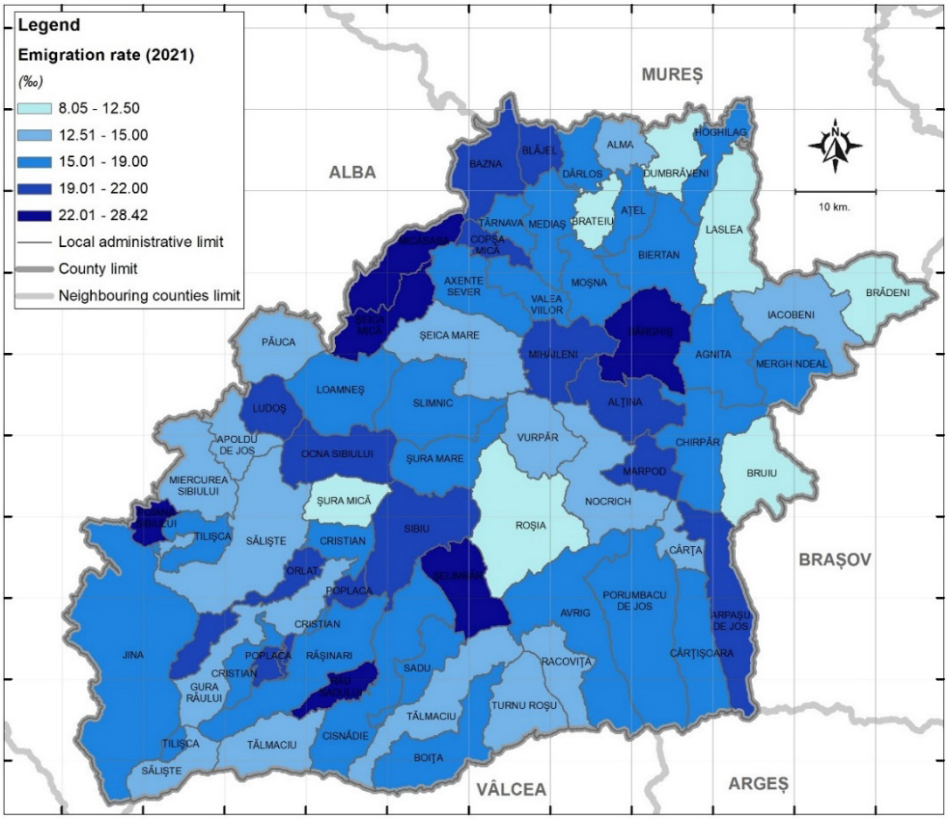

Fig. 10. The emigration rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

The lowest values of the emigration were recorded in 2021 in some communes in the eastern and southern parts of Hârtibaciu Plateau (Brădeni 8.05‰ – the lowest value in the county, Bruiu, Roșia, Iacobeni), in the eastern

part of Târnava Mare Corridor and its surrounding hills (Laslea, Brateiu, the town of Dumbrăveni) or in Șura Mică commune near Sibiu. Most towns had also low values of the emigration rate, usually below the county average.

3.6. The net migration rate

The net migration contributed significantly to the population growth in Sibiu County during the last three decades, even more than the natural balance rate. The net migration rate evolved in an almost opposite manner compared to the natural balance rate, so they have compensated each other, resulting in total balance rates close to zero for many years. The net migration rate had negative values at the beginning of the 1990s, when many people fled from Romania and from Sibiu County to other countries, especially Germany in the specific case of Sibiu County, where the former German (Saxon) population outmigrated in large numbers. As a result, the lowest value of the net migration rate (-5.92‰) was recorded in 1992, the first year when data was available. It is very likely that the values were even lower in 1990 and 1991. The generally harsh economic and social conditions of the 1990s determined a continuous high outmigration, which was reflected in the negative values of the net migration rate, with some exceptions (in 1994 or 1999) (fig. 11).

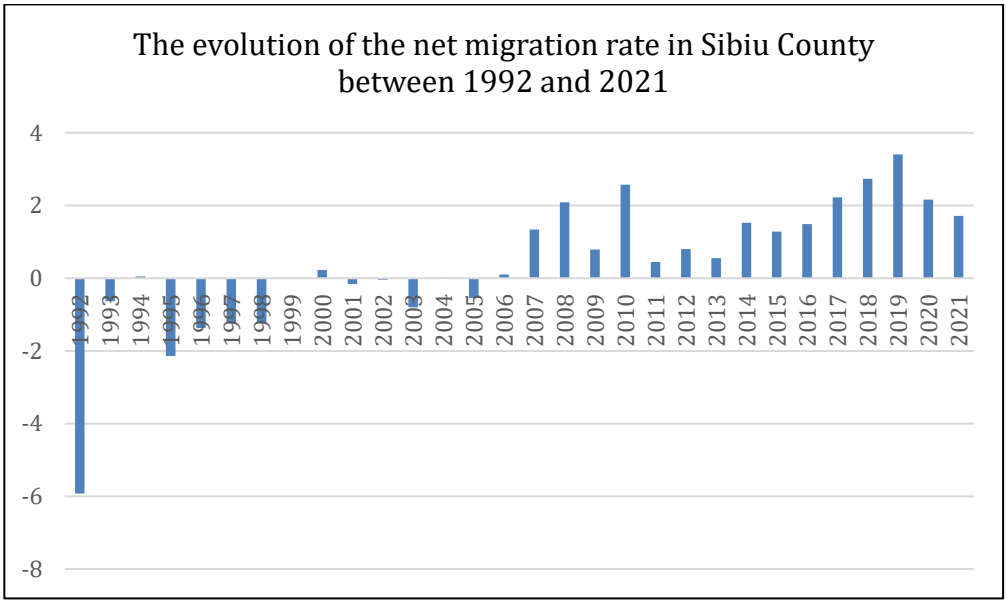

Fig. 11. The evolution of the net migration rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

Between 1999 and 2006, the values of the net migration rate fluctuated around zero, as the number of emigrants was similar to the number of immigrants in Sibiu County. It must be said that in the 2000s Sibiu County was already well-perceived in Romania as a developed region, which provided important economic and social opportunities for the population. This status was confirmed at a very high level when the city of Sibiu became a European Capital of Culture in 2007. Romania's accession to the European Union in that same year (2007) also played an important role, as Sibiu became an important economic and transportation hub, with many flights from Sibiu Airport to several destinations in Germany and other European countries. As a result, since 2007, the number of immigrants to Sibiu County has exceeded the number of emigrants every year, resulting in a positive net migration rate for Sibiu County, which has greatly impacted the population growth of the county up until now. The second highest value of the net migration rate was recorded in 2010 (2.57‰), while the highest value was registered in 2019 (3.41‰), right before the pandemic. During the pandemic, the values of the net migration rate declined slightly, but remained positive (1.71‰).

The positive values of the net migration rate in Sibiu County reflect the attractiveness of the county at national level, as it continues to attract people from all over the country and even from abroad. The positive values of the net migration rate compensate (partially or totally) the negative values of the natural balance rate.

It is interesting to note that in 2021 the local administrative units that had high values of the net migration rate are the same with those that had high values of the natural balance rate. This highlights the fact that most migrants are young people, who also have a contribution in terms of the natural balance rate, as they are in most cases families with kids. Therefore, the highest value of the net migration rate was registered in 2021 in Șelimbăr (63.85‰), followed by the town of Cisnădie (32.24‰), both located on the outskirts of the city of Sibiu and the favorite destination of young people moving out of Sibiu City or people who cannot afford a house or a flat in Sibiu and prefer the existing cheaper options in the suburbs, at short distance from the city. The same logic is behind the high values of the net migration rate in other communes around Sibiu, like Șura Mare, Șura Mică or Cristian. High values of the net migration rate were also registered in some communes in Hârtibaciu Plateau (Marpod, Brădeni, Roșia, Bruiu), in Secașe Plateau (Apoldu de Jos, Ludoș), Făgăraș Basin (Cârțișoara, Turnu Roșu, Porumbacu de Jos), or Mărginimea Sibiului (the town of Sălișteș, Sadu) (fig. 12).

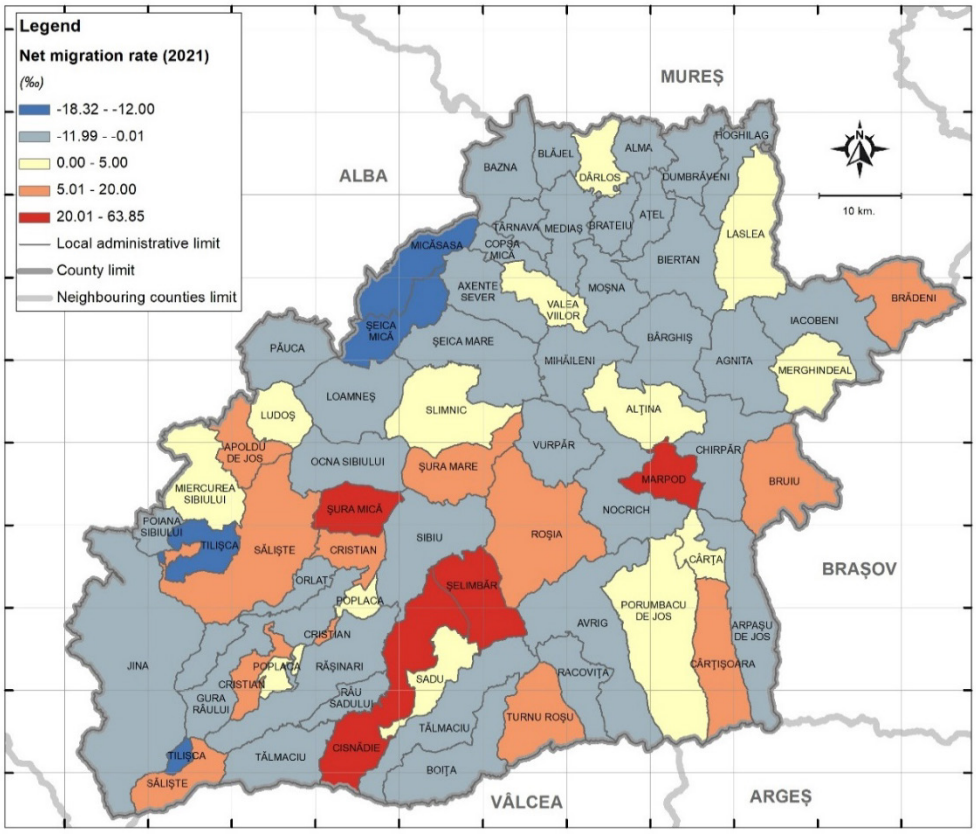

Fig. 12. The net migration rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

On the other hand, negative values of the net migration rate characterize large areas of Sibiu County, with the lowest values in the north-western part, at Micăsasa (-18.32‰ – the lowest value in the county), Şeica Mică, Blăjel, Bazna and other communes along Târnava Mare Corridor and in the surrounding hills, as well as in the western part of Mărginimea Sibiului (Tilişca, Râu Sadului, Jina), the eastern part of Făgăraş Basin (Arpaşu de Jos). Most of the urban centres, including the cities of Sibiu and Mediaş, had negative values of the net migration rate in 2021, as well as before, due to the process of suburbanization.

3.7. The total balance rate

The total balance rate results from the sum of the natural balance rate and the net migration rate in a given territory, such as Sibiu County in this case.

The assessment of the evolution of the total balance rate in the last 30 years (1992-2021) in Sibiu County indicates important fluctuations, from generally negative values in the first part of the period (1992-2005) to generally positive values in the second part of the period (2006-2019), followed by a sharp decline during the pandemic (2020-2021) (fig. 13).

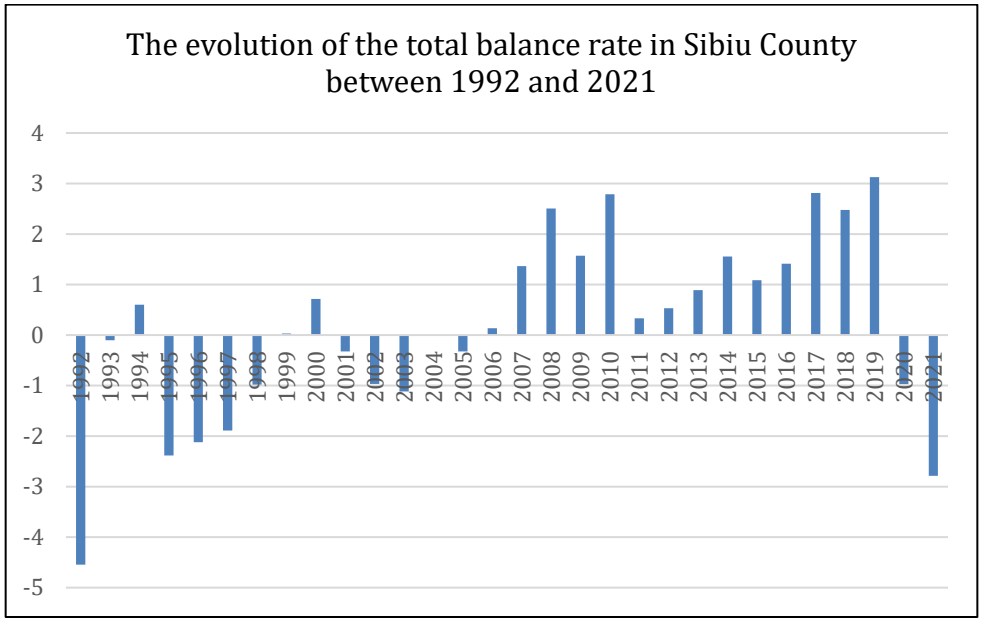

Fig. 13. The evolution of the total balance rate in Sibiu County between 1992 and 2021.
Data source: INS (2024)

The sharp decline of the natural balance rate during the 1990s and the negative net migration rate of the same period resulted in negative values of the total balance rate, which recorded its lowest values, -4.55‰, in 1992, the first year for which there is data available. The values of the total balance rate were mostly negative throughout the 1990s and the beginning of the 2000s, with some exceptions (in 1994, 1999 and 2000, when values were slightly above zero). Between 2006 and 2019, the total balance rate was constantly positive, mainly because of the positive values of the net migration rate, while the natural balance rate had values close to zero. There were two periods with higher values of the total balance rate: one between 2007 and 2010, with a high value of 2.79‰ in 2010, and another one between 2017 and 2019, when the highest value of the entire period was recorded, 3.13‰ in 2019. During the pandemic,

because of the sudden increase of the mortality rate, which affected the values of the natural balance rate, the total balance rate also dropped to negative values, reaching as low as -2.79‰ in 2021.

It is noticeable that the total balance rate has had positive values for 14 years in a row (2006-2019), which should have been reflected in a population increase at the county level. However, according to the census data, the population of Sibiu County continues to decline. This apparently paradoxical situation is due to the high number of people who are accounted by the National Institute of Statistics, but are unaccounted at the censuses, because they live mostly abroad, while they still maintain their official residence in Sibiu County.

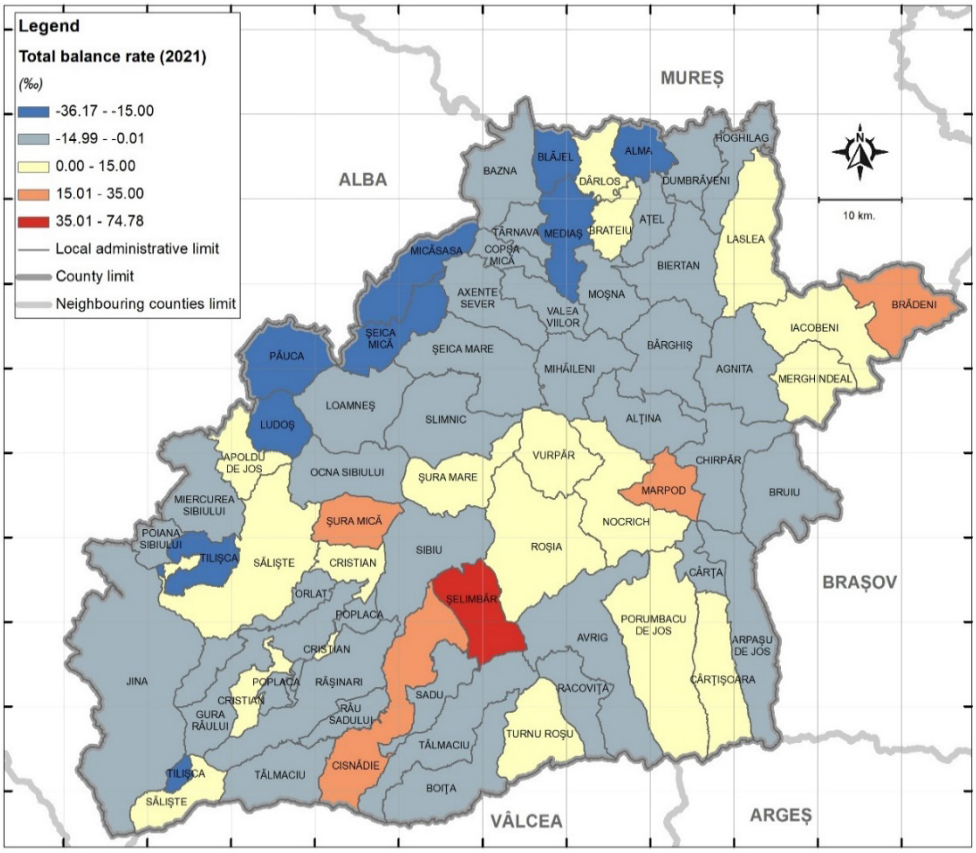

Fig. 14. The total balance rate at local administrative level in Sibiu County in 2021.
Data source: INS (2024)

In 2021, the highest values of the total balance rate were recorded in the suburbs of Sibiu City, mainly in Șelimbăr (74.78‰), the town of Cisnădie (33.38‰) and Șura Mică (30.14‰). These administrative units benefit from both a positive natural balance rate and a high net migration rate in every year. There are other communes in a similar situation, such as many in Hârtibaciu Plateau (Marpod, Brădeni, Roșia, Nocrich, Vurpăr), in Sibiu Basin and around Sibiu City (Șura Mare, Cristian), along Târnava Mare Corridor (Laslea, Brateiu), or in Făgăraș Basin (Cârțișoara, Porumbacu de Jos). Among the urban centres, a positive value of the total balance rate was recorded in 2021 in the town of Sălișteа.

However, most of the local administrative units registered negative values of the total balance rate in 2021, as well as in previous years. The lowest values were recorded in the western part of the county, with the lowest value by far in Micăsasa (-36.17‰). Other areas with low values of the total balance rate are Mărginimea Sibiului (Tilișca, Boița, Râu Sadului), Târnava Mare Corridor and the surrounding hills (Șeica Mică, Blăjel, Alma, the city of Mediaș, the town of Copșa Mică), Secașe Plateau (Ludoș, Păuca). Most urban centres had negative values of the total balance rate in 2021. In Sibiu City, the total balance rate was -8.78‰ in 2021, a rather low value, which was also caused by the effects of the pandemic.

4. Discussion

Taking into account the last 10 years, the demographic situation of Sibiu County may be looked at differently from the point of view of the censuses and from the point of view of the data provided by the National Institute of Statistics. Between the two sets of data there is a huge difference, not only in terms of total population numbers (which are completely different), but also from the point of view of the population dynamics. For instance, according to the censuses, the population of Sibiu County declined from 397322 inhabitants in 2011 to 388325 inhabitants in 2021. The decline is not as sharp as it was between 1992 and 2011. According to the National Institute of Statistics, the population that officially resides in Sibiu County increased slightly from 461629 inhabitants on the 1st of January 2011 to 467856 inhabitants to the 1st of January 2022 (the closest date to the 2021 census, which took place on the 1st of December 2021). As mentioned before, the difference of about 80,000 inhabitants between the two sets of data is due to the large numbers of people who live permanently or almost permanently abroad, but maintain their official residence in Sibiu County. The same situation is recorded in all Romanian counties.

Taking into consideration the census data, and assessing the population dynamics between 2011 and 2021, it comes out that the steepest decline was recorded in the case of the urban centres, including the cities of Sibiu and Mediaş, as well as many smaller towns (Dumbrăveni, Agnita, Copşa Mică). An important decrease in population numbers was also recorded in the western part of Sibiu County, especially in Secaşe Plateau (Păuca, Ludoş, Apoldu de Jos, Loamneş), in the North and North-West, along Târnava Mare Corridor and in the surrounding hills (Micăsasa, Bazna, Blăjel, Alma, Aţel, Biertan, Moşna, Axente Sever), where the population dropped by more than 8% in 2021 compared to 2011 (fig. 15).

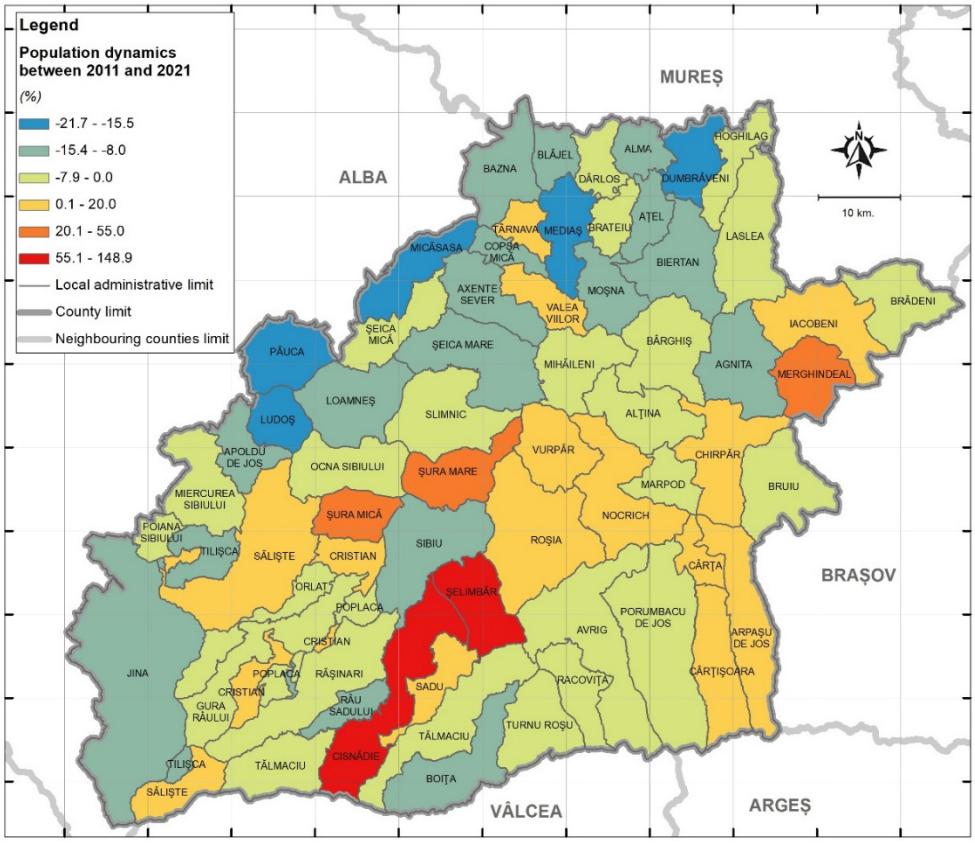

Fig. 15. The population dynamics at local administrative level in Sibiu County between 2011 and 2021.
Data source: population censuses of 2011 and 2021

On the other hand, there are many administrative units which registered an important demographic increase, even a spectacular one in the case of the Sibiu City suburbs such as Șelimbăr, which had an increase by 148.9%, meaning that the population more than doubled in 2021 (17492 inhabitants) compared to 2011 (7028 inhabitants). A significant increase by more than 8000 inhabitants (56%) was also recorded in the town of Cisnădie, also very close to the city of Sibiu. The same positive trend was registered in other communes near Sibiu, such as Șura Mare, Șura Mică, Roșia, Cristian, Sadu. One may state that the population decline in the city of Sibiu, of about 13000 inhabitants between the two censuses of 2011 and 2021, was compensated by a sharp increase of the population in its suburbs, so that the population of Sibiu Metropolitan Area recorded an increase on the whole.

The situation is very much the same in the case of the suburban areas of the city of Mediaș and the town of Copșa Mică, where the communes of Târnava and Valea Viilor recorded an overall demographic increase between 2011 and 2021. However, this was not enough to compensate for the demographic loss in the two urban centres. Actually, the area of Târnava Mare Corridor and the surrounding hills in the northern part of Sibiu County suffered the biggest demographic decline in Sibiu County between 2011 and 2021, and had an impact on the overall demographic decline in the county as a whole.

Positive demographic trends were recorded between 2011 and 2021 in some communes of Hârtibaciu Plateau, characterised by high birth rates (Merghindeal, Iacobeni, Vurpăr, Nocrich), as well as in Făgăraș Basin (Arpașu de Jos, Cârța, Cârțișoara).

5. Conclusions

Sibiu County has been characterised by a better demographic situation than the rest of Romania in the past three decades. The birth rate in Sibiu County has been around 10‰ for many years, above the national and regional average. The mortality rate had similar values, around 10‰ for many years, resulting in a natural balance rate around zero. However, during the pandemic (2020-2021), the birth rate dropped and the mortality rate increased, which determined a negative natural balance rate at the level of Sibiu County, as low as -4.5‰ in 2021. The net migration rate, on the other hand, has been positive in every year since 2006, reaching the highest value of 3.41‰ in 2019, right before the pandemic. The positive net migration rate determined also positive values of the total balance rate in Sibiu County between 2006 and 2019, reaching the highest value of 3.13‰ in 2019. However, the steep decline of the

natural balance rate during the pandemic also affected the total balance rate, which became negative in both 2020 and 2021. Nevertheless, the total balance rate is expected to reverse back to positive values after the end of the pandemic.

Within Sibiu County, the major recent demographic process is the suburbanization. Areas around the city of Sibiu, especially the commune of Şelimbăr and the town of Cisnădie, have experienced a huge demographic growth, due to migration, but also due to the natural balance rate, which increased suddenly because most of the migrants are young families. Similar situations, although at a lower scale, were recorded in other communes around the city of Sibiu, such as Şura Mare, Şura Mică and Cristian, as well as in communes in Hârtibaciu Plateau (Roşia, Nocrich, Vurpăr, Merghindeal, Chirpăr, Iacobeni), characterised by high birth rates. In contrast, many communes in the western and north-western parts of Sibiu County, such as those in Secaşe Plateau (Ludoş, Păuca, Loamneş, Apoldu de Jos), Târnava Mare Corridor and the surrounding hills (Micăsasa, Şeica Mare, Axente Sever, Blăjel, Bazna, Alma, Aţel) and even in Mărginimea Sibiului (Tilişca, Râu Sadului, Jina) experienced a population decline due to outmigration and a negative natural balance rate and a negative net migration rate.

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THE MODERN URBANIZATION IN ROMANIA BETWEEN THE 18TH CENTURY AND THE POST-SOCIALIST PERIOD

Nóra Csilla VERESS[1]

ABSTRACT. – The Modern Urbanization in Romania between the 18th Century and the Post-Socialist Period. The history of modern urbanization in Romania has always been dominated by a strong "pro-urban sentiment", where towns and cities were considered centers of development, wealth and well-being. This article presents the evolution and characteristics of Romanian urbanization from the beginning of the 18th century to the end of the socialist period, highlighting the historical context, regional variations, and milestones of policy-driven urban development with a European insight.

Keywords: *modern urbanization, Romania, socialist period, planned urbanization, pro-urban sentiment, new towns.*

1. Introduction

According to Benedek (2006), urban development in Romania was influenced by three types of factors: historical background, political situation, and economy. Benedek starts from the idea that each society produces and reproduces its spaces, so a specific spatial structure corresponds to each society (Benedek 2006b, p. 51). This article summarizes the history of the modern urbanization in Romania from the 18th century to the fall of the communist regime in 1989. These antecedents were very important in shaping the post-socialist processes in Romanian urbanization, because "we cannot turn our backs on the legacy of the past if we want to understand the present" (Harloe 1996, p. 5). I will argue that a "pro-urban sentiment" is rooted in Romania's (as well as the whole Eastern Europe's) historical development trajectory (Kulcsár and Brown 2011, p. 482). Before the 20th century, Eastern European urbanization followed

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a different path from that of Western Europe. In contrast to the western part of the continent, the development of Eastern cities was connected to administrative functions, so urban status was more important for political than for economic reasons. An important change took place after 1945, when the pro-urban sentiment became motivated by its perceived connection to economic prosperity rather than by the political liberties which had previously been its main advantage. The half-century rule of a policy regime that favoured larger and denser settlements over their rural counterparts resulted in a "strong pro-urban legacy", according to that urban areas are superior places to live and work (Kulcsár and Brown 2011, p. 482-483).

Modern urbanization in Romania encompasses the long period between the Middle Ages and the fall of the socialist system in 1989. Historians refer to this as the third phase of the history of cities and urbanization, following the Roman period and the medieval era. The first two stages have been extensively studied by researchers; therefore, this thesis will provide a brief overview of the third phase, since the evolution and processes of this era (especially those of the socialist period) played a decisive role in shaping the heritage for contemporary times.

The phase of modern urbanization can be divided into three stages: (1) until the mid-19th century, (2) from the second half of the 19th century to the Second World War, and (3) the socialist period between 1948 and 1989, respectively. I preferred to divide the "long 19th century" (as many historians do) into two parts because the economic and social processes that dominated this period began earlier and ended later than the century itself. Thus, the first part extends from the 1780s to the 1830s, while the second starts in the 1860s and lasts until the First World War (Meszaros et al. 2010).

In this article, I analyze the evolution of the urbanization rate in the referenced period, as well as the causes behind these changes. Emphasis will be placed on the declaration of new towns, the growth of the number of urban settlements, and the withdrawal of the urban status, respectively. However, I will not address changes in the ethnic and religious structure of the population, as these issues are less relevant for the present research.

2. Urbanization until the mid-19th century and its European context

Modern urbanization began in Western Europe in the 18th century. The beginnings of the rapid urban growth were connected to the Industrial Revolution[2],

[2] The phrase "industrial revolution" became widespread (and adapted by numerous economic history trends) thanks to Arnold Toynbee, who published his book in 1884 on the topic (Meszaros et al., 2010).

which in turn, was preceded by an "agricultural revolution" that made a part of the agricultural workers unnecessary (Enyedi 2012). The condition of the existence of a numerous urban population is the increase of the labor productivity in agriculture so that agriculture can exceed the subsistence level (Meaşnicov 1977, p. 33). This population represented, on one hand, a consumer market for the (mostly textile) industry, and on the other hand, a multitude of potential workers (Meszaros et al. 2010).

Migration from villages to towns became the principal source of the urban boom. Industrialization-launched population growth not only increased the traditional urban network but created new towns as well (Enyedi 2012). It is important to note that this initial town-explosion did not took place in a predominantly rural area. Western Europe already had a developed town network at the beginning of industrialization, with commercial capital present in many cities. Town-explosion urbanized the entire settlement network: the proportion of the urban population has reached 70-75% by the mid-20th century. The sudden urban growth following the Industrial Revolution transformed the until then barely changing settlement network, the inner structure and functioning of the cities, the relationship between towns and villages, but also the content and the spread of the urban civilization within the settlement network (Enyedi, 2012, p. 63).

This kind of urban growth had nowhere else incorporated into such a mature pre-industrial urban network like in Western Europe. The phase of urban explosion reached Central and Eastern Europe with only a slight delay, but despite the small time lag, it was marked by considerable differences. The sources of industrialization and urban growth were weak. The complete transformation of the urban network did not happen: a significant part of the towns remained in their pre-industrial state, and modern cities and traditional market towns coexisted side by side. Meanwhile, the rural population remained widespread, backward, and in majority for a long time (Enyedi, 2012).

In the states that existed on the territory of present-day Romania - Wallachia, Moldavia and Transylvania - there were diverse and different methods for population registration, such as conscripts, land records, and others (Mureşan, 1999, p. 42). These offered only approximate data on the population. In the first half of the 18th century, Transylvania had a small number of urban settlements, namely 23, which represented an almost insignificant share within the total population (177,138 inhabitants in contrast with 835,460 inhabitants). The towns were small in size, except for Braşov with over 20,000 inhabitants, and Cluj and Sibiu with more than 15,000 inhabitants. The majority of the urban settlements had less than 10,000 or even less than 5,000 inhabitants (Deva, Orăştie, Haţeg, Dumbrăveni, Făgăraş, Miercurea-Ciuc, Odorheiu Secuiesc and Sfântu Gheorghe) (Pop and Bodocan, 2000, p. 201).

Around 1831, the degree of urbanization reached 6.5% in Wallachia (Țara Românească) and Moldavia, with the largest towns being Bucharest with 65,000 inhabitants and Iași with approximately 60,000 inhabitants (Meaşnicov, 1977). Widespread ruralism had an important role in the urbanization process. This process unfolded differently across Europe: while in Western Europe the evolution of towns began to intertwine more and more with industry and industrialization, in East the primary role in urbanization was played by trade and commerce (Enyedi, 2012). The delayed process of town formation during the capitalist period in Romania, where the fundamental economic function was trade, had important consequences for urbanization. This delay affected both the location and structure of cities and the composition of the town network (Cucu 1968, pp. 16-17).

In Western Europe, urban places were an integral part of the development of industrial capitalism. As centers of production, trade, markets and other economic activities, they gained administrative functions in a rather organic way. In contrast, in Eastern Europe, the development of cities was strongly connected to administrative functions and the extraction of surplus from rural hinterlands. These administrative and extractive functions created opportunities, associating urban status with further development (Schöpflin, 1993). According to Kulcsár and Brown (2011), the urban status was more important for political than for economic ones, due to the strong agrarian character of these countries and their land-based political elite. Urban status conferred political autonomy, electoral representation and certain civic liberties, but not necessarily economic development advantages (Kulcsár and Brown, 2011, p. 483). However, I believe that urban status also brought economic benefits, but these were a consequence of the title.

3. From the second half of the 19th century to the Second World War

In this phase, the Industrial Revolution began to gain ground in Central and Eastern Europe as well. In Romania, the beginnings of industrialization date from the second half of the 19th century, while the urbanization – as a result phenomenon – also started to emerge and to assert itself also in this period (Meaşnicov et all., 1977).

The actual territorial-administrative framework of the urbanization has been created after the Second World War. Until 1918, urbanization took place under different political powers and different administrative units. Thereby, the central and Western parts of the modern Romania - Transylvania, Maramureș, Crișana, and Banat - were parts of the Habsburg Empire (1711-1867), and of

the Austro-Hungarian Empire (1867-1918) respectively, and experienced a development path based on an early industrialization that began in the 18th century. In contrast, the Southern and Eastern parts of the country were influenced by the power center of Constantinople (Istanbul) where the first proto-industrial regions emerged in the 19th century (Benedek and Kurkó, 2010). The period of 1850-1918 was also marked by a succession of political regimes: neo-absolutism (1849-1860), liberalism (1860-1867) and Austro-Hungarian dualism (1867-1918) with continuities and discontinuities in economic policies, which in turn influenced the urban space and the process of urbanization (Lumperdean, 2011; Pop and Bodocan, 2000).

In Transylvania, in 1850, the number of towns was still 23. Most of them were located in the Mureș River catchment (Deva, Hunedoara, Simeria, Călan, Sebeș, Alba Iulia, Aiud, Turda, Târgu Mureș, Ocna Sibiului, Mediaș, Sighișoara and Odorheiu Secuiesc). Another six were situated in the Olt River catchment (Sibiu, Făgăraș, Brașov, Sfântu Gheorghe, Târgu Secuiesc and Miercurea-Ciuc), while four of them in the Someș River catchment (Cluj, Gherla, Dej, and Bistrița) (Pop and Bodocan, 2000, p. 201).

In the following half-century, no significant changes were recorded in Transylvania from an urbanization point of view. Only three new towns emerged: Abrud, Aiud, and Reghin, with a total population of 32,485 inhabitants (Pop and Bodocan, 2000, p. 205). By 1990, the total urban population numbered 356,252 inhabitants, i.e. 14,6% of the Transylvanian population. Only four towns had a population over 20,000 inhabitants: Cluj (50,908), Brașov (36,646), Sibiu (33,748), and Târgu Mureș (20,299). Eight urban settlements had a population between 10,000 and 20,000 inhabitants (Alba Iulia, Bistrița, Aiud, Dej, Sebeș, Turda, Sighișoara and Reghin), while the rest were under 10,000 inhabitants (Pop and Bodocan, 2000, p. 205).

The period from 1900 to 1930 was marked by the 1st World War and the Union of Transylvania with Romania. During this time, East-Central Europe remained largely agrarian. Urbanization progressed slowly in the 1920s and stagnated in the 1930s. Industrial development was also in its early stages and depended heavily on foreign capital, which was concentrated in capitals and major agglomerations (Andrusz 1996, p. 35).

In Transylvania, the number of towns increased from 26 to 31. Six rural settlements gained urban status (Năsăud, Huedin, Blaj, Târnăveni, Gheorgheni, and Petroșani), while Ocna Sibiului lost its urban status, and regained it later during the socialist period (Pop and Bodocan, 2000, p. 210). Gheorgheni and Vatra Dornei were declared towns in 1907, and Târnăveni in 1912, under the Austro-Hungarian Empire. In the same year, Slobozia was designated as an "urban commune" by a law enacted by King Carol I of Romania in Sinaia. Other

towns declared before World War I included Gura Humorului and Pucioasa (Săgeată 2002), while Mărăşeşti and Moineşti were granted urban commune[3] status later, in 1920 and 1921, respectively.

The number of towns in this period was low, as well as the share of the urban population. For example, before 1912, only seven towns existed in the Western Plain; these were Oradea, Timişoara, Lugoj, Satu Mare, Carei, Salonta, and Arad (Voiculescu, 2004).

The first modern, scientific, and objective general census of the population was conducted in 1930. According to this, the rural population constituted 78.6% of the total population (Mureşan, 1999, p. 45).

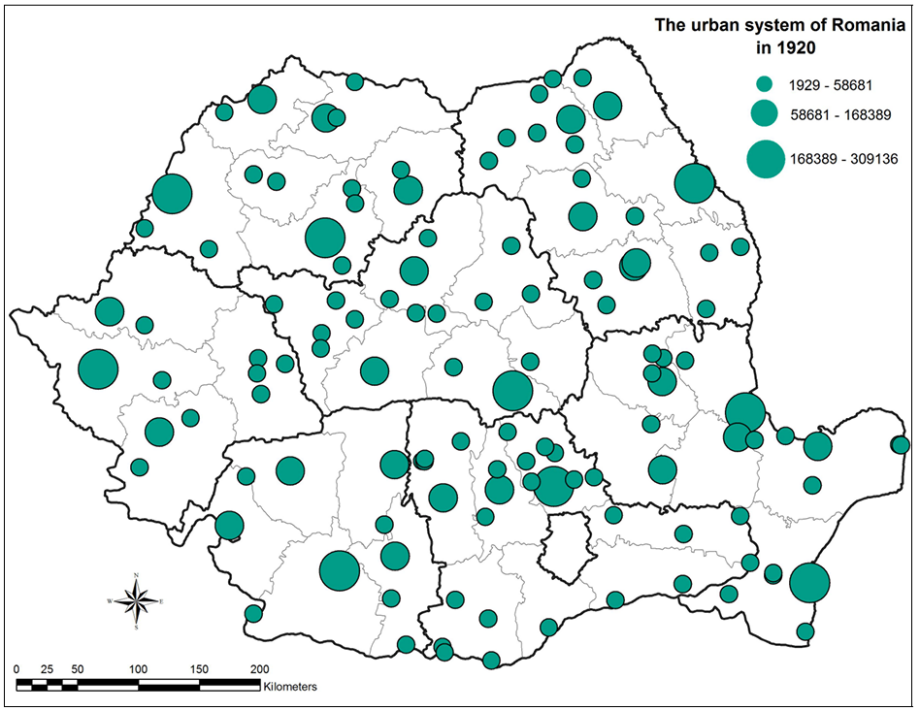

Fig. 1. The urban system of Romania in 1920
Note: the size of the circles represents the actual population of the towns
Source: own draft

[3] Before 1950, every settlement was a commune, either urban or rural (Varga, 1994). Rural communes were composed of one or more villages depending on their ability to sustain their own administration. Urban communes were further divided in two categories: towns, and suburban communes respectively. During the censuses of 1930, 1941 and 1948, data on suburban communes were subsumed to urban communes (Kardhordó, 1942, p. 142-143).

In Transylvania, by 1930, the urban population accounted for 20.2% of the total population. The increase of the urban population by 215,000 inhabitants over the past 30 years was a result of both the emergence of new towns and the natural population growth (Pop and Bodocan, 2000, p. 210). One town had a population above 100,000 inhabitants, this was Cluj; two urban centers had a population between 50,000 and 100,000 inhabitants - Braşov and Sibiu -, while one town had between 40,000 and 50,000 inhabitants (Târgu Mureş). Turda had 21,429 inhabitants, while the rest of the urban settlements had less than 20,000 inhabitants (Pop and Bodocan, 2000, p. 210). The most significant increases in population were recorded by the largest cities (Cluj 105%, Târgu Mureş 97%, Sibiu 64%, Braşov 62%) thanks to industrialization. Industrialization also contributed to the population growth in middle-sized towns. For example, Mediaş experienced an 84% increase, Turda 58%, Sfântu Gheorghe 46%, and both Dej and Deva 43% (Pop and Bodocan 2000, p. 201).

In the interwar period, significant changes took place in the settlement system of the country. The town network was expanded with 21 new settlements, as detailed in table 1 and illustrated in fig. 2.

Table 1. Settlements declared urban in the interwar period by the year of declaration

Town	County	Year of declaration	Town	County	Year of declaration
Adjud	VN	1920	Pașcani	IS	1931
Băile Govora	VL	1927	Petroșani	HD	1930
Băilești	DJ	1921	Predeal	BV	1935
Balș	OT	1921	Pucioasa	DJ	1938
Brad	HD	1927, 1941	Reșița	CS	1925
Buhuși	BC	1930	Săveni	BT	1930 (?)
Călimănești	VL	1927	Solca	SV	1926
Fetești	IL	1934 (?)	Ștefănești-Târg	BT	1930 (?)
Mărășești	VN	1920	Strehaia	MH	1921
Moinești	BC	1921	Techirghiol	CT	1928
Orșova	MH	1923	Lupeni	HD	1941

Source: Berekméri (2009), Săgeată (2002)

In most of the years between the two world wars, only one settlement gained urban status. The only exceptions were the year 1927, when three new towns were designated, and the years 1921 and 1930 with four new towns each.

However, granting urban status was not always a permanent decision. For instance, Brad became urban commune on 1st of April 1927, but was downgraded to rural commune on 1st of January 1930, in order to receive definitively its urban status at 1st of April 1941 (Pop and Bodocan, 2000, p. 212; official site of the local council of Brad).

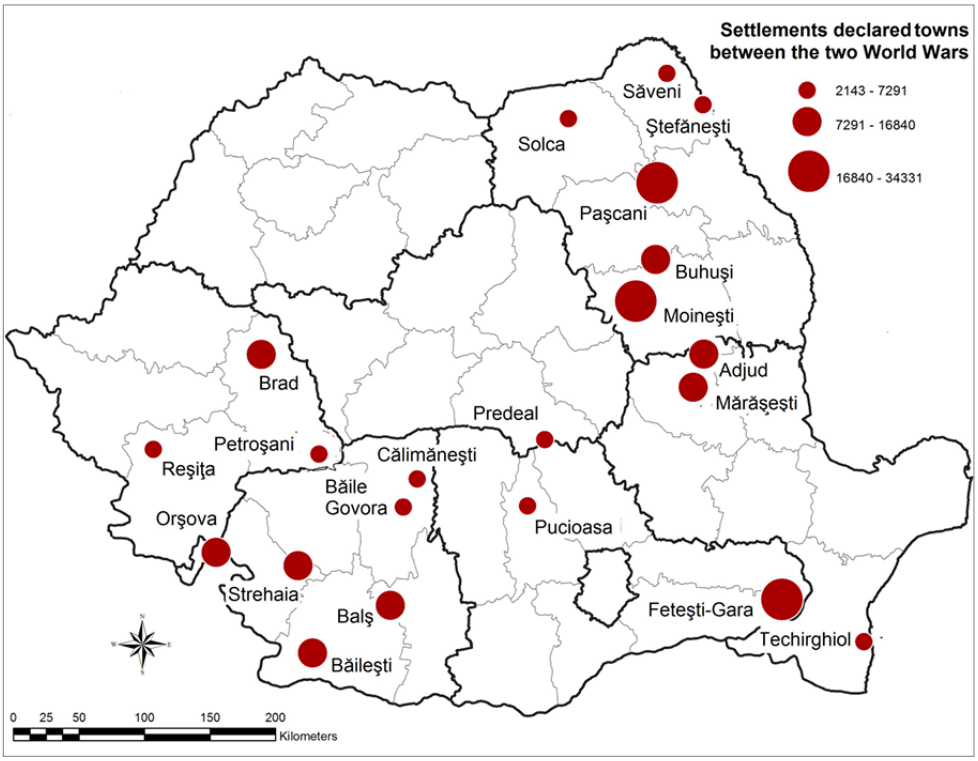

Fig. 2. New towns in the interwar period
Note: the size of the circles represents the actual population of the towns
Source: own draft

During this period, even the definitive withdrawal of the urban status was not uncommon. Certain settlements with urban status before the 1st World War were deprived by their rank before 1930: Chilia Veche, Cojocna, Mahmudia, and Ion Corvin (Berekméri, 2009).

4. The socialist period (1948-1989)

The socialist period is of particular interest in the modern urbanization of Romania. There is considerable debate in the scientific literature about whether a "socialist model" exists (Enyedi, 1996, p. 101), whether cities under socialism developed differently from those in the West (Szelenyi, 1996, p. 286), and whether a distinctively socialist city existed (Smith, 1996, p. 70). Without contributing to this debate, I share the opinion that "it is important to understand the socialist antecedents, as far as the process of post-socialist urban transition does not operate in a vacuum, but it is embedded in the socioeconomic relationships inherited from the past" (Kovács, 1999). This applies not only for the spatial structure, but also the mentalities regarding urbanization.

The half-century of socialism had several phases marked by different development concepts. However, two basic principles of the socialist urbanization were egalitarianism (equalization of living conditions within the settlement network and within individual settlements) and planned urbanization (Enyedi, 1996, p. 109-110). As urbanization was exclusively government-defined - from the development of existing cities through the declaration of new towns to the territorial relocation of the population and the centrally controlled distribution of the resources - spontaneous phenomena of urban development were pushed into the background (Kovács, 2002). This period was marked by state-driven and state-controlled procedures, while the dominant regional development concept was the superiority of the urban settlements over rural ones. This meant the further development of existing cities (especially large industrial centres), the reclassification of several rural settlements as urban ones, and attempts to abolish villages. In the socialist perception, urbanization was viewed not only as the development of the actual towns, but also as the transformation of rural areas into urban ones. For this purpose, the "liquidation" of the contrast between village and town was necessary (Almăşan-Radu, 1973). In other words, a characteristic feature of the socialist towns, as well as villages, was "the planned and rational development, designed to eliminate the excesses and contrasts that have deepened over times between the towns and the countryside" (Cucu, 1981). The approximation of these two living areas was, of course, ideologized: it was considered "the basic condition of the multilaterally developed socialist society" and aimed to "uplift the whole country to a high level of material and spiritual civilization" (Almăşan-Radu, 1973, p. 3).

Before 1948, Romania had a rather low degree of urbanization, and the urbanization level was characterized by a slow growth starting from 1912 (16.3%) to 1930 (21.4%), and until 1948 (23.4%) (Trebici and Hristache, 1986). The apparently high urbanization level in 1948 (at least compared to

1912) was due to the large share of the urban population in the capital, Bucharest (28%). Without the capital, the urban population rate shrank to 18%. Significant differences existed between counties: values varied between the almost inexistent minimum of 6.3% in Gorj (but similarly low values in Sălaj – 7.5% and Bistriţa-Năsăud – 8.4%) and the maximum of 35.2% in Brăila, 34.5% in Constanţa, and 32.7% in Cluj (Trebici and Hristache, 1986). In the following half-century, the natural but slow urbanization process was replaced by a politically coordinated, state-driven, and extremely rapid urban development. Due to these state-controlled procedures, the spontaneity of urban development receded into the background (Kovács, 2002).

As a result of the socialist urban policy, the most intensive and accelerated stage of urbanization in the country took place from 1945 to 1989. During this period, the proportion of the urban population rose from 23% to 54% (Benedek, 2006a, 2006b; Ianoş and Tălângă, 1994). However, socialist urbanization was not a linear process (Benedek, 2006a). At the same time, a specific spatial structure emerged, characterized by the low level of development of the urban lifestyle and the low social integration capacity of the large cities (Benedek, 2006a, 2006b).

In the first years following 1948, urbanization began to grow more rapidly: while the total population increased at an annual average of 1.1%, the urban population grew by 3.5% per year. The highest rates of urbanization were registered by the counties of Hunedoara, Gorj, Maramureş, Harghita, Covasna, Bacău, thanks to the urbanization efforts (Trebici and Hristache, 1986).

The year 1948 was also marked by the withdrawal of town status, especially from small towns located in Moldova (Fălciu, Mihăileni, Ştefăneşti-Târg, Vama, Răcari, Filipeşti-Târg, Ostrov, Pleniţa). The main reason was that these settlements were only commercial centers without industry (Ianoş and Tălângă, 1994). Ştefăneşti-Târg, in Botoşani County, was an urban commune that lost its urban status in 1948. It changed its name to Ştefăneşti in 1968 and regained town status during the last town-awarding process in 2004. Săveni also lost its urban status in 1948 but regained it later in 1968 (Berekméri, 2009).

The socialist period has been divided in various ways by several authors, depending on their perspective of study. Enyedi (1996), for example, analyzed the urban policy development of the socialist era across Eastern Central Europe. He outlined that in the 1950s an explicit urban policy did not yet exist; sectoral planning was dominant, while principles of socialist urbanization were applied sporadically. In the late 1950s and early 1960s, the first comprehensive regional and urban strategies were elaborated and implemented. These strategies were based on the principle of industrial decentralization, thus cities were regarded first of all as sites for industry, and their development prospects were designated according to this criterion.

Urban and industrial development were identical; the growth and decline in cities depended on their industrial functions. In the 1970s, the view about the role of cities changes substantially. They were no longer simple sites for industrial production: their central place functions became the focus of interest. The long-term goal was to integrate the urban and rural settlement networks into a unified whole.

Benedek (2006a, 2006b) and Sandu (1984) identified five stages of urban development. In the first stage (1950-1953), the number of cities increased from 148 to 171. First of all, settlements with industrial and mining functions (such as Câmpia Turzii, Zărneşti, Ocna Mureş, etc.) and those with tourist functions (Covasna, Sovata, Borsec, etc.) were declared towns, but also a range of communes which were the most populous centers of extensive areas with low population density (Topliţa, Cristuru Secuiesc, Rupea). During this period, the urbanization rate was 2.71%, the highest in the socialist era, but it was followed by its lowest point (1.24%) in the second stage (1954-1962) (Sandu, 1984). The 1956 census registered 33 new towns (Nicolae, 2002, p. 294). Two of these new towns, Lipova and Buziaş, were spa resorts; however, Lipova also had a historic importance: it was a royal residence in the 15th century, as well as a *libera regiae civitas* (free royal city) (Voiculescu, 2004). In the same year, 14 urban settlements were reclassified as rural ones: Baia de Aramă, Darabani, Filipeşti-Târg, Huedin, Hârlău, Fălciu, Mihăileni, Ostrov, Peniţa, Răcari, Săveni, Ştefăneşti Târg, Târgu Frumos and Vama. The relegation of these towns (some of which were historical) was "quite unusual". This can be expained by the fact that all of them - except Vama - were simple market towns (*târguri*) and many were severely affected by the war from an infrastructural point of view (e.g., Ştefăneşti Târg). These towns simply no longer met the new political requirements. However, some of them maintained their administrative functions as raional seats (*reşedinte de raion*), such as Baia de Aramă, Darabani, and Hârlău. In 1968, only these towns regained their urban status out of those 14 settlements (Nicolae, 2002, p. 294; Ilinca, 1999, p. 168).

Also, at the 1956 census, there were 183 localities classified as urban settlements (*localităţi asimilate urbanului*), whose population represented 13.3% of the total urban population. Most of the new towns of the coming decades will be selected out from these settlements. So, in the 1960s and 1970s, former workers' centers of Cugir, Luduş, Călan, Becaş, Boldeşti-Scăeni, Valea Călugărească, Ţicleni, or tourist destinations like Băile Tuşnad and Băile Borşa became towns. By 1989, additional towns included Teiuş, Tălmaciu, Nehoiu, Bumbeşti-Jiu, Colibaşi, Aninoasa, and Piatra Olt. However, a significant part of the localities classified as urban did not gain the rank of town: examples include Iaşalniţa (near Craiova), Brazi (near Ploieşti), Săvineşti (near Piatra Neamţ), Chişcani (near Brăila) (Nicolae, 2002; Ilinca, 1999, p. 168).

At this stage, it should be noted that while acting on the existing settlement system, the socialist regime produced only two "totally new" towns, i.e. towns built starting from zero, which represented "the purest version of the planned socialist city" (Smith, 1996, p. 70). One of these was Victoria, a new center for the defence industry in Braşov County, whose construction began in 1948 under the name Ucea (Colonia Ucea, Ucea Roşie). The completely new town was renamed Victoria in 1954 (official website of the town of Victoria). The other town, Oneşti (Bacău County), was a centre for chemical industry established in 1960. It was known as Gheorghe Gheorghiu Dej during the socialist era (despite the existence of a small village with the same name, the industrial area as well as the residential areas were separate developments) (Benedek, 2006b, p. 53).

In the year 1960, a total of 12 new towns were declared, thanks to their economic development *(*Copşa Mică, Luduş, Călan, Cugir, Bocşa, Bicaz, Oţelu Roşu, etc.) (Ilinca, 1999, p. 168). For example, Oţelu Roşu, was created by merging two settlements, Ohaba Bistra and Ferdinand, in 1943. The resulting town, Ferdinand-Bistra, was renamed Oţelu Roşu by the communists in 1948. When it was declared an urban area, it also incorporated two neighboring settlements, Cireşa and Mal, in its administration.

The spring of the year 1962 is of particular importance from the rural-urban migration point of view. The generalization of the collectivization took place, and this was the date when "the gates of rural-urban migration opened wide": the coming period - that of the accelerated industrialization (1963-1981) - resulted directly in the "demographic emptying" of the rural space (Surd, 2010, p. 71).

In the third phase (1963-1970), the number of urban settlements first increased to 184 until 1966, then, in the period between 1966 and 1968, another range of settlements were promoted to the rank of town (Benedek, 2006a). Thus, in May of 1966, the locality of Motru was declared town, while following the measures for improving the administrative division, three other localities became towns in 1967: Marghita, Ineu, and Bălan. In this way, the country's urban network consisted of 187 urban settlements, out of which 45 were cities (Cucu, 1968, p. 17).

Especially the number of towns from the category of 20,000-50,000 inhabitants grew significantly: from 16 in 1930 to 25 in 1956, and to 43 in 1966. The number of towns with more than 100,000 inhabitants grew as well: from 3 in 1930 to 7 in 1956, and to 12 in 1966. At the same time, a noticeable fall occurred in the number of towns with a population less than 10,000, from 74 in 1930 to 70 in 1956, and to 60 in 1966 (Cucu, 1968, p. 21).

The period 1948-1968 represented also the first phase of the socialist industrialization, which aimed to develop the existing industrial centers, and in this way facilitated the further development of existing cities, especially the large industrial centers (Benedek, 2006b). The adopted Soviet-based model of planning relied on economic growth through hypertrophic industrial development, with highlight on industry (in particular on heavy industry), on the promotion of the working class and on defence-related investment (Săgeată, 2010, p. 81). The socialist industrialization of the country was reflected in the continuous growth of urbanization, as well as in the emergence and development of new urban centers (Cucu, 1968, p. 17). Ianoş and Tălângă noted that the hierarchical configuration of the Romanian urban system demonstrates a very close relationship between the industrialization and urbanization processes, which was especially true for the middle part of the hierarchy (Ianoş and Tălângă, 1994, p. 104).

According to Pop and Bodocan (2000), the new towns in Transylvania - 27 in total between 1948 and 1966 - resulted from the planned industrial process which begun after 1948 which had the effect of creating urban centers in the industrial area of Braşov (Codlea, Covasna, Râşnov, Săcele, Zărneşti, Rupea, and Victoria), as well as in the coal mining area of the Jiu Valley (Călan, Lupeni, Petrila, Uricani, and Vulcan), and in other industrial and service centers across Transylvania in the counties of Alba (Câmpeni, Cugir, and Ocna Mureş), Bistriţa-Năsăud (Sângeorz-Băi), Cluj (Câmpia Turzii), Harghita (Borsec, Cristuru Secuiesc, Topliţa), Hunedoara (Simeria), Mureş (Luduş and Sovata) and Sibiu (Agnita, Cisnădie, Copşa Mică). In this period, in Transylvania the biggest town was Cluj-Napoca (183,663 inhabitants), while the smallest was Borsec (2,750 inhabitants) (Pop and Bodocan, 2000, p. 212).

Table 2. Towns declared between 1948 and 1968

Name of the town	County	Year of declaration	Name of the town	County	Year of declaration
Agnita	SB	1950	Lipova	AR	1956
Anina	CS	1952	Marghita	BH	1967
Azuga	PH	1948	Moldova Noua	CS	1956
Baicoi	PH	1948	Moreni	DB	no data
Baile Herculane	CS	1948	Motru	GJ	1966
Baile Olanesti	VL	1948/1956 (no exact data	Negresti-Oas	SM	1964
Bicaz	NT	1960	Nucet	BH	1956
Bocsa	CS	1961	Ocna Mures	AB	1956
Borsec	HR	1956	Onesti	BC	1956

Name of the town	County	Year of declaration	Name of the town	County	Year of declaration
Breaza	PH	1952	Otelu Rosu	CS	1960
Busteni	PH	1946	Petrila	HD	1948 (no exact data)
Buzias	TM	1956	Rasnov	BV	1950
Calan	HD	1961	Rupea	BV	1951
Campeni	AB	1961	Sacele	BV	1950
Campia Turzii	CJ	1952	Sangeorz-Bai	BN	1960
Cisnadie	SB	1948	Sannicolau Mare	TM	1956
Codlea	BV	1950	Simeria	HD	1952
Comanesti	BC	1952	Slanic Moldova	BC	1950
Copsa Mica	SB	no data	Sovata	MS	1955
Covasna	CV	1952	Stei (Petru Groza)	BH	1952
Cristuru Secuiesc	HR	1952	Toplita	HR	1956
Cugir	AB	1960	Uricani	HD	1965
Eforie	CT	no data	Vascau	BH	1956
Huedin	CJ	1961	Victoria	BV	1949 (no exact data)
Ineu	AR	1967	Viseu de Sus	MM	1956
Jimbolia	TM	1950	Vulcan	HD	no data
Ludus	MS	1960	Zarnesti	BV	1951

Source: Voiculescu, 2004; Săgeată, 2002

Benedek (2006a, 2006b) and Sandu (1984) note that an important event was the administrative reorganization from 1968, when the county system was re-established. The administrative classification had also a function-distribution and state aid distribution role. In this third phase, the pace of urbanization slowly increased (1.5%).

The year of 1968 appears as a watershed in other opinions and divisions as well. Law no. 2/1968 marked a large-scale transformation: a transition was made to a new administrative-territorial organization with the county as administrative unit, which replaced the Soviet-type model (Săgeată, 2002). Instead of the 16 regions, 39 counties (plus the city of Bucharest) have emerged, while the town and the village were established as basic units, and all the intermediate levels were removed (Ianoş, 1987, p. 40). The territorial structure based on counties highlighted the low economic potential of urban centres which could not develop in the shadow of the former regional seats. After the year of 1968, the new county seats - Botoşani, Bistriţa, Buzău, Slobozia, Miercurea Ciuc, Vaslui, Alexandria, Zalău, etc. - registered spectacular jumps (Ianoş, 1987).

Through Law no. 2/1968, 50 new towns[4] were declared, so the number of towns rose to 189, to whom a number of 47 cities must be added[5].

A characteristic of the period preceding 1968, especially 1956-1968, was that the new towns were declared on a rural background. In these new towns, certain industrial units were implemented which have taken over a part of the industrial activity from the nearby towns (Voiculescu, 2004, p. 92).

Between 1948 and 1966, the number of towns increased from 152 la 183. In the same period, the number of towns/1000 km^2 increased from 0.6 to 0.8, while the number of towns/county from 3.7 to 4.5 (Ilinca, 1999).

Table 3. Towns declared in 1968

Towns declared in 1968	County	Towns declared in 1968	County
Aleşd	BH	Întorsura Buzăului	CV
Baia de Aramă	MH	Jibou	SJ
Băile Tuşnad	HR	Nădlac	AR
Bălan	HR	Năvodari	CT
Baraolt	CV	Negreşti	VS
Beclean	BN	Novaci	GJ
Bereşti	GL	Ocna Sibiului	SB
Boldeşti-Scăeni	PH	Pâncota	AR
Borşa	MM	Plopeni	PH
Brezoi	VL	Săveni	BT
Buftea	IF	Sebiş	AR
Cavnic	MM	Segarcea	DJ
Cehu Silvaniei	SJ	Tăndărei	IL
Chişineu-Criş	AR	Târgu Bujor	GL
Comarnic	PH	Târgu Cărbuneşti	GJ
Costeşti	AG	Târgu Frumos	IS
Curtici	AR	Târgu Lăpuş	MM
Dărăbani	BT	Tăşnad	SM
Deta	TM	Ţicleni	GJ
Drăgăneşti-Olt	OT	Titu	DB
Făureni	BR	Topoloveni	AG
Fieni	DB	Vânju Mare	MH

[4] In the literature the number of newly declared towns do not match across the different studies and authors. For example, Ioan Ianoş (1987, p. 40) writes about 54 new towns, Ilinca (1999, p. 168) mentions 49 such towns in 1968, while the law itself contains 50 such settlements. I tried to go back, if possible, to the most original sources (the law, in this case), and interpreted these first of all.

[5] It is important to note that from a legal point of view the term *town* does not refer to all types of urban settlements, so cities and towns mean entirely separate categories.

Towns declared in 1968	County	Towns declared in 1968	County
Filiaşi	DJ	Videle	TR
Hârlău	IS	Vlahiţa	HR
Horezu	VL	Zlatna	AB

Source: Law no. 2/1968

Some towns declared this year have experienced changes in their status even up to three times in their history. For example, *Dărăbani* received town status in 1926, but was downgraded to commune in 1950, in order to be re-declared urban in 1968. *Deta* became urban for the first time in 1810 in the Austro-Hungarian era, while in 1968 received the town rank for the third time in its history. The town of *Hârlău*, initially part of Botoşani County, fulfilled different administrative functions (seat of the district - *reşedinţa plăşii* - Coşula, than Hârlău) until it was downgraded to the rank of commune in 1950. Hârlău became a town again in 1968, already as a part of Iaşi County (Anuarul Socec). Most of the towns declared in 1968 were located in agricultural areas (Segarcea, Topoloveni, Vânju Mare, Bereşti, Săveni, Dărăbani, Târgu Bujor, etc.), or were mining centers (Ţicleni, Bălan, Cavnic, Zlatna), centers of industry of construction materials (Fieni, Comarnic, Aleşd) and wood industry (Deta, Brezoi, Întorsura Buzăului) (Ilinca, 1999, p. 168).

A characteristic of the urbanization of 1967-1968 is that two or more rural settlements were "stitched together" in the moment of their reclassification as urban (practically, villages were merged in order to make towns). One of the most prominent examples is the case of *Tăşnad*, which was merged with five other rural settlements (Blaja, Gig, Raţiu, Sărăsad and Valea Morii) when it became a town in 1968. Voiculescu notices: "It was intended, obviously, a contribution of the population which was necessary to fulfill the numeric criterion for a settlement to became a town. Tăşnad has a rural character even today" (Voiculescu, 2004, p. 94). The author points out other declarations through merging as well in the Western Plain (Ineu, Pâncota, Chişineu Criş, Sebiş, Deta).

Because of the turning into towns of settlements which were rural before, "jumps" were recorded in 1956, 1966 and 1968 in the accentuated, but linear evolution of the urban population. In general, in the period between 1950 and 1974, the growth rate of urban population was about three times higher than the growth rate of total population (Meaşnicov, 1977). Of course, this meant differentiated rates of urban population growth by type and by size of the towns in the same period (1956-1974). The fastest rates were recorded by towns with 20,000-100,000 inhabitants and with predominantly secondary and tertiary functions. In turn, small towns with population less than 20,000 and mostly employed in agriculture had the lowest rates (Meaşnicov, 1977, p. 59).

In the fourth stage (1971-1980) identified by Benedek (2006a, 2006b) and Sandu (1984), the urbanization rhythm escalated sharply. As a result of an administrative action, 49 settlements were declared towns: all the settlements with mining functions (for example Baraolt, Bălan), those with considerable tourist functions (such as Băile Tuşnad), but also several agricultural settlements in order to strengthen the bottom level of settlement network. Tóth (1988, p. 191) calls the 1970s the period of a balanced yet faster-than-necessary concentration of the population in urban areas.

On the 30th November 1974 the Law of systematization of the territory and of the urban and rural settlements (*Legea sistematizării teritoriului şi localităţilor urbane şi rurale)* was adopted. Theoretically, the goal of the systematization was "to provide dynamic organization of space in order to increase the welfare of the population" (Cucu, 1977, p. 18), but it was ideologically supported by the idea of the superiority of the urban settlement and lifestyle. Systematization as an "objective requirement of contemporary and future development" aimed the approach of the rural lifestyle to that of the urban one, and the gradual erasure of the differences between the village and the city (Cucu, 1977, p. 13), in favour of the urban, of course. The destruction of villages was intended, which involved two different processes, redevelopment and complete elimination of small villages by planned bulldozing (Turnock, 1991). The systematization of the rural settlements meant also for the coming 15-20 years the selection of 300-400 communes with more than 5,000 inhabitants which will become new urban centers, through "vast, conscious and directed activities" (Cucu, 1977, p. 52-53). Thus, the future urban network would contain about 350 towns in 1980, 450 towns in 1990, and 580 towns in 2000 (Cucu, 1977, p. 130).

The new regional development concept of the seventies meant not only the destruction of villages, but also the strong development of the towns (Benedek, 2006b). In 1979, through the Decree no. 281 of 27th July 1979, certain county seats were upgraded to the rank of city; these were Alexandria (Teleorman), Bistriţa (Bistriţa-Năsăud), Miercurea Ciuc (Harghita), Sfîntu Gheorghe (Covasna), Slatina (Olt), Slobozia (Ialomiţa), Vaslui (Vaslui), and Zalău (Sălaj). The decree modified the Annex of Law no. 2/1968 accordingly (source: Decree no. 281/1979).

The fifth stage (1980-1989) coincides with the stagnation of the socialist era. The urbanization slowed down. No promotions were made until 1989, except one special case: Rovinari, a mining center, was declared town in 1981, bringing the total number of towns to 237 (Turnock, 1991). In 1989 one last town declaration program occurred before the revolution: 23 new towns joined the urban system. Many are centers of industry and services (Avrig, Colibaşi, Dărmăneşti, Nehoiu, Tălmaciu), while others are to be found in areas remote

from existing towns (Turnock, 1991). Muica et al. (2000) highlights the political nature of the town proclamations. They note that for example in Buzău County in the 1970s four villages were selected for promotion to urban status (Beceni, Berca, Nehoiu, Pătârlagele), along with Pogoanele in the plains. Eight other promotions were to follow during the 1980s, including Pârscov, "which was later dropped in favor of Zărneşti" (Muica et al. 2000, p. 158). But only two of them, Nehoiu and Pogoanele received the urban status in 1989.

Table 4. Towns declared in 1989

Name of the town	County	Name of the town	County
Aninoasa	HD	Mioveni (Colibaşi)	AG
Avrig	SB	Murfatlar (Basarabi)	CT
Bolintin-Vale	GR	Negru Vodă	CT
Budeşti	CL	Nehoiu	BZ
Bumbeşti-Jiu	GJ	Ovidiu	CT
Dărmăneşti	BC	Piatra-Olt	OT
Fundulea	CL	Pogoanele	BZ
Ianca	BR	Scornicești	OT
Iernut	MS	Seini	MM
Insuratei	BR	Talmaciu	SB
Lehliu-Gară	CL	Valea lui Mihai	BH
Mihăileşti	GR		

Source: Turnock (1991), with a small correction: the author enumerates 24 towns, but one of them - Gurahonț - was not an urban settlement.

Ioan Ianoş (1987) divided the period after 1968 in three stages. The first started in 1968 and was ended by the XI. Congress of the Romanian Communist Party (*Partidul Comunist Român* - P.C.R.) in 1974, when emphasis was placed on the economic development of the new county seats. The second stage took place between the XI. Congress and the XII. Congress (1979) of the P.C.R., and was marked by industrial reanimation of other towns, especially small and medium-sized ones, which were part of the county level urban networks (for example, Şimleu Silvaniei, Lipova, Dorohoi, Mangalia, Urziceni, Mizil, Strehaia, Tăşnad, Topliţa, Cristuru Secuiesc, etc.). The third stage lasted, basically, until the fall of the regime, and was characterized by the industrial and economic development of numerous rural localities, in general. In this last stage the regime intended the strengthening of the economic base of the future urban centers, which would complete the national urban network, and especially the network of certain counties with a lower degree of urbanization

(Ianoș, 1987, p. 40). This "reverse" urbanization - modernizing first the top of the urban hierarchy, then the medium-sized cities, finally developing and expanding the number of small towns - was typical everywhere where modern economic development was delayed (Enyedi, 1996, p. 114).

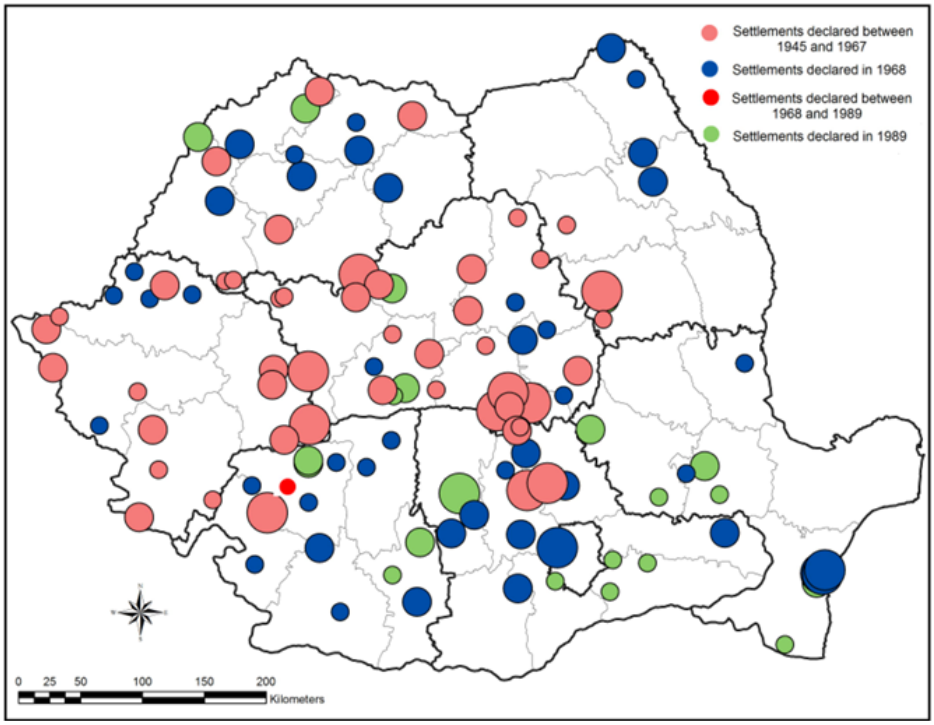

Fig. 3. New towns in the socialist period by the year of their declaration
Source: own draft

The most representative phenomenon of the above-mentioned 1966-1985 period is the significant modification of the median sector of the urban hierarchy, namely the much faster population growth in medium-sized cities compared to other urban settlements (due to the role of county seat, first of all). Compared to 1966, the population of these cities in 1982 exceeded increases of 150-200%[6] (Ianoș 1987, p. 40).

[6] For example, 255% in Râmnicu Vâlcea, 241% in Slatina, 235% in Slobozia, 213% in Zalău, 202% in Vaslui, 189% in Sfântu Gheorghe, 174% in Miercurea-Ciuc, 175% in Deva, 169% in Târgoviște, etc. (Ianoș, 1987, p. 40).

The growth of the urban population was an important issue of the socialist urbanization. The urban population actually doubled between the censuses of 1956 and 1977 (+ 98%), and increased by 32% between those of 1977 and 1992 (Mureşan, 1999, p. 106). Researchers dealing with the socialist era identified three main ways of the urban population growth that explain the continuous increase of the urbanization in the period of 1948-1990: (1) the high rate of natural growth of the population in the majority of towns; (2) the rural-urban migration (these two are interrelated also: the migration flows were constituted first of all by young persons between 18 and 40 years with high fertility, and they not only led to an increase in the population of towns, but also to better values of the natural growth of the population), and (3) increase of the share of the urban population through administrative measures. These measures had three specific forms: declaration of new towns, delimitation of new suburban communities, and the inclusion of some villages as parts of the towns (Ianoş and Tălângă,1994; Cucu, 1968; Ilinca, 1999; Benedek 2006; Sandu, 1984).

Rural-urban migration is considered the most influential cause by the researchers of the socialist period (Cucu, 1968; Mureşan, 1999, etc.). The migration was mainly from rural to urban areas, as "urban-based employment offered the prospect of higher living standards at a time when collectivization removed much of the satisfaction in looking after the family estate", all over Eastern Europe (Drgona and Turnock, 2000, p. 235). The balance of switching from one environment to another is favorable for the urban one for the entire period. Net emigration rates from rural were always positive (Mureşan, 1999, p. 106). The evolution of the number of rural inhabitants demonstrates the same: Rotariu (1997) - quoted by Mureşan (1999, p. 106) - stated that the rural population has fluctuated around 12 million inhabitants for a long period of time, which proves that the whole natural increase has been lost through migration. After 1980, there was even a demographic drop of the number of rural inhabitants, that is, the rural areas lost more than their natural increase. According to Sandu (1987), the rural to urban migration flow - together with the natural growth rate of population specific to the residential environments and with the reclassification of settlements – led to a redistribution of the population between rural and urban areas, which had a changing amplitude over time[7]. But despite the changing amplitude, it was the main contribution to urban population growth in all stages of the socialist period (Mureşan, 1999, p. 103).

[7] Sandu (1987, p. 191) defines: (1) stages of low amplitude characterized by a low level of urbanization and development and a dispersed rural-urban migration (1940-1948/1950; 1955/1956-1966; 1982-1985), (2) stages of high amplitude realized first of all through intensive rural-urban migration (1970-1976/1978; 1950-1954/1955), and (3) stages of medium redistribution, realized by a combined effect of rural-urban migration and differentiated natural growth (1966-1970; 1979/1980-1982).

Until 1948, internal migration had an "anarchic" nature and was directed especially towards Bucharest and other big cities. During the years 1948-1989 the flow of rural population to towns had a planned character. The Romanian state wanted to avoid excessive concentration of population in cities, as well as the inherent economic and social difficulties, public health problems, the shortage of residential space and issues arising from it, encouraging thus the establishment of the migrants in medium-sized cities with industrial character. Starting with 1982, bans were introduced which forbade residence in big cities, which were declared "closed towns". In 1990 all access barriers in these cities have been removed (Mureşan, 1999, p. 103).

Opinions vary about the second most important way of the urban population growth. The natural growth is emphasized by Mureşan (1999), Ilinca (1999) and others. Ilinca argues that the total increase of population recorded by the 183 cities existent in 1966 was achieved mainly through migration (70%) and natural growth (22.2%), while the contribution of new cities was only 7.8% (Ilinca, 1999). Mureşan states that in the period of 1948-1966, the natural increase makes a substantial contribution to the growth of the urban population, because, despite of the decrease of birth rate, death rate suffers a serious diminution. But in the period of 1967-1989, natural increase was not the main cause of the urban population growth, despite that it had positive values constantly (Mureşan, 1999, p. 102). Natural growth was strongly related to the pro-natalist legislation. The "natalist period" lasted two decades, between 1966 and 1989, and strongly influenced fertility. Fertility in Romania almost doubled, from 1.9 to 3.6 children per woman (Mureşan, 1999, p. 125).

Based on the ratio of natural increase and migration in the evolution of cities, Ilinca defined towns with population originated predominantly from migration (Galaţi, Brăila, Oneşti, Craiova, Hunedoara); towns with population originated predominantly from natural growth (located close to big urban centers, like Curtici, Buftea, Topoloveni, Râşnov, Cisnădie, Bocşa, or thanks to their predominantly agricultural economic profile, for example Băileşti, Dărăbani, Cehu Silvaniei, Drăgăşani, Strehaia, Salonta); finally, towns with population coming in almost equal proportions from natural growth and migration (emerging urban areas from economic and sociocultural point of view) (Ilinca, 1999, p. 169).

Administrative measures, namely the reclassification of the settlements from one category to another - i. e. from rural to urban - are the second most important, at least in the opinion of Cucu (1968, p. 24), Ianoş and Tălângă (1994). The latter note that in 1990 there were 124 more towns compared to 1948, which means about 0.9 million inhabitants. Two phases are considered

as more important in the town declaration process: 1968 (50 rural settlements were made towns[8]) and 1989 (23 new towns appeared). The territorial distribution of these settlements is diffuse, without a particular concentration in certain areas (Ianoş and Tălângă, 1994). Regarding the reclassification of the settlements, there were no clear demographic, economic or lifestyle criteria for a village to become a town in this period. Most of the towns have emerged through decrees, laws and decisions of Parliament, encompassing a big amount of subjectivity (for example, settlements of origin of dictators, rural settlements with important role in labor movement) (Ianoş, 2004). In the opinion of Mureşan (1999), the declaration of new towns had a reduced contribution to the urbanization, because the new towns were small in terms of number of inhabitants, thus contributed very little to the increase of the urban population (Mureşan, 1999, p. 102).

The creation of suburban communes resulted also in the growth of the urban population, however in an artificial way. The category of the suburban communes summed about 700,000 inhabitants, namely 6% of the total urban population (Ilinca, 1999, p. 167). The demographic yearbook of Romania subsequently incorporated the population of the towns declared in 1968 to the urban population counted at the 1966 census, while between 1977 and 1992, 77 settlements were attached to the nearby towns (Mureşan, 1999, p. 102). Ensuring the continuous growth of the share of urban population was important also, because a high proportion of rural population represented a symbol of the backward past (Enyedi, 1996, p. 114).

A characteristic of Romania is the extremely fast pace in which urbanization occurred. This is demonstrated by the high values of the average annual growth rate between the population censuses: 4.97% between 1948 and 1956; 2.93% in the period of 1956-1966; 2.31% between 1966 and 1977, and 1.86% in the period of 1977-1992 (Mureşan, 1999, p. 101) respectively. The urban population has increased four times after 1930 up to and including 1992 (Mureşan, 1999, p. 103), as indicated in the table below.

Table 5. Rate of urbanization in Romania during the socialist period (%)

Residential area	1948	1956	1966	1977	1982	1992
Urban	23.4	31.3	38.2	43.6	51.5	54.3

Source: Trebici and Hristache, 1986; Mureşan, 1999, p. 102

[8] As mentioned earlier, Ianoş and Tălângă are speaking about 52 new towns in 1968 (Mureşan is speaking even about 53), but the analysis of the law itself made clear, that there were only 50 new towns.

In 1982, the number of urban settlements was 237, while the average population of a town consisted of 45,875 inhabitants. But the level of urbanization was very differentiated on county level, ranging from 17.2% (Giurgiu) to 75.3% (Braşov). Highly, medium and poorly urbanized counties could be separated (Trebici and Hristache, 1986). Trebici and Hristache (1986) mentions also, that in this period the urbanization correlates significantly with the industrialization. The highest levels of urbanization are characteristic to counties with old industrial centers (such as Braşov, Huedin, Sibiu, Cluj, Timiş, Caraş-Severin, Prahova), or new ones (Galaţi) – apart from a few exceptions like Constanţa and Brăila.

At 1st July 1985, the population of those 237 towns accounted for almost 11.4 million inhabitants. If counting also the suburban communes, the urban population represented 53.1% of the total Romanian population (Ianoş, 1987, p. 37). Ianoş pointed out that the towns have polarized the whole territory of the country, but with differentiated intensity form one county to another. On average, every town of the country corresponded to an area of approximately 1000 km^2, which encompassed 11.4 communes and 56.2 villages. But the values were spread between 335 km^2/town (Prahova) and 3810 km^2/town (Giurgiu), respectively between 5.2 communes/town (Harghita) and 57 communes/town (Giurgiu), as well as between 24 villages/town (Covasna) and 187 villages/town (Giurgiu). The striking differences between the counties have imposed the overtaking of certain polarizing functions by certain rural settlements, which benefited from economic development, as well as social-cultural endowments in order to became capable of exercising command functions in the territory (Ianoş, 1987, p. 37).

After a somewhat stabilized increase of 0.6-0.8% in the period of 1982-1988, a sharp upward move of 1.3% was registered in 1989 (determined in a proportion of more than 2/3 by the declaration of those 23 new towns) (Ianoş and Tălânga, 1994).

But because of the fast pace and short period of urbanization, the development level of the urban lifestyle remained low (Benedek, 2006a). The settlements were exposed to "forcible urbanization, but only insofar as quantity was concerned", due to artificial multiplication of towns and of the town population. The politically maneuvered oversized urbanization was not correlated with the absorption capacity of the urban centers, thus could not integrate the big migratory flows from the countryside (Săgeată, 2010, p. 81). The socialist conditions in which the urban system evolved after 1948 eliminated the "natural" competition between the towns, letting policy decisions to play the predominant role in organizing the network of cities (Ministry of Regional Development and Public Administration, www.mdrl.ro). While the

hierarchy of the socialist urban system had an artificial character (on national, but especially on regional and county level) (Ianoş and Tălângă, 1995, p. 101), the urban system found itself also in a fake state of equilibrium by the end of the communist period: whereas some cities with a traditional and consolidated territorial role with specific functions were artificially pulled back, the new ones had no time to develop the normal urban structures and strengthen the territorial relations (Pascariu and Elisei, 2012, p. 3). After the modifications of the transition period - because of its relative youth and still immature character -, the Romanian urban hierarchy needs to complete its maturation process (Ministry of Regional Development and Public Administration, Territorial Atlas of Romania, www.mdrl.ro).

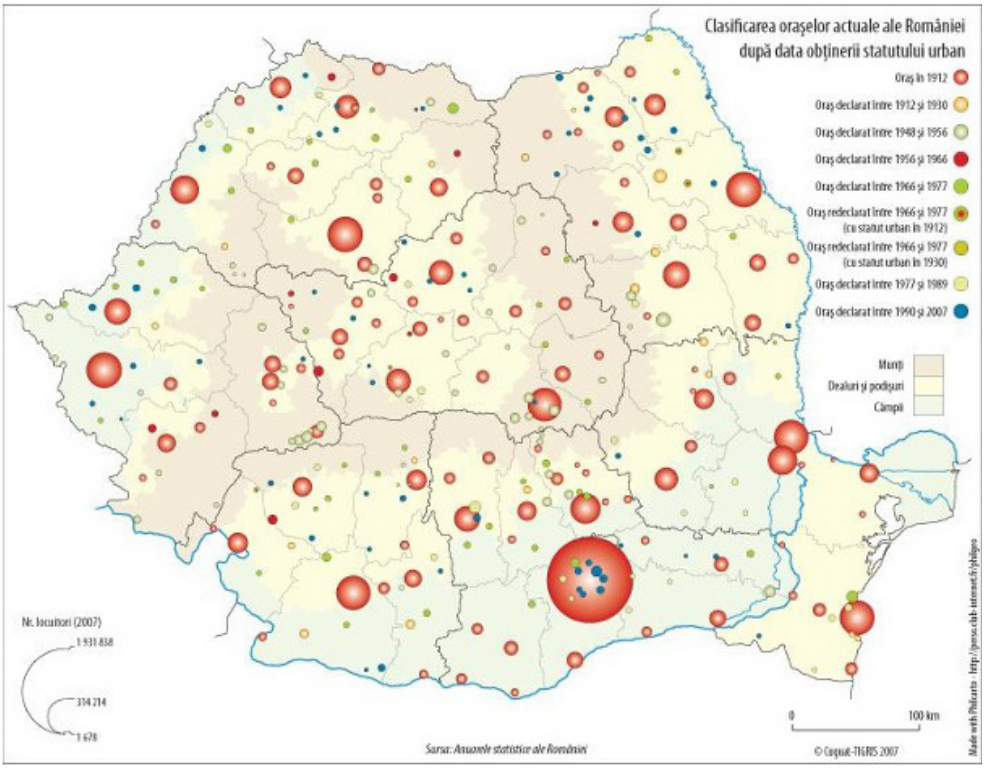

Fig. 4. The towns of Romania according to the year of their declaration
Source: Ministry of Regional Development and Public Administration, Territorial atlas of Romania (http://www.mdrap.ro/)

5. Conclusions

From the 18th century to the post-socialist period, the history of modern urbanization of Romania was characterized by a strong pro-urban sentiment, with towns and cities seen as centers of development and well-being. Initially, urbanization in Eastern Europe, including Romania, was driven by administrative functions rather than economic development, unlike in Western Europe where industrial capitalism played a key role. By the mid-19th century, the rate of urbanization in Romania was low, with small towns and a predominantly rural population. The Industrial Revolution in the second half of the 19th century began to influence the country, leading to gradual urbanization, however, the urban growth in Romania was slower compared to Western Europe.

The socialist period (1948-1989) marked a significant shift in Romania's urbanization, driven by state-controlled and planned urban development. The regime's policies focused on egalitarianism and the superiority of urban settlements over rural ones, leading to the expansion of existing cities, the creation of new towns, and attempts to eliminate villages. This period saw a deliberate effort to transform rural areas into urban ones, aiming to uplift the entire country to a "higher level of civilization". The planned development and the attempt to reduce contrasts between urban and rural areas, together with the idea of superiority of the urban areas resulted in a legacy of a strong pro-urban sentiment that had a significant influence on the post-socialist urbanization of Romania.

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RECONVERSION OF MONO-INDUSTRIAL URBAN AREAS (CASE STUDY – BECLEAN CITY)

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ABSTRACT. – Reconversion of Mono-Industrial Urban Areas (Case Study – Beclean City). Following the collapse of the communist regime in Romania, the country's economy went through deep transformations, which negatively impacted the standard of living of the population. The closure of a large number of industrial enterprises overwhelmed the Romanian cities, and its impact was felt more intensely in the small, mono-industrial urban areas: since many of these had been established around these companies, their very existence was threatened by the closures. The city of Beclean is a typical example of such a mono-industrial settlement, which started facing difficulties with the decline of its metallurgical industry. In its search for life saving ideas, the local government decided to focus on the tourism potential of the area, as evidenced by the fact that all the projects under implementation in the city aim at developing this sector.

Keywords: *reconversion, revitalization, sustainable development, sustainable tourism, urban resilience.*

1. Introduction

The city of Beclean is the largest settlement along Someșul Mare Corridor and the second largest in Bistrița-Năsăud County. It is a typical example of an urban settlement trying to find new solutions in order to return to its pre-1990s economic and social status. The well-documented economic decline of urban areas in Romania was felt more strongly in small towns, which are characterized by a narrow range of functional economic branches; such is Beclean, among

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others, and this feature directly affected its inhabitants' standard of living. After the 1990s, when the average number of active workers in the city was 7,517, there was a steep and continuous decline until the 2005-2010s (3,888 workers); since then, the number stabilized around 4,100 (4,253 in 2012, 4,037 in 2016, 4,010 in 2018), then it dropped again suddenly to 3,610 in 2019. This latest decrease was due to special circumstances, namely the challenges faced by the largest employer in the city, SC Dan Steel Beclean, a company that continued the metallurgical activity from the communist period. Through all this, the city's population remained close to 12,000. In conclusion, we have seen a 52% decrease in the average number of active workers in the city over a 30-year period, while the total population has roughly remained at the same values.

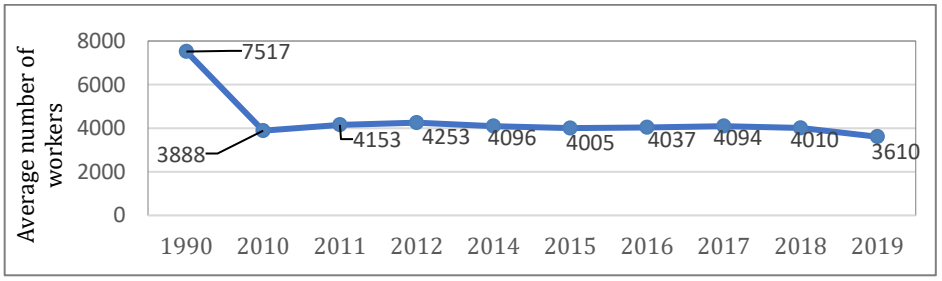

Fig. 1. Evolution of the average number of workers in the city of Beclean.
Source: Direcția Regională de Statistică Bistrița-Năsăud

Fig. 2. Location of the main economic operators.
Source: Beclean City Bypass – Road Traffic Study

2. Theoretical background

During the communist period, many small towns in Central and Eastern Europe underwent intensive industrialization (Hirt, 2005; Stanilov, 2007; Sỳkora, 2009). Communist governments invested heavily in the development of the industrial sector, which led to rapid growth in production and the creation of jobs in small towns. This industrialization had a significant impact on the urban landscape and attracted many migrants from rural areas (Hamilton, Dimitrowska & Pichler-Milanović, 2005). After the fall of the communist regime in 1989, Romania faced a series of significant changes in the field of urban development, especially in small towns in the country (Ianoş, 2001, 2004; Dumitrescu, 2008; Roşu, 2015). This was marked by the transition from a centralized and planned system to a market economy, and the impact of these changes on small towns in Romania was considerable. Likewise, the impact of the change in development strategies after 1990 for small cities in Romania was mixed. On the one hand, some of the cities managed to successfully adapt to the new conditions and attract investments, which led to economic growth and an increase in the standard of living for the inhabitants. On the other hand, others have lagged behind with weak economies and poor infrastructure. Factors such as geographic location, availability of resources and the quality of local governance had a significant impact on the results (Heller & Ianoş, 2004). One of the concepts widely addressed in specialized literature and often used by decision-makers is associated with the capacity of urban systems to resist various changes and evolutionary transformations and to be able to reorganize from a structural and functional point of view (Parkinson et al., 2012). In the context of the urban resilience paradigm, a large part of small towns in Romania, after 1990, faced sudden economic changes and a loss of traditional industry (Simmie & Martin, 2010; Dumitrescu, 2008; Bănică & Muntele, 2015; Red, 2015). However, many residents and local authorities have been able to adapt and find new ways to support their communities. For example, small towns began to invest in developing local resources, such as agriculture and tourism, to diversify their economy and become more resilient to sudden economic changes. As small towns faced economic restructuring, they had to reinvent themselves and adapt to new demands of the market economy. Cities that have succeeded in diversifying the economy and attracting investment have had a significant impact on the wider territorial system, contributing to the development of surrounding rural areas (Radu, 2015). This development process has had a positive impact on the sustainable development of the regions, creating a more balanced economy and promoting the efficient use of

natural resources. Many small towns in Romania have suffered from outdated infrastructure and abandoned urban areas. With the support of European funds and other funding sources, many of these cities have started urban regeneration projects to revitalize these areas and make them more attractive to investors and tourists. This process of urban regeneration had a positive impact on the functionality aspect of small towns, contributing to increasing their attractiveness. By promoting the unique natural, cultural and historical resources of these cities, new opportunities for economic development have been created (Sýkora, 2009, Bănică & Muntele, 2015). Tourism has helped to create jobs and raise living standards, but at the same time it has required significant investment in tourism infrastructure and services. In conclusion, the change in development strategy after 1990 had a profound impact on small towns in Romania. These cities had to become resilient and adapt to new economic realities, invest in urban regeneration to revitalize their abandoned areas, contribute to territorial development and promote sustainable development. At the same time, they had to focus on the social and cultural development aspects and capitalize on the tourism potential. Despite all the challenges and difficulties, these small towns have demonstrated that they can be engines of regional development and examples of adaptation and innovation in a context of economic and social transition.

3. Methodology

This research analyses the results of the Beclean local government's strategy for development, which had European Union funding and was implemented over a period of about fifteen years with the aim of capitalizing the region's tourism capabilities. By contrasting these results with those achieved by other administrations in the same region, we hope to identify a successful model that can be followed by other communities living in the former mono-industrial cities of the communist era.

4. Results and disscution

4.1. Revitalization of the urban area by investing in tourism

In 2009, in order to counter the negative effects of this trend, the local government, who had not been able to attract investors from the industrial sector – due to the lack of a medium- and long-term action plan, inadequate infrastructure, inexperience or even political or personal conflicts of interests, as well as a lack of support from the county level of governance, which directed all investments to the county seat – found a successful solution in accessing EU funds (non-repayable PHARE grants). This first step marked an important turning point in the evolution of the city. The implemented project was aimed at capitalizing on the spa resources of the salt lakes in the north-west region of Romania, in collaboration with the administrations of Cojocna and Dej (for Ocna Dejului). Consequently, on June 25, 2010, within the administrative territory of the city of Beclean, Băile Figa spa resort was opened up; it consisted of a building with an indoor pool, sauna, jacuzzi, changing rooms, gym, and outdoor saltwater pool. Although the projects implemented in the three locations had the same beginnings, Beclean city administration anticipated the development potential of the project and constantly pursued the expansion of the leisure area, which finally managed to distinguish itself from the similar resorts in Cojocna and Ocna Dejului. Namely, with the help of EU financing or its own funds, the local government directed several expansion projects over the next years: 4 additional outdoor pools (one of them heated), a lazy river, slides for children and adults (one of them 140 m long), aerosol therapy areas, playgrounds for children, walkways, mud-packing

Fig. 3. "Legacy" Centre
Source: the authors

Fig. 4. Social Centre
Source: the authors

therapy areas, lifeguard station, sports fields and several concession stands. Moreover, the city hall opened to private investors a concession lots area close to the resort, and approximately 200 cottages and 150 small houses were built there, providing around 2,500 tourist accommodation units. These developments allowed the resort to attract increasing numbers of tourists: over 200,000 entrance tickets to the resort were sold in 2021, as compared to 20,000 in 2010. Despite this success, a slowdown in the rate of annual growth in the number of tourists has been noted over the last 3 years. Also in 2021, the leisure area of Băile Figa – the city of Beclean was official ly declared a tourist resort of local interest. The Ministry of Economy, Entrepreneurship and Tourism (MEAT) press release announcing the official resort status for Băile Figa leisure area states that this "is a European Destination of Excellence, as it was awarded the 3rd place in the 2019 national competition for the health and relaxation tourism category".

The main challenge for the local tourism is the shortness of the period when the resort is visited by a large number of tourists (July and August). In order to make the destination more attractive to tourists, and to extend the tourist season as well, several EU-funded projects were launched, some of which are planned to be opened very soon. In fact, one of these projects was opened to the public in 2023 inside the resort: it is called the Legacy Recreational Centre and it has recreational-educational, recreational-sports and recreational-creative functions. The project involved the construction of a building with several facilities, including 4 swimming pools, a bowling hall, a gym, and a conference hall. The various activities of the centre can host 425 people at the same time. Very close nearby, and also in 2023, a social centre was opened; its role is to provide the services of a properly equipped physical recovery unit. In addition to this, a children's playground was also set up on an area of approximately 1 ha. Several projects aimed at improving urban mobility, and benefiting the tourism sector as well, were also carried out. One such project

is the Sustainable urban mobility plan, which allowed for the rehabilitation of all the streets in the city and the setting up of a local transport company. This company manages 8 electric buses, a depot, and new stations, and its services include the connection between the city of Beclean and Băile Figa resort. The bypass of the city of Beclean is also under construction at this time; its aim is to prevent frequent times of traffic congestion, which negatively impacts tourism as well.

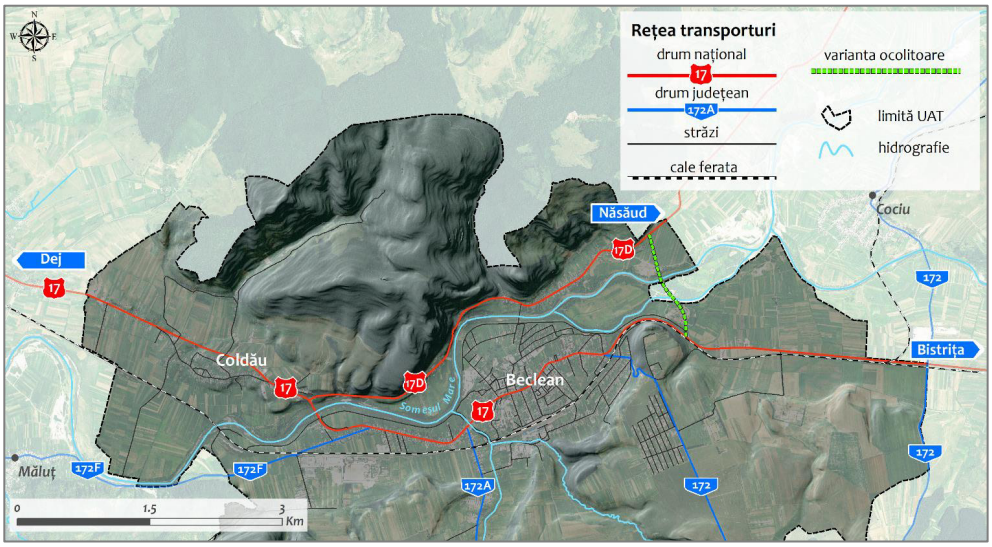

Fig. 5. The bypass route

Source: Beclean City Bypass – Road Traffic Study

According to the road traffic study carried out for this purpose, approximately 2.7 million vehicles (out of which 20% are heavy-duty) transit through the city annually, at an average speed not exceeding 30 km/h. In addition to cutting down transit times – with clear economic and environmental benefits, and also helping to increase the quality of life for the residents – the bypass will improve access to Băile Figa, as its junction with the DN17 road is located near the access road to the resort. Another large-scale project aimed at significantly raising the tourism profile of the area is the "Urban Garden of Transylvania", currently in its research phase. The plan is to use the 10 ha area for setting up facilities which allow the development of sustainable forms of tourism, such as glamping, for which 55 tents are planned. Furthermore, floating bungalows on an artificial lake, greenhouses with exotic plants, and hotels and shopping centres will also be built. In order to capitalize on the area's

tourist potential, the Local Action Group "Ținutul Haiducilor" (Outlaws Land) was set up; it is made up by 18 administrative and territorial units around the city of Beclean (17 in the west of Bistrița-Năsăud County and one in Cluj County). This approach is an attempt to capitalize on the resources of the 17 administrative and territorial units neighbouring the city of Beclean in a unified manner, with coordination from the core municipality.

5. Conclusions

As we have seen, the municipal government has opted for tourism to be the main engine of progress for the city, disregarding all other options. However, for the time being, the economic impact of the small private tourism businesses around the resort has not been able to replicate the positive effects of the large industrial companies that were there prior to 1989. Other neighbouring cities have implemented different strategies, focusing mainly on industrial development (Dej city, for instance). Only the future can tell, after all the projects now in various stages of development are completed, whether the local government has found the winning option in tourism, so as to ensure a complete conversion of the economic profile and a sustainable development for the city of Beclean.

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BENGAL: FROM A PERIPHERY TO THE HEARTLAND OF SOUTH ASIA

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ABSTRACT. – Bengal: from a Periphery to the Heartland of South Asia. The historical province of Bengal, one of South Asia's most densely populated areas from ancient times, was mainly a periphery within the states that succeeded on the subcontinent until the late Middle Ages. Conquered in the 16th century by the Mughals, an important part of its population embraced Islam. The arrival of the Europeans put the province into the frontline of international trade. In the 18th century Bengal became the center of the British Raj, which gradually extended to the whole of India, with its capital at Calcutta until 1911. In the first half of the 20th century, Bengal became one of the main centers of anti-British resistance. However, when India finally became independent, the unfortunate partition of the former British colony resulted in the second partition of Bengal too, the consequences of which are visible until today, especially taking into consideration the mass of refugees which flowed from Eastern Bengal to India. Though West Bengal and especially the great urban agglomeration of Kolkata remains one of India's most important industrial and commercial zones and is quickly developing today, the region was for decades lagging behind other states, while Kolkata lost its primacy (behind Delhi and Mumbai) among the great cities of India.

Keywords: *colonialism, Raj, British Empire, independence, Partition.*

1. Introduction

In February 2024 I was able to participate at an Erasmus+ Staff Training Mobility at Jadavpur University of Kolkata, India. After a long voyage via Warsaw and Delhi, our Air India plane landed smoothly at the Kolkata International Airport, where our colleagues from JU were waiting for me. Though at first I was

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a little bit worried about traveling all by myself to such a distant country, their hospitality and careful attention made this encounter and the mobility a very pleasant experience.

Jadavpur University, though not the biggest of Kolkata, is one of the famous universities of India, where many celebrities studied or used to teach, like Amartya Sen, the 1998 winner of the Nobel Memorial Prize for Economic Sciences. During the last two centuries, the city of Calcutta (today Kolkata) was home to many famous scientists and philosophers from all around the world, such as Sándor Kőrösi Csoma (born in Transylvania), author of the first Tibetan-English dictionary, and Mircea Eliade, one of the best authors on Indian mythology, Hinduism and Buddhism.

Kolkata with its suburbs is today the third largest urban agglomeration of India (after Delhi and Mumbai), the capital of West Bengal, India's most densely populated federal state, and the center of one of the most densely populated regions of the world. The historical Bengal was divided in 1947 between India and Pakistan: the western part went to the Indian Union, while the eastern part became East Pakistan, then in 1971 gained its independence and became the Republic of Bangladesh, with its capital at Dhaka.

2. Historical Background

The large majority of the historical Bengal is situated on a recently created piece of land, on and around the largest fluvial delta of Asia and of the world, divided by the numerous and frequently moving branches of the Ganges and Brahmaputra rivers. This makes it very fragile in front of natural hazards like tropical cyclones and the rising sea level, but at the same time one of the most fertile agricultural areas of the world, given the abundant monsoon rains and the permanent alluvial input of the two great rivers.

The human population of Bengal and of the other provinces of Northeast India preceded the emergence of agriculture by thousands of years. As a matter of fact, due to its geographic position, the delta region of the Ganges/ Brahmaputra rivers, situated between the Himalaya Range and the coast of the Bay of Bengal was inevitably in the way of the first migrants coming from Africa and going to Southeast Asia, whether they belonged to *Homo erectus, Homo heidelbergensis, Homo sapiens* or other species of humanoids not yet discovered and whether they were following the coastal way or the inner „Subhimalayan" route. The fact that no humanoid remains older than a few thousand years were discovered here can be explained on the one hand by the hot, wet climate, unfavourable for the conservation or fossilization of any living creature. On the other, we know that the

level of the Indian Ocean was much lower (by 110-140 m) during the glacial periods compared to today's and there is a rather large continental shelf in the northern part of the Bay of Bengal, this is why the seashore could have been farther by 150-200 km than at present, so the eventually conserved remains of the ancient migrants could now well be under the water.

The patterns of ancient migrations into the Indian subcontinent are not very clear yet, either based on archaeological research or on the results of genetic investigations. However, a lot of stone tools were discovered in different parts of India, dating both from the lower, middle and later Paleolithic industries, so the human presence in the region is quite certain. Recent research claims that when the first modern humans arrived to India about 65000 years ago, the area was already inhabited (though quite sparsely) by archaic humans, but we don't know to which species they belonged. What we know is that by the end of the Pleistocene era (about 11700 years before present) the archaic humans were extinct and once the Holocene began, the modern rhythmical pattern of the Indian monsoon became established (Mythen, S., 2012). About 9000 years ago farming spread from Iran to the Indus valley then, about 5000 years ago, to peninsular India too.

In Bengal the Calcolithic sites are concentrated in the valleys to the west of the Bhagirati River but some settlements began as Neolithic sites and gradually began to use metal. Further to the east, the Assam Neolithic included sites in the Garo Hills and the Cachar area. Neolithic sites have also been found in Bihar and Manipur. Connections with cultures in south-east Asia and eastern Asia were also suggested (Thapar, R., 2002).

About 3800 years ago the population center of South Asia shifted from west to east and 3000 years ago two ancient populations were already formed, one located in North India and the other in South India, technically given the tags Ancestral North Indians (ANI) and Ancestral South Indians (ASI). The ancestry of ASI derives from First Indians (Ancient Ancestral South Indians or AASI) and a population of Iranian farmers coming from the region of the Zagros Mountains. The ancestry of ANI comes from First Indians (AASI), a population related to Iranian farmers and Steppe pastoralists from Central Asia. Almost all present-day populations of Indians are a mixture of ANI and ASI, in different proportions in different regions and communities (Reich, D., 2019).

By the time the last migrants, the "Arya", arrived sometimes after 4000 BP , Indians in the subcontinent were already one of the largest modern human populations on Earth, had already led an agricultural revolution and then an urban revolution leading up to the creation of the largest civilization of its time, and were spearheading an agricultural transition in almost every region, in the north, south, east and west (Joseph, T., 2021).

There is early evidence of rice use in India, dated to around 8000 years ago and by 4000 years ago definitive evidence of domesticated rice, in the form of rice spikelets from the Neolithic site of Magahara in north-eastern India, precisely when *japonica* variety was arriving (according to genetic evidence) from the east. Other East Asian crops, such as apricots, peaches and cannabis also made their way into northern India at this time. These novelties probably arrived in India via networks of exchange connecting the cultures of East and South Asia (Roberts, A., 2017).

The Bengali-speaking people are a conglomerate of several racial elements with different ethnic origins. Four principal racial elements came together to merge as the Bengali ethnic entity. The original settlers in Bengal were of the Austric stock (called "Vedic", "Kobili" or "First Indians") and were present in Bengal well before the Aryan invasions. There were three other major racial elements which also came together to form the Bengalese people: the Dravidians (who were themselves the result of a mixture between First Indians and agriculturalist immigrants from the Zagros Mountains region), the Mongolian tribes (coming from Southeast Asia and speaking Austro-Asian languages or from East Asia and speaking Sino-Tibetan languages) and finally the Aryans. There was substantial intermarriage between the Dravidians from the southwest and the Mongolian races from the north-eastern Himalayas and Chittagong Hills. Later, a relatively small-scale migration of Aryans took place from the west (Sengupta, N., 2012).

The first political formations in North-East India appeared in the age of the Vedas. The intermixing of the Aryans and non-Aryans is illustrated by some legendary references such as the queen of the Asura king, Bali, having five sons: Anga, Vanga, Kalinga, Suhma and Pundra. Each of them founded a kingdom named after him. During most of its early history, Bengal was part of the Maurya and Gupta empires, but its role was secondary. Urban centers and ports in the delta such as Chandraketugarh and Tamralipti became centers of trade, and ships heading for the eastern coast and south India began their voyage from the ports of the delta. During the whole of the Aryan supremacy in North India, Bengal's role was peripheral. The Aryans looked down upon the people living in the east and called them vratyas or kikatas. However, by the time of the epics (5th-4th century BCE), the Aryanization process had gone considerably ahead. The Ramayana includes Vanga as a part of Dasharata's empire and also refers to Suhma (West Bengal) and Pundra (North Bengal). The Mahabharata indicates further advance of Aryan settlements toward the east. The ruler of the Vangas took part in the epic battle of Kurukshetra as an ally of the Kauravas (*idem*).

The first state that unified the different parts of Bengal was the Kingdom of Gauda, founded by King Shashanka in the 7th century CE, with its capital at Karnasubarna in present West Bengal. According to several Indian historians, Shashanka drove the Guptas and other prominent nobles out of Bengal and established his own kingdom most probably around 590 CE. After his death in 625, Gauda was soon divided amongst Harshavardhana and Bhaskarvarmana of Kamarupa. Kamarupa was the first historical Kingdom of Assam, which also included in the 7th and 8th centuries most of East and North Bengal.

At the beginning of the post-classical period (8th century CE) the territory of Bengal was at the core of a larger empire under the Pala Dynasty originating from Kamarupa. At its zenith under emperors Dharmapala and Devapala in the early ninth century, Pala Empire was the dominant power in the northern Indian subcontinent, with its territory stretching across the Gangetic plain to include some parts of northeastern India, Nepal and Bangladesh. In the early eleventh century the Palas reached Varanasi, but this expansion was checked by the advance of the Chola King, Rajendra, whose successful northern campaign threatened the independence of Bengal. The western campaign of the Palas was therefore abandoned and the King, Mahipala, hastily returned to defend Bengal against invasion by the Chola armies. Rajendra's impressive campaign was motivated both by a desire to obtain military glory and to assert a political presence. This was combined with an attempt to monopolize trade with South-East Asia, as well as the maritime trade with China, in which the Palas had been active. But the Buddhist Pala dynasty declined soon after the death of Mahipala and gave way to the Hindu Sena dynasty. Bengal experienced a brief efflorescence under the Senas, but eventually fall prey to the Turkish armies lead by Bakhtiar Kijli (Thapar, R., 2002).

Though present in India since the 7th century, the Muslims were slow to expand on the Ganges Valley and only arrived to East India in the 12th century. The conversion to Islam was made in the beginning mainly by Sufi missionaries. The Muslim population of Bengal, as it emerged, consisted of diverse elements: a significant constituent were the Turk migrants and the Persians of Delhi region – the stubborn Pathans who had settled down in significant numbers during the rise of Sher Shah, offered great resistance to the extension of the Mughal rule and thereafter settled down all over the province merging with local population; the large-scale converts from Buddhism and lower-caste Hindus; and also, a non-negligible number of upper-caste Hindus who embraced Islam for reasons such as attraction of superior government positions (Sengupta, N., 2012).

Bengali can be traced as an independent, identifiable language from only about the tenth century CE, although it traces its lineage to ancient Sanskrit and also to Prakrit and Pali. It belongs to the Indic group of Indo-Aryan or the Aryan

branch of the Indo-European languages. Together with its sister languages, Assamese, Oriya and Maithili, Bengali forms the easternmost language group in South Asia. In the 12th century Sanskrit was still the language of expression for the educated, although Bengali was the spoken language. Gradually, the distance between the newly revived, grammar-ridden Sanskrit and the Bengali vernacular language became greater and greater. The Tibeto-Burman elements which appeared in Bengal through the northeast and the Dravidian and Australoid tribal elements which were indigenous also made their impacts on Bengali language. Slowly but surely, a lingua franca took shape that was common to Bengal, Assam, Nepal, Orissa and North Bihar. Hiuen Tsang's travelogue in the seventh century suggests that there was a common language spoken in Bihar, Bengal and western Assam called Magadhi Abaphramsa. All the eastern languages branched off from the Maghadi. Slowly, Nepali and Oriya dissociated themselves from Bengali dialect of north Bengal and parts of East Bengal, adopted the same alphabet as they spread into the Brahmaputra Valley, and were influenced by Bodo, Tibeto-Burman and Shan elements (idem).

Bengal was conquered by Muhammad Ghurî around 1199, when it became dependent on the Delhi Sultanate, but periodically independent during the weakening of the central power. Between 1200 and 1350, a lot of Dalit (untouchables) converted to Islam, hoping to achieve a better social status and to have access to jobs they were not allowed to practice before, like craftsmen or traders. The conversions continued constantly from 1350 to 1750. The Islamic influence became strong from the beginning of the 15th century. Under the Ilyas Shahi dynasty, the Sultanate of Bengal was installed from 1352 until 1576. Bengal was then a united and powerful Muslim kingdom, interrupted only by the Ganesha dynasty of Hindu origin (1415-1437), then by the short reign of the so-called Abyssinian dynasty which ruled between 1487 and 1493. The later was ousted by the minister Husain shâh Hussain, who founded his own dynasty and extended his rule over parts of Bihar and Assam. After a fight for power between Humâyûnand Sher Shâh Sûrî, Bengal became a province of the Moghul Empire, with a governor having a certain level of autonomy.

The first Europeans who appeared and installed themselves in Bengal were the Portuguese, who seized Goa in 1510 and occupied several strategic centres in the east of the subcontinent, including Chittagong. The Portuguese helped Sultan Ghiyas-ud-din Mahmud Shah in his military engagements against the Afghans and thus got the sultan's permission to construct a fort at Chittagong. In 1537, when Sher Khan laid siege on Gaur, Ghiyas-ud-din Mahmud requested again help from the Portuguese governor of Goa, but he was defeated and killed before the arrival of help from Goa. Later every year Portuguese merchant ships layed anchor at a place called Betore opposite the present

Calcutta Port and did extensive trading. They opened a factory at Satgaon in 1517 and another at Hooghly in 1579-80. But they earned notoriety on account of capturing people from riverine villages and selling them as slaves, their indiscriminate looting and converting people to Christianity by force (*idem*).

Portuguese naval supremacy was soon challenged by the Dutch, who appeared in Bengal by the middle of the 17th century and set up settlements at Hooghly, Cossimbazar, Patna, Dhaka, Surat, Agra and the Coromandel Coast. The main reason for the eclipse of Portuguese power was Portugal's annexation by Spain in 1580. Emperor Shah Jahan turned hostile to the Portuguese and ordered the subedar of Bengal to capture their factory at Hooghly in 1632. After that, the Portuguese only operated as pirates in alliance with Thiri, the king of Arakhan. The Dutch East India Company (VOC) established its factory at Chinsurah near Hooghly in 1653 and subsequently two other subsidiary factories at Patna and Cossimbazar. Soon, the French East India Company set up a factory at Chandernagore near Hooghly. Emperor Farrukj Siyar granted important customs concessions to both the Dutch and the French.

The English East India Company came to Bengal after the Dutch, when they set up the first English factory at Balasore in 1633, then another at Hooghly in 1651, followed by factories in Dhaka, Rajmahal and Malda. Meanwhile, the Danes and the French had also come and the neighbouring river ports of Serampore, Chandernagore, Hooghly and Chinsurah became seats of Danish, French, English and Dutch factories. By the end of the 17th century the Mughal authority declined to the point where it could no longer provide stable conditions for merchants, this is why the European merchants moved to fill the political vacuum in and around their settlements. On the other hand, the rivalries among the nations in Europe came to have a direct impact on the European merchants in Asia through armed conflicts in India too. After the Mughal governor Khasim Khan attacked and occupied Hooghly in 1686, the English decided to move to Sutanuti, better protected by the Hooghly river and where the Calcutta harbour was eventually built. In 1700 Calcutta was administratively separated from Madras and became a new Presidency. In 1717, the Emperor Farruksiyâr, treated by the British surgeon Hamilton, granted important privileges to the latter's compatriots. The English were allowed to take their merchandise to Bengal, to acquire land in Calcutta and to settle down anywhere in the subah (*idem*).

Soon the British East India Company started to break its contract with the Mughal princes. Contrary to agreement, agents started to dabble in duty-free private trade, while tax exemptions were sold to local merchants which deprived the nawab of his revenues. In 1756 the Company refused to obey to the nawab's orders to cease building fortifications, which were driven again by

Anglo-French rivalry. In response, the 21-year-old new nawab Siraj-ud-Daula stormed Fort William and seized the British company's base of Calcutta. The following year Robert Clive, a military officer who had already played a leading role in the Company's territorial acquisitions in Coromandel, was ordered to sail from Madras and recover the city. After accomplishing that goal, Clive exceeded the terms of his authorized mission by conspiring with the nawab's disaffected commander-in-chief to overthrow the unpopular nawab. In June 1757 he defeated the nawab's forces at Plassey (150 kilometers north of Calcutta) and then installed his native co-conspirator as Bengal's new Mughal nawab, who then became in effect a Company puppet. After its troops defeated a coalition of Mughal armies at Buxor (13 km west of Patna) in 1764, the East India Company tightened its de facto authority in Bengal. In the following year Clive personally met the Mughal emperor Shâh Âlam II, who signed the so-called Diwami treaty of Bengal (August 1765), formally giving Company officers the right to assess and collect the province's revenue (Hunt, T., 2015, Eaton, R. M., 2020).

In 1769 the British restricted the Bengalis' rights of trading for several products, provoking the terrible Bengal famine of 1770 which killed around 10 million people, a third of the population.

Another development of catastrophic proportions that hit British India was the great anti-British uprising of 1857, the so-called sepoy mutiny, also called India's first war of independence. The direct cause of the mutiny was said to be the compulsory use of bullets that were said to contain both cow and pig fat, calculated to humiliate the religious feelings of both Hindus and Muslims. The real reason was a variety of economic, social and political factors. The introduction of some modern reforms had antagonized the orthodox sections, both Hindu and Muslim. The revolt started in Bengal at Baharampur (Murshidabad) and thereafter at Barrackpore near Calcutta. At Barrackpore, a sepoy named Mangal Pandey protested against the use of cartridges and attacked an English officer (29 March1857), but thereafter Bengal was quiet. After such a massive uprising the British government felt it unwise to leave the governance of India to a commercial company and decided to assume direct power of governance. Under an act passed by the Parliament on 2 August 1858 the British Crown took over the Indian empire from East India Company. Queen Victoria was proclaimed the Empress of India. The mutiny did not have any impact on Bengal except for some isolated incidents at Chittagong on 18 November 1857 and at Dhaka on 22 November. The people of Bengal, both Hindus and Muslims, by and large sided with the British rulers. The educated Bengalis treated the revolt as only a sepoy mutiny and not as a nationalist uprising or a freedom movement. The contemporary press in Bengal, both English and Bengali, supported the British and opposed the rebels. Bengali public opinion had too much vested interest in

the continuance of the British rule, its liberal tendencies and the opportunities it had opened up for professional classes, and did not therefore fancy the prospect of a return to the medieval order in the form of restoration of the Mughal Empire. In this respect Bengal stood along with Punjab, western India and southern India that had also opposed the great revolt (Sengupta, N., 2012). Bengali Brahmins and Kayasthas set off to serve the Raj "upcountry" in government offices around Orissa, Bihar, The United Provinces, Punjab, Rajputana and Bombay; they were also engaged in their thousands as surgeons, physicians, postmasters, businessmen and contractors. By the beginning of the twentieth century, there were so many Bengali Hindus in administrative positions in Assam that Bengali had become a medium of instruction in local schools (Chatterji, J., 2024).

In 1876 Assam was separated from Bengal and formed a separate province under a chief commissioner. But three predominantly Bengali-speaking districts, Sylhet, Cachar and Goalpara, were included in Assam, the first instance of the vivisection of the Bengali-speaking territory. The censuses revealed that Muslims made up just over 20% of the population of India, confirming them to be a demographic minority as a whole. Two provinces alone bucked the trend: Bengal, India's largest province in the east, and the Punjab in the west. Between 1905 and 1911 a first attempt to divide Bengal into two was made under Viceroy Lord Curzon: Bengal proper and the province of Eastern Bengal and Assam where the All India Muslim League was founded. By cutting Bengal into two, officials claimed, the „backward" province of Assam would, together with eastern Bengal, have a more efficient administration. But behind the scenes, they were conscious that Bengal was home to some of the Raj's most vocal and articulate critics, the Hindu elites or *bhadralok* (gentlefolk). A partition of Bengal would thus neutralise this „thorn in the side of government", but it proved to be one of Cuzon's biggest political blunders. Then, in 1911, the partition of Bengal was revoked, to the consternation of the Muslims of East Bengal who had hoped to benefit from having a province of their own (Sengupta, N., 2012). In the same year, the capital of British India was moved from Calcutta to New Delhi, geographically better positioned and former seat of the Mughal emperors.

The First World War had created favourable conditions for the revolutionaries to wage an armed struggle with the help of arms obtained from the Germans. The Bengal revolutionaries, with the support of Indians who were resident in Germany, established contact with the German government and were assured of supply of both arms and funds. Indian revolutionaries in the USA also promised support. A German ship was to come to the Bay of Bengal and unload its cargo of arms at an undisclosed point in the Sundarbans or on the Orissa coast. The whole scheme of an armed uprising was finalized at a meeting of the revolutionaries. Naren Bhattacharya went to Batavia (Jakarta) to negotiate

with the Germans and to receive arms. The German ship *Maverick* was expected to arrive at Balasore coast with its load of arms. Coinciding with this, the revolutionaries had planned to blow up a number of key bridges on the three railway routes branching out from Calcutta, thereby preventing military movement to Bengal from outside; organize a liberation army in East Bengal which would first free East Bengal and then move on to Calcutta; and occupy the armouries in and around Calcutta, and then occupy Fort William. But the plan proved to be impractical, seriously flawed and foredoomed. The *Maverick* never arrived at the mouth of the Mahanadi. The plan was betrayed to the police. Thus ended one of the most heroic episodes in the history of the armed revolutionary movement in Bengal. Naren Bhattacharya went to the Soviet Union after the Soviet Revolution and, under a pseudonym, M.N. Roy, became an associate of Lenin and a leader of international communism (*idem*).

Bengal played a major role in the Indian independence movement, in which revolutionary groups were dominant. While the Indian National Congress and the Muslim League were vying with each other in showing loyalty to the British Raj during the war, the Bengal revolutionaries carried on relentless underground efforts to destabilize colonial rule. Unfortunately, there were intestine conflicts from the very beginning within the movement. The provincial Congress of Bengal, representing mainly the Hindu *bhadralok* elite, nearly split away from the national Congress as firebrands like Subhas Chandra Bose demanded direct action against the moderates dominating the Congress. In 1938, as Congress pressure on the princely states mounted and as Congress governments in the provinces rejected Muslim overtures for power sharing, Bengal's governing Muslim party joined the Muslim League of Mohammad Ali Jinnah, which was claiming to represent the majority of Muslims in India (Keay, J., 2010).

The outbreak of the Second World War brought along with the British declaring war on Germany a bland proclamation by Viceroy Lord Linlithgow that India was at war with Germany. No Indian leader had been consulted and India was dragged to a war with a country that was not a direct threat to it. Gandhi's initial hunch was to unconditionally support Britain. Nehru, on somewhat different emotional bent, wanted India to play its full part and commit all its resources to the 'struggle for a new order' by which he could have meant the abolition of both Nazism and colonialism. Subhas Chandra Bose, still an important Congress leader, favoured that India should utilize the international situation, including the British Empire's discomfiture, to press for freedom. Another step Subhas took to consolidate Muslim support for him in Calcutta was leading an agitation for removal of the Holwell monument at Dalhousie Square in Calcutta. His selecting this issue for launching a sustained agitation confused the government which, at that time, was at the point of arresting him for his anti-British seditious

speeches. Subhas showed deep strategic sense; the agitation united Muslims and Hindus. It inflamed opinion against British rule, so on 2 July 1940, Subhas was arrested but soon he made one of the most daring escapes in history. At midnight on 16 January 1941, he left home in a car dressed as an upcountry bearded Muslim in a long sherwani, was driven by his nephew Sisir Bose to Gomoh and boarded a long-distance train to Peshawar. He was traveling as Mohammed Ziauddin, an insurance inspector working with the Empire of India Life Insurance Company. From Peshawar he made his way to Kabul through the Khyber Pass accompanied by one Uttam Malhotra, reaching there on 27 January 1941. He got in touch with the German ambassador, Dr. Pilger, who was not particularly helpful. After a lot of delicate negotiations through the Italian ambassador, the Germans agreed to let him proceed to Berlin to plan a German-Italian overture to Indian soldiers. On 18 March Subhas left with a fake Italian passport arranged by Pietro Quaroni, the Italian ambassador, for the Soviet Union, reaching Moscow by train via Bokhara and Samarkand. From Moscow he flew to Berlin on 2 April 1941. He soon submitted to the German foreign ministry a memorandum, the first among several with the title *A Plan for Cooperation between the Axis Powers and India*. In this, he proposed the setting up of a Free India government in exile in Berlin. On 27 April, he had a meeting with the German Foreign Minister Von Ribbentrop at Hotel Imperial in Vienna and later with Adolf Hitler himself, who didn't show too much interest in helping him. On 18 January 1943 Subhas Bose boarded a German U-boat at Kiel on another of his daredevil missions. Off the coast of Madagascar Subhas and Abid Hussain were shifted to a Japanese submarine which took them to Singapore to complete their ninety-three-day odyssey. From Singapore they flew to Tokyo where Subhas had a meeting with the Japanese prime minister Tojo on 19 June 1943. The Japanese proved much more positive than the Germans. On 18 June, Tojo pledged before the Japanese parliament his government's support to Indian freedom (*idem*).

The Japanese invasion from Burma started on 7-8 March 1944, when General Mutaguchi's forces, accompanied by the 3,000-strong Subhas Brigade of the INA commanded by LtCol. Shah Nawaz Khan, crossed the Chindwin River into the Indian border at Moirang and attacked Imphal in Manipur and Kohima in Assam. After fierce fighting they were close to success by the end of March. But they were beaten to it by the early monsoon rains that bogged down the Japanese and the INA forces. With the supply line from Burma cut off by rains they retreated to Burma. Meanwhile, the Gandhi and Azad Brigades led by Colonel Mohammed Kiani took part in an assault on Imphal in which they suffered heavy casualties. The besieged and dug-in Allied forces both at Imphal and Kohima held on, and what had appeared as a sure victory for the Japanese became a major defeat, indeed the turning point in the war in Southeast Asia.

By July 1944, the Japanese and the INA forces were back on the Chindwin line. Subhas's great expectations remained unfulfilled. Even his experiment of sending INA personnel by submarine to Baluchistan and Bengal came a cropper, as they were apprehended. But Subhas Bose, undaunted by all military reverses, went on broadcasting to the Indian people weekly, assuring them that the INA was determined to march into India 'as soon as all preparations were complete' and exhorting the people in powerful language to rise up against the British. On 17 August, with seven of his staff, Subhas took off from Saigon in Vietnam on his way to Manchuria presumably with the Soviet Union as his eventual destination. The intrepid rebel was now planning an alliance with the Soviet Union against British Raj. But he could not anticipate that the Soviet Union would declare war on Japan just before Japan's surrender, upsetting his calculation. After refueling at Taihoku airfield in Taiwan, as the Japanese bomber took off, it caught fire and crash-landed. According to eyewitnesses, Subhas survived the crash, although badly burnt, and died in a military hospital shortly afterwards (*idem*).

India's participation at World War II was unfortunately full of much more serious consequences than Subhas Bose's adventures: more than 2.5 million soldiers were mobilized and fought on the allied side not only in Asia, but in Europe and North Africa too. Over 87,000 Indian troops and 3 million civilians died in World War II. India was also used as a base for American operations in support of China in the China-Burma-India Theater. Most of the Indian casualties were caused by the last great famine in Bengal of 1942-1943, set on by the sudden withdrawal of Burmese rice from the Indian market. Churchill's callous failure to feed India's subjects precipitated the end of the empire. He pretended it wasn't happening. For him, feeding Britain and fighting the war was the focus, and he would not be deflected from it, so he declined even to accept an offer of 100000 tons of rice for India. Botched if well-meaning official policy in Bengal compounded the situation. Indians were not blameless either: some Indian traders sought to manipulate the grain prices to keep them high and they did so by hoarding grain. But South Asians still blame imperial lack of accountability and the callousness of racism for the episode (Chatterji, J., 2024).

But the most serious consequence of the war for India was its final drift towards Partition. Winning the war was the top priority for lord Linlithgow too who couldn't confront the Muslim League at a time when Congress was already refusing to co-operate with the war effort. It could in fact be argued that it was Congress which badly miscalculated; by withholding its support for the war, it practically obliged the British to play along with the Pakistan idea. At the same time, the arrest of the Congress leaders meant that the party was unable to direct the movement for independence and it would be singularly ill-prepared for the post-war endgame. The Muslim League on the other hand, unchallenged

by either the British or the Congress, continued to proselytise, organise and mobilise. Soon it became glaringly obvious that Jinnah would accept, and most Muslims would settle for, nothing short of a Pakistan to which sovereignty and power were directly transferred by the British. Lord Mountbatten, the last viceroy of British India, nevertheless pursued a proposal whereby power would be transferred to the provinces and the princely states, who might then choose whether to join India, Pakistan or neither. This was quite unacceptable for Javaharlal Nehru, who foresaw a „Balkanisation" of India. His protestations produced some hasty British revision and let Mountbatten to accept Partition as inevitable (Keay, J., 2010).

On 18 July 1947, the Indian Independence Act 1947 of the Parliament of the United Kingdom stipulated that British rule in India would come to an end just one month later, on 15 August 1947. The Act also stipulated the partition of the Presidencies and provinces of British India into two new sovereign dominions: India and Pakistan. Muslim-majority British provinces in the northwest were to become the foundation of Pakistan. The provinces of Baluchistan (91.8% Muslim before partition) and Sindh (72.7%) and North-West Frontier Province became entirely Pakistani territory. However, two provinces did not have an overwhelming Muslim majority: Punjab in the northwest (55.7% Muslim) and Bengal in the northeast (54.4% Muslim). After elaborate discussions, these two provinces ended up being partitioned between India and Pakistan (Read, A., Fisher, D., 1998).

The eastern part of Bengal was thus included into the new state of Pakistan, where it was soon called East Pakistan because of the opposition of West Pakistan's leaders to Bengali nationalism. The union between the two parts of the new Muslim state of South Asia presented serious problems from the beginning, the western Pakistanis considering East Pakistan just a remote colony good for exploitation, while intentionally failing to provide it with resources for development. Besides the geographic distance (1300 km), there was an essential cultural difference between the two parts of Pakistan, having practically nothing in common except religion. They even tried to impose Urdu as official language in East Pakistan, while Bengali is the native language of the whole population.

The conflict between West and East Pakistan finally exploded in 1971, when the government of president Yahya Khan refused to admit the recent election results and name Sheikh Mujibur Rahman prime minister. Soon an invasion of East Pakistan by western troops followed, trying to submit by force the eastern province. The aggression of Pakistan in northwestern India in December 1971 finally gave the Union the opportunity to directly intervene in East Bengal, where a guerilla war was being fought for months by the local resistance. In just

a couple of days, the Pakistani troops were surrounded and forced to surrender to the Indian army, which put an end to the war of independence and brought international recognition for the new Republic of Bangladesh.

3. Conclusion. The Weight of Present Day Bengal

South Asia is one of the most densely populated regions of the world (with an average density of 362.3 inhabitants/km^2), its total population (2.04 billion) representing 25.1% of the world population (2024 estimate), so every fourth human on the planet lives currently in South Asia, while its surface is only 3.5% of the total land area on Earth. The Indian Union is by far on the first place among the nations of South Asia, with its 1450 million inhabitants, representing 71.1%, and is followed by Pakistan (251.2 M, 12.3%) and Bangladesh (173.5 M, 8.5%). This means that the countries of former British India have almost 92% of the total population of South Asia, while the rest live in Afghanistan, Nepal, Sri Lanka, Bhutan and the Maldives.

The state of West Bengal, with its total population of 103 million (2023), is one of the most densely populated in India (1160 inhabitants/km^2) and represents 7.1% of the Union's total population, while its total nominal GDP was 6.2% of India's total GDP in 2023, so the state's weight in the Union's economy is slightly under its populations'. On the other hand, West Bengal and Bangladesh together would presently number about 276.5 million inhabitants, which is 13.8% of South Asia. The total GDP of Bangladesh was $451.5billion in 2023 which, combined with West Bengal's $210 billion, would weigh about 13.1% of South Asia's total. However, there is a significant difference between Bangladesh and West Bengal from the GDP/capita point of view: while the former showed $2650/capita nominal in 2024, the latter had only $1700/capita (source: Wikipedia).

The development of West Bengal wasn't thus following the growth of other Indian states in the recent couple of decades, remaining behind 23 other states, in spite of its recent spectacular growth rate (11% in 2023/24). At the same time, Bengal's cultural influence exceeds largely the economic weight of the two historical parts of Bengal, Bengali language being widely spoken not only in the neighboring states of Assam, Bihar and Odisha, but also by a large Indian diaspora throughout the world: while Bengali is presently the second most spoken first language of India (after Hindi) and the fifth largest language of the world (after Mandarin Chinese, Spanish, English and Hindi). It is also the second most spoken in the United Kingdom after English, not to mention the other diasporas on five continents.

Due to its accelerated development in the last couple of decades, India has become not only the most populated country in the world, but also the fifth largest economy, emerging as a regional geopolitical power and a key member of the BRICS community. It is also the largest democracy of the world, though signs of extremist Hindu nationalism and a certain drift towards autocratic government are frequently showing nowadays. Its military power and nuclear deterrence capability might be a counterweight for China's ever-increasing dominance in the Far East, but the greatest danger is still coming from its western neighbour Pakistan, also a nuclear power and affected by ethnic conflicts, chronic economic crises, corruption and political instability. On the other hand, the relation with Bangladesh is quite normal and improving, making a stable framework for further development of both parts of Bengal, although overpopulation, environmental issues and natural hazards still pose serious problems in the region.

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In Memoriam:
† ACAD. ALEXANDRU UNGUREANU
(1941 - 2024)

Acad. Alexandru UNGUREANU
(1941- 2024)
Sursa:
https://acad.ro/acad_membri/membri/Ungureanu_Alexandru.html

La 19 iulie 2024 Geografia românească a pierdut pe unul dintre cei mai străluciţi reprezentanţi ai ei – academicianul Alexandru Ungureanu.

Nu vom respecta şablonul clasic pentru a întocmi un text panegiric, deoarece sunt alţii în măsură să o facă, ci dorim să aducem la lumină personalitatea şi preocupările cărturarului ieşean reflectate în corespondenţa purtată cu regretatul profesor, Grigor P. Pop.

Facem această legătură deoarece mentorul nostru cu diverse ocazii, afirma în repetate rânduri că în lumea geografică românească are doar doi prieteni adevăraţi: academicianul Alexandru Ungureanu şi prof. univ. dr. Ioan Ianoş.

Este vorba despre un corpus de 12 scrisori inedite, păstrate într-o stare excelentă, cu plicurile lor aferente, timbrate corespunzător, şi care poartă ştampilele poştelor expeditoare şi destinatare. Opt sunt scrise de mână, iar restul dactilografiate, pe care le-am primit cu mare bucurie în urmă cu câţiva ani de la profesorul Alexandru A. Păcurar, căruia şi pe această cale îi mulţumim din suflet încă o dată.

Ele fac parte dintr-un teanc de alte epistole, primite de profesorul Pop de la diverse personalităţi, destinatarul învelindu-le atent între copertele unui dosar legat cu sfoară subţire, unde sub semnătura Domniei Sale a menţionat următoarele: *„Scrisori primite* (*în general*)*, în perioada de dinainte de anul 2001”*, adică până la pensionare.

Iniţial, această precizare ne-ar duce cu gândul că ciclul de corespondenţă cu academicianul Ungureanu s-ar fi limitat doar la câteva scrisori, situaţie care nu corespunde adevărului, deoarece este mai mult decât evident faptul că

legăturile dintre ei au continuat şi pe mai departe, colaborarea permanetizând fără echivoc relaţiile instituţionale dintre Şcoala Geografică Clujeană şi cea Ieşeană.

Oricine le lecturează va reverbera instantaneu la prietenia sinceră dintre cei doi mari geografi, pe care o sesizăm încă de la debutul fiecărei scrisori, prin folosirea candidă şi elegantă a formulei de adresare: *„Dragă şi mult stimate domnule Pop"*. Niciodată textul nu se încheia brusc, ci cu aceeaşi reverenţă, academicianul Alexandru Ungureanu transmitea mereu salutul şi urările sale de bine tuturor membrilor familiei Pop.

Menţionându-se în scrisori şi de soţiile celor doi magiştri, răposate şi ele, precizăm că ambele au slujit şcoala, Doamna Mărioara Pop a fost o distinsă profesoară de Istorie, în preuniversitar, iar prof. univ. dr. emerit Irina-Brânduşa Ungureanu a pus bazele şcolii ieşene de Geografie a Mediului. Ambele partenere de viaţă şi-au sprijinit soţii în activitatea universitară, cuplurile fiind şi un model de conduită familială, de unitate şi seriozitate.

Grosul informaţiilor se referă însă la cele două componente fundamentale avute în vedere de un cadru universitar responsabil şi preocupat de domeniul ştiinţei pe care îl reprezintă: activitatea didactică şi cercetarea.

În prima categorie sunt incluse informaţii legate cu precădere de grija continuă de publicare a suportului de curs, care necesita o zbatere continuă şi la timp a autorului ieşean, pentru a fi inclus în planul editorial al tipografiei, secondată de neliniştea determinată de restrângerea secţiei de Geografie, aidoma celei de Geologie, şi chiar de comprimare a postului, urmată de complexitatea rezolvării problemelor organizatorice pentru aplicaţiile de teren. Devine superfluă analiza rostului participării aberante a cadrelor universitare, care trebuiau să-şi însoţească studenţii la muncile agricole...

Peste toate acestea s-a suprapus însă situaţia hidoasă din ultimii ani ai comunismului, cu bine-cunoscuta penurie de alimente şi lipsa căldurii din instituţii şi apartamente. Chiar una dintre scrisori a fost întocmită în acea perioadă de condiţii vitrege, când mâinile academicianului nu mai vroiau să-l *„asculte"*, fiindu-i complet îngheţate, iar acasă stăteau *„...mai mult ascunşi sub plăpumi"*. Astăzi pare de domeniul ştiinţifico-fantastic când noi, tinerii, auzim la ce sacrificii a fost supusă populaţia pentru achitarea forţată a datoriei externe a României! Nici măcar avansarea pe post nu era privită cu bucurie, care trebuia să încline balanţa în sensul optimist şi pozitiv al celui vizat, deoarece presupunea o trecere printr-un alt şir lung de umilinţe şi decepţii profesionale...

Cât priveşte partea de cercetare ştiinţifică, observăm mâhnirea şi neputinţa reprezentantului Geografiei ieşene de a face ceva mai mult în rezolvarea omniprezentelor probleme de subfinanţare pentru asigurarea tirajului corespunzător al celor două publicaţii ştiinţifice de la Alma Mater Iassiensis – *Analele Ştiinţifice ale Universităţii „Alexandru Ioan Cuza" din Iaşi – Seria Geografie* şi

Lucrările Seminarului Geografic „Dimitrie Cantemir”, care au ajuns în anumiți ani la imposibilitatea de a mai fi tipărite. Depășind toate aceste neajunsuri, când se iveau condițiile de favorabilitate, academicianul Ungureanu nu uita niciodată să le ofere cu colegialitate și dragoste profesorului de la Cluj, pentru a observa care erau direcțiile de cercetare abordate și de ceilalți colegii ai săi.

Pe lângă faptul că am cunoscut personal capacitatea de lucru și puterea de cuprindere în munca științifică a profesorului Pop, cu care a fost înzestrat întreaga viață, colegul și prietenul nostru – Adrian Niță l-a numit pe bună dreptate *„model academic și uman, călăuzitor al tinerilor geografi”* (a se vedea volumul aniversar *Prof. univ. dr. Grigor P. Pop la opt decenii de viață și activitate: 1933-2013*, Edit. Presa Universitară Clujeană, 2013, pp. 135-138), calitate care răzbate și în scrisoarea din 5 aprilie 1991, când expeditorul îl roagă cu multă sfială pe destinatar să-i comunice situația „la zi” a minelor de cărbuni din bazinul Almașului și al Crișului Repede, respectiv capacitatea noilor amenajări hidroenergetice de pe cursul Crișului Repede, informații pe care să le transmită apoi la curs studenților săi.

Tot cu referire la aceeași scrisoare, mai trebuie clarificat și numele celor trei conducători de doctorat geografi de la Iași, decedați în anul 1990. În ordine cronologică aceștia sunt următorii: prof. univ. dr. doc. Ion Gugiuman, prof. univ. dr. doc. Constantin Martiniuc și prof. univ. dr. Vasile Băcăuanu (Ioan Donisă, *File din istoria Geografiei Ieșene: 110 ani de învățământ geografic universitar ieșean* (*1904-2014*), Edit. Stef, Iași, p. 172).

În final, cu mici intervenții de tehnoredactare pe textul original, reproducem pentru viitorime scrisorile în integralitatea lor, iar noi ca buni creștini îl rugăm pe Dumnezeu să-i aibă în paza Sa veșnică, de-a dreapta Sa pentru totdeauna, iar sufletele lor să le așeze în corturile drepților.

Sit tibi terra levis!

George-Bogdan TOFAN

Școala de Studii Avansate a Academiei Române, Institutul de Istorie „George Barițiu” Cluj-Napoca, Școala Doctorală Istorie și Arheologie

1

Iaşi, 1. XI. 1978

Dragă şi mult stimate domnule Pop,

Mi-a părut foarte bine că am aflat din nou câte ceva de la Dvs., deoarece din păcate în ultimul timp corespondenţa dintre noi s-a mai rărit.

Îmi pare şi mai bine pentru faptul că aţi rezolvat problema postului în Cluj, adică revenind la Universitate, unde de drept meritaţi să lucraţi în continuare. Oricum perioada de şedere la Oradea a fost o perioadă fructuoasă, concretizată în revistă şi în lucrările publicate.

Aşa cum am scris şi în scrisoarea precedentă, va fi o mare plăcere să fac un referat al lucrării Dvs. După cum văd, aveţi trecere la doamnele de la Editura Ştiinţifică; aveam şi noi acolo două lucrări – *Podişul Moldovei* (depus din mai) şi *Europa şi Asia* (înapoiat pentru refacere). Din planul editorial văd însă că am pierit şi am lucrat probabil degeaba. Nu le-aţi putea întreba dacă mai au vreo şansă?

Am trecut astă vară cu familia prin Cluj, dar am stat numai 2 ore, între două trenuri, venind de la Păltiniş şi mergând la Iaşi. Nu mi-a fost posibil să ne întâlnim, deoarece se pare că eraţi cu toţii la Iernut (era dimineaţa şi n-a răspuns nimeni la telefon).

Oricum anul acesta universitar ne va aduce în mod sigur o întâlnire. Am sarcina de a conduce aplicaţia practică de itinerar a anului I Geografie, ori, cum la noi s-a stabilit un program cu excursii fixe, pentru acoperirea întregii ţări, îmi revin Munţii Apuseni şi zona înconjurătoare. Excursia va fi cam de la 15 la 24 iunie 1979, însă, deşi eu am mai fost în Munţii Apuseni, nici pe departe nu-i cunosc aşa de bine ca Dvs., aşa că vin cu rugămintea de a-mi sugera un traseu care să fie cât mai folositor pentru nişte studenţi începători.

Vreau să vă transmit de la profesorul Şandru foarte bunele impresii pe care le-au făcut articolele dvs. pentru *Enciclopedia Română* (vol. I) la Bucureşti; ele ne-au fost date acum de model şi nouă, cei care am fost uitaţi la volumul I, dar am fost cooptaţi pentru o parte din Moldova şi noi cei de la Iaşi. Este un nou exemplu de modul cum suntem noi trataţi la Bucureşti.

În încheiere, vreau să cred că lucrurile vor merge ceva mai bine, păstrându-mi optimismul, dar deocamdată perspectivele sunt foarte neclare.

Multe mulţumiri pentru urările transmise familiei. Sper că şi copiii Dvs., precum şi Dna Pop se află în cea mai bună sănătate şi vă rog să le transmiteţi cele mai sincere şi respectuoase urări de bine din partea noastră.

În speranţa unei viitoare întâlniri,

rămân al Dvs.
Sandu Ungureanu

2

Iaşi, 22 mai 1979

Dragă şi mult stimate domnule Pop,

Scuzele mele pentru faptul de a nu vă fi scris imediat după convorbirea noastră telefonică, însă pe atunci nu aveam nici măcar în principiu acceptul propriei noastre contabilităţi, cu atât mai puţin pe acela al O.[ficiului] J.[udeţean] [de] T.[urism], aşa încât a trebuit mai întâi să mai clarific nişte forme iniţiale, deşi nici acum nu sunt, nici pe departe, edificat asupra multor aspecte ale excursiei noastre.

Programul, în linii mari, al excursiei ar arăta cam astfel:

-15 iunie Iaşi – Borsec – Topliţa – Cluj (cazare şi masă prin O.[ficiul] J.[udeţean] [de] T.[urism] Cluj).

-16 iunie Vizitarea Clujului (cazare şi cină tot aici, prin O.[ficiul] J.[udeţean] [de] T.[urism].

-17 iunie Cluj-Ciucea-Oradea, inclusiv vizitarea Oradiei (cazare şi masă la Oradea, prin O.[ficiul] J.[udeţean] [de] T.[urism]).

-18 iunie Oradea – Băile Felix – peştera Meziad – Beiuş – Stâna de Vale (cină şi cazare la Stâna de Vale).

-19 iunie Stâna de Vale – Beiuş – Padiş (cazare la Padiş).

-20 iunie Platoul carstic Padiş (cazare la Padiş).

-21 iunie Padiş – Beiuş – Dr. Petru Groza – peştera Scărişoara (cazare la campingul Arieşeni).

-22 iunie Arieşeni – Câmpeni – Abrud – Bucium – Detunate – Bucium – Brad (cazare la Brad).

-23 iunie Vizitarea Bradului (cu muzeul aurului) – Deva – Alba Iulia (cina şi cazare la Alba Iulia).

-24 iunie Alba Iulia – Blaj -Târnăveni – Sovata – Lacu Roşu – Cheile Bizacului – Pângăraţi – Piatra Neamţ – Roman – Iaşi.

După cum vedeţi, am cerut prin O.[ficiul] J.[udeţean] [de] T.[urism] cazare la Cluj (2 nopţi) şi la Oradea, dar mi-e frică să nu avem greutăţi, cum am mai avut, când nu s-a găsit spaţiu de cazare la un preţ acceptabil pentru studenţi. De aceea tare bine ar fi să avem o rezervă undeva. Grupul nostru nu este mare, are doar 27 persoane (inclusiv şoferul) din care 15 bărbaţi şi 12 femei. Dacă aţi putea să mergeţi, măcar un picuţ, cu noi, v-am rămâne îndatoraţi din inimă.

În altă ordine de idei, doamna Păunescu, deşi a trecut exact o săptămână de când am fost la Editură, încă nu mi-a trimis manuscrisul Dvs., şi mă tem foarte mult că nu am să am timp să-l refer până la plecarea în excursie, aşa cum

am promis. Nu i-aţi putea da un telefon, rugând-o să urgenteze un pic trimiterea lucrării? Eu îmi planificasem două săptămâni pentru citire şi o săptămână pentru scrierea referatului, dar timpul a şi zburat în mare parte.

Ce mai este nou pe la Cluj? Noi continuăm să ne restrângem. Ieşind profesorul Şandru la pensie, cu chiu cu vai s-au cârpit totuşi nişte norme pentru ceilalţi, dar suntem tare primejduiţi la Studii Economice şi, prin dispariţia treptată a studiilor fără frecvenţă, anii viitori ne mai dispare încă o normă – o normă şi jumătate.

Sper să ne întâlnim în curând şi atunci vom avea prilejul să mai stăm puţin de vorbă. Până atunci vă rog să transmiteţi cele mai respectuoase sărutări de mâini doamnei Pop, multă sănătate şi mult succes la învăţătură tineretului din familie (nu mai pot spune copii, după vocea atât de serioasă pe care am auzit-o la telefon).

Cu cele mai bune urări şi multe mulţumiri anticipate,

(ss) *Al. Ungureanu*

3

Iaşi, 2 iunie 1979

Dragă şi mult stimate domnule Pop,

Am primit ieri scrisoarea Dvs. şi mă grăbesc să vă răspund, trimiţându-vă alăturat cele 2 adrese către Universitatea din Cluj şi Institutul din Oradea. Vă mulţumesc foarte mult pentru grija pe care o aveţi pentru noi şi sperăm ca lucrurile să se rezolve în mod pozitiv. Noi am făcut şi o încercare prin O.[rganizaţia] S.[tudenţilor] [pentru] T.[urismul] [Românesc] dar nu ni s-a dat cazare la Cluj şi Oradea; foarte problematică este şi cazarea la Padiş, dar sperăm să ne putem descurca.

Tot ieri am primit de la Bucureşti şi manuscrisul Dvs., deci la 16 zile după data la care mi se spusese că-l vor trimite cei de la editură. Din cauza acestei întârzieri îmi va fi imposibil să-l pot citi în întregime până la plecarea din Iaşi, deşi voi lucra cât voi putea. Dna Păunescu spusese că ea a lucrat pe manuscris, dar în realitate nu este nimic pe el, se pare că este exact aşa cum l-aţi trimis.

Eu l-am răsfoit puţin şi prima impresie este cea a unei lucrări frumoase şi bogate, foarte necesară în actuala lipsă de lucrări economico-geografice. Sper să mai putem discuta despre lucrare la Cluj, când voi veni acolo, peste două săptămâni.

Telefonul meu este neschimbat, dar, pe de altă parte, şi eu am încercat în mai multe rânduri să iau legătura cu Dvs., fără să reuşesc; se pare că este ceva în neregulă pe legătura telefonică Iaşi-Cluj.

Sărutări de mâini doamnei Pop şi calde salutări celor mai tineri din familie.

Cu deosebit respect,
Al Dvs.
(ss) *Al. Ungureanu*

4

Iaşi, 5 octombrie 1979

Dragă şi mult stimate domnule Pop,

Sosit alaltăieri de la Măxineni – Brăila, unde am cules porumb cu studenţii de anul I, am găsit, în sfârşit, apărute *„Analele"* noastre, bucurându-mă că vă pot trimite un exemplar, ca de obicei. Revista apare mai departe semioficial şi ne face plăcere să o distribuim măcar la cunoscuţi, ca să o mai scoatem din anonimat.

În timpul verii am lucrat la refacerea *„Podişului Moldovei"*, pe care l-am depus în termen la Editură. Sperăm să fie pe un drum bun. Acum lucrez la *Tratat*, la două contracte, la *„Asia"* şi la cursul de *„Resurse naturale"*, pe care aş dori să-l litografiez pe plan local, împreună cu prietenul nostru, Nimigeanu.

Cursurile nu au început decât cu anul III, ceilalţi ani fiind încă în practică sau la munci agricole. La noi însă s-au declanşat mari frământări, prin desfiinţarea I.[nstitutului] I.[nterregional] [de] P.[erfecţionare] [a] C.[adrelor] D.[idactice], de unde au rămas două persoane fără normă, dar care doresc să intre în catedra noastră, mai ales conf. Iulia Văcărașu, despre care aţi auzit că a vrut să vină şi la Cluj-Napoca în două rânduri. Cum catedra s-a scindat, o parte ţinând cu tânăra conducere a catedrei, o alta cu această tov.[arăşă] Văcărașu, ajungându-se la discuţii şi neînţelegeri din ce în ce mai aspre. Nu ştiu unde se va ajunge pe acest făgaş, dar este o atmosferă imposibilă.

Cum s-a rezolvat la Dvs. această problemă a cadrelor de la I.[nstitutul] I.[nterregional] [de] P.[erfecţionare] [a] C.[adrelor] D.[idactice]? Sper că nu s-a ajuns la astfel de contradicţii.

Noi am făcut un memoriu pentru revenire la o secţie cu profil pe geografie, bazându-ne şi pe sprijinul celorlalte secţii asemănătoare din ţară (Cluj-Napoca şi Bucureşti). Nu ştiu dacă avem vreo şansă, dar actuala structură este cu totul nepotrivită unui învăţământ de calitate.

Ce planuri mai aveţi de viitor? Ce mai face familia Pop, împreună cu cel mai tânăr şi foarte simpatic reprezentant?

Vă doresc mult succes în continuare în munca Dvs.

Cele mai respectuoase sărutări de mâini Doamnei Pop.

Al Dvs. sincer,
(ss) *Al. Ungureanu*

5

Iaşi, 26 sept.[embrie] 1981

Dragă şi mult stimate domnule Pop,

A trecut cam mult timp de când nu am mai dat vreun semn de viaţă. E vina exclusiv a mea, mai ales că nici măcar nu am mulţumit aşa cum se cuvine la frumoasa recenzie pe care aţi publicat-o în *„Studia"*, referitor la *„Oraşele din Moldova"*. Înţeleg foarte bine situaţia revistei Dvs., pentru că cea a alei noastre este poate şi mai rea – nici măcar nu mai pot pune mâna pe vreun număr pentru mine, decum să mai pot trimite şi mai departe.

În plic separat vă trimit cursul de *„Geografie a resurselor naturale"*, care a apărut şi el după multe tergiversări, dar mai bine decât deloc.

Anul acesta a fost destul de frământat – am mult de lucru deoarece mi s-a schimbat norma, trebuind să muncesc suplimentar la un curs nou (*Podişurile şi Câmpiile României*), cedând în schimb colegului Chiriac cursul de *Geografie economică pe ramuri*, din necesităţi de normare. În rest preocupări mai mult materiale (aprovizionarea zilnică pe aici este foarte problematică), în legătură cu maşina (sunt şofer nou şi neexperimentat), cu familia etc.

Sper să pot trece prin Cluj în primăvară, cu excursia anului IV al nostru, în drum spre Banat. Nu aveţi cumva drum pe la Iaşi?

Ce face tânăra parte a familiei? Dar doamna Pop? Mi-ar face mare plăcere să ne revedem sau, şi mai bine, să ne întâlnim vara undeva în concediu.

Vă rog să transmiteţi doamnei şi tuturor celorlalţi membri ai familiei cele mai respectuoase urări de sănătate şi multe salutări.

Cu cele mai bune salutări de prietenie
(ss) *Al. Ungureanu*

6

Iaşi, 1 noiembrie 1981

Dragă şi mult stimate domnule Pop,

Vă trimit alăturat un volum xerografiat, pe care am reuşit să-l scoatem şi care cuprinde o parte din lucrările sesiunii noastre de anul trecut (restul de lucrări se va publica în *„Analele Ştiinţifice"*).

Sperăm să putem publica în mod regulat un astfel de volumaş şi am dori ca în viitor şi centrul Cluj să fie prezent la sesiunea noastră, cu un număr cât mai mare de participanţi.

Pe aici lucrurile îşi urmează cursul normal, acum, după ce am predat datoriile pentru *Tratatul de Geografie* pe anul în curs, avem o perioadă ceva mai calmă. Îmi ia destul de mult timp pregătirea cursului de *Geografie regională a României*, care îmi revine parţial din toamna aceasta.

Cele mai respectuoase sărutări de mâini Doamnei Pop şi multă sănătate membrilor mai tineri ai familiei.

Cu mult drag,
(ss) *Al. Ungureanu*

7

Iaşi, 28 noiembrie 1981

Dragă şi mult stimate Domnule Pop,

Multe mulţumiri pentru frumoasele cuvinte pe care le-am primit din partea Dvs. în ultima scrisoare. Mă bucur că sunteţi sănătos şi optimist şi aveţi aceeaşi neasemuită putere de muncă din totdeauna.

Vin acum la Dvs. cu o rugăminte. Iată despre ce este vorba: Am fost rugat de redacţia revistei *„Memoriile secţiilor ştiinţifice ale Academiei R. S. România"* să mă ocup de colectarea câtorva articole de geografie şi geologie pentru volumul V. Articolele sunt cerute până pe data de 1 (cel târziu 10 ianuarie). M-am gândit că, din numeroasele lucrări despre care mi-aţi amintit în scrisoare poate aveţi vreuna care nu a găsit loc pentru publicare şi mi-aţi putea-o trimite.

De asemenea, poate mai cunoaşteţi vreun coleg clujean (geolog sau geograf) care mi-ar putea trimite (eventual prin intermediul Dvs.) o lucrare de valoare. Pentru lămuriri tehnoredacţionale vă trimit o notă pentru autori. Lucrările pot avea 10-12 pagini, dacă este un subiect deosebit, poate şi ceva mai mult.

Din păcate, nu pot garanta pentru publicarea lucrării sau lucrărilor, deoarece decizia asupra acesteia revine secţiei de geologie şi geografie a Academiei, din Bucureşti. Sper totuşi că acest demers nu va fi zadarnic.

Rog transmiteţi cele mai respectuoase urări Doamnei Pop şi cele mai bune salutări tinerei familii.

În speranţa unui răspuns pozitiv, rămân al Dvs., sincer îndatorat,

(ss) *Al. Ungureanu*

8

Iaşi, 22 decembrie 1986

Dragă şi mult stimate domnule Grigore Pop,

A trecut cam mult timp de când nu ne-am mai văzut, prinşi cum suntem cu tot felul de ocupaţii. Am avut un an foarte greu, cu foarte multe sarcini şcolare şi extraşcolare şi nici acum nu am terminat tot ce trebuia predat până la începutul lunii decembrie.

Partea cea mai proastă este că facem o mulţime de lucruri în viteză şi de o calitate mai mult decât discutabilă; multe aşa-zise „contracte" sunt nişte lucruri absolut inutile şi sunt convins că nimeni nu se uită la ele, nici măcar de formă. Toate însă consumă o groază de timp şi energie, ne omoară nervii şi vederea ş. a. m. d.

Am impresia că la Cluj vă desfăşuraţi mult mai bine cu munca ştiinţifică, prin relaţii mai bune cu diverse întreprinderi.

Peste toate, a trebuit să plec în mare viteză, nepregătit, şi în Germania, pentru numai 2 zile, în comisia pentru manualele de istorie şi geografie, de fapt pentru a relua relaţiile întrerupte în 1982. A fost o luptă diplomatică foarte neplăcută, pentru a învinge neîncrederea nemţilor şi a deschide posibilitatea reluării activităţii comisiei, aşa cum s-a trasat ca sarcină, de către minister.

Ce mai e nou pe la Cluj? Ce se mai aude despre perspectivele noastre? – ai noştri sunt foarte înfricoşaţi de desfiinţarea secţiei de geologie, văzând în asta un preludiu şi al desfiinţării secţiei de geografie, Bucureştii voind să tragă totul spre sine.

Ce mai fac doamna Pop şi copiii dvs.? Le dorim tuturor multă sănătate şi putere de a trece peste toate încercările.

Brânduşa şi Măriuca s-ar putea să vină la Cluj pe la sfârşitul lunii martie, la faza pe ţară a concursului artistic *„Gaudeamus"*, Brânduşa cu grupul coral, iar Măriuca în concursul de pian. Dacă voi fi liber, s-ar putea să vin şi eu.

Până atunci, mi-am permis să trimit şi eu 2 din revistele noastre, bunerele, aşa cum sunt.

Dorim întregii familii multă sănătate, Sărbători Fericite şi un An Nou cu mai multe motive de satisfacţie şi voie bună.

Ai Dvs.
Brânduşa şi Sandu Ungureanu

9

Iaşi, 13 ianuarie 1987

Dragă şi mult stimate domnule Pop,

M-a bucurat mult primirea coletului cu cărţi de la Dvs. şi vă mulţumesc în modul cel mai sincer şi mai călduros pentru ele. Vă felicit în mod deosebit pentru reuşita publicării lor. Am transmis volumul de *Geografie economică a României* şi profesorului Şandru, care a promis că vă va scrie personal.

În legătură cu posibilitatea comandării de către bibliotecă a volumelor, am vorbit cu bibliotecarele noastre. Acestea au fost de acord să facă comandă, inclusiv pentru primul număr din *„Cercetări de geografie aplicată"*, dacă mai sunt exemplare încă nevândute. Vă roagă, însă, să transmiteţi prin mine, titlul şi adresa exactă a instituţiei către care trebuie transmisă comanda, contul de virament al acesteia şi preţul publicaţiilor (la cursul de *Geografie economică a României* preţul este imprimat pe copertă, dar nu şi la revista scoasă de Dvs.).

În rest, ce să vă mai spun? Ne luptăm cu frigul aspru de la facultate (şi acum mâinile nu vor să mă asculte, complet îngheţate îmi sunt) şi de acasă, unde stăm mai mult ascunşi sub plăpumi. Încercăm totuşi să ne facem datoria, cu un moral foarte scăzut, dacă te gândeşti cu câtă uşurinţă s-a putut desfiinţa secţia de geologie şi că astfel de măsuri arbitrare pot lovi şi pe alţii.

Vă doresc mai multă căldură decât avem noi, multă sănătate întregii familii şi rezistenţă pentru a trece peste această perioadă grea.

Respectuoase sărutări de mâini doamnei Pop, cele mai bune urări copiilor şi sper să ne întâlnim la Cluj în luna martie, când Brânduşa şi Măriuca vor veni cu ocazia finalei pe ţară a concursului *„Gaudeamus"* (s-ar putea să mă ataşez şi eu, dacă voi fi liber).

Al Dvs. sincer,
(ss) *Al. Ungureanu*

10

Iaşi, 21 mai 1990

Dragă şi mult stimate Domnule Pop,

Aş vrea, mai întâi, să vă transmit cele mai sincere felicitări pentru încheierea concursului şi promovarea Dvs. în postul de profesor, aşa după cum meritaţi, de fapt, de mult timp.

Vă aduc, de asemenea, cele mai calde mulţumiri pentru faptul că aţi acceptat să faceţi parte din comisia de concurs pentru titularizarea mea pe postul de conferenţiar şi vă cer iertare pentru pierderea de timp la care vă supun, cu aceste probleme ale mele.

Termenul de depune a actelor de concurs a expirat pe 17 mai în cazul meu, termen în care m-am încadrat, depunându-le pe data de 14 mai. În ultimul timp, însă, am stat mai mult pe lângă mama mea, care s-a chinuit groaznic mai multe luni, înainte de a trece în cealaltă lume, pe data de 7 mai. Vă închipuiţi că nu mi-a fost gândul la concursuri şi avansare, în ultima vreme.

Profesorul Donisă, preşedintele comisiei, având în vedere că s-a cerut un singur exemplar din acte, m-a sfătuit că ar fi mai bine să trimit direct celorlalţi membri ai comisiei, câte o copie după memoriul de activitate şi lista de lucrări. Nu este sigur dacă serviciul nostru de personal va fi suficient de prompt, mai ales acum, când poşta merge foarte încet.

Ca atare, îndrăznesc să vă trimit, alăturat, actele menţionate, în speranţa că prof.[esorul] Donisă va lua legătura cu Dvs. pentru întocmirea referatului. Nu m-a interesat, însă, dacă există şi alţi candidaţi, dar dacă vor fi, îi voi sfătui să facă acelaşi lucru, ca şi mine.

Multe sărutări de mâini Doamnei Pop, mult succes în muncă şi multă sănătate, în speranţa de a vă primi, cu drag, la Iaşi, cât mai curând cu putinţă.

Din nou, cu mulţumiri anticipate,

(ss) *Al. Ungureanu*

11

Iaşi, 22 mai 1990

Dragă şi stimate domnule Pop,

Îmi cer scuze pentru faptul că, la scurt timp de la primirea de către Dvs. a scrisorii mele conţinând memoriul de activitate şi lista de lucrări, vă deranjez cu o nouă scrisoare.

De data aceasta este vorba de actul oficial al rectoratului, referitor la participarea Dvs. în comisia de concurs. El mi s-a transmis de către rectorat, cu rugămintea de a mă ocupa eu însumi de expedierea sa, probabil din motive de promptitudine sau din economie. Nu este un procedeu conform cu normele, dar asta este situaţia.

Vă mulţumesc cu anticipaţie şi îmi cer din nou iertare pentru faptul că vă răpesc din timp.

Respectuoase sărutări de mâini Doamnei Pop şi cele mai bune urări de succes colegilor de catedră.

Al Dvs. sincer,
(ss) *Al. Ungureanu*

12

Iaşi, 5 aprilie 1991

Dragă şi mult stimate Domnule Grigor Pop,

Imediat ce am primit scrisoarea Dvs., am început să caut materiale pentru a întocmi lista pe care mi-aţi cerut-o. Au apărut unele dificultăţi, din două motive: pe de o parte tocmai acum au decedat trei dintre conducătorii noştri de doctorat, de la care nu am mai putut primi, deci, nici o informaţie, iar pe de alta – s-au schimbat, profitând de posibilitatea pensionării la o vârstă mai tânără, cam toate secretarele noastre, iar cele noi nu se prea descurcă în dosarele mai vechi, iar pe unele din acestea nici nu le mai găsesc deloc. O bună parte din listă a trebuit să fie reconstituită pe baza unor informaţii de la colegi, fiecare mai spunându-mi câte ceva, încât până la urmă se apropie destul de mult de realitate. În fond ceea ce interesează publicul cititor al revistei Dvs. este tematica lucrărilor de doctorat, pentru orientarea unor subiecte noi, şi nu anii exacţi ai admiterii sau susţinerii unor teze, aici mai putând să se fi strecurat unele inexactităţi.

În altă ordine de idei, mă întreb cum de mai reuşiţi să mai publicaţi revista. Din cauza preţurilor exorbitante cerute de tipar, noi ne aflăm în imposibilitatea de a o mai putea tipări şi căutăm o altă modalitate. Un schimb de experienţă ar fi util.

Aş îndrăzni şi eu să vă adresez o rugăminte: nu am o situaţie la zi a punctelor în care realmente se exploatează cărbunii în bazinul Almaşului, pe de o parte, şi în cel al Crişului Repede, pe de alta. Am impresia că unele mine vechi s-au închis (ca şi termocentrala Şorecani, de altfel) şi s-au deschis altele, pe care literatura de specialitate nu le consemnează. Mi-aţi putea transmite unele informaţii, pentru a le folosi la curs?

De asemenea, am văzut din tren construcţia a circa 4 hidrocentrale noi pe Crişul Repede, în amont[e] de Oradea, dar n-am găsit nimic publicat referitor la numele lor şi la capacitate. M-aţi putea ajuta şi în această privinţă?

Vă doresc Sărbători Fericite, împreună cu întreaga familie, transmit cele mai respectuoase sărutări de mâini Doamnei Pop şi salutări colegiale celor din catedră.

Sper să ne întâlnim la Iaşi, cu ocazia celor două doctorate, unde se pare că vom fi în aceeaşi comisie.

Al Dvs. sincer,
(ss) *Al. Ungureanu*