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THE LOSS OF VILLAGES IN ROMANIA AFTER 1990

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ABSTRACT. – The Loss of Villages in Romania after 1990. Settlement development is a continuous process significantly influenced by population dynamics. Population decrease through migration and low birth rate has become an issue at European level, and in the case of Romanian rural areas the situation proves even more severe. The aim of our study is to analyse the evolution of rural settlements from emergence to decline based on a seven-stage development cycle and emphasize on the phenomenon of rural settlement disappearance in Romania after 1990. Results show that even without first-sight visible or significant effects at national level, the number of rural settlements that have disappeared is continuously increasing, therefore becoming an issue for the development of rural areas. Particularities of the current condition of the built-up area of each of the analysed villages revealed various levels of destruction from incipient decline (whole built-up area) to total collapse (very few remains of the built-up area, and even incorporated in the natural environment). We thus create a typology of disintegrated villages, which are currently found at national level and we reveal their administrative and geographical distribution. We conclude that settlement evolution and the risk of their disappearance should be on the shortlist of priorities of the national policies, strategies and projects designed for the development and planning of rural areas.

Keywords**:** *settlement dissapearance, depopulation, evolution stages, typology of dissapeared villages, built-up area, functional transformation, functionality and decline of human settlement*

1. INTRODUCTION

The disappearance of geosystemic structures, namely settlements, is a both a current and extremely relevant subject due to the numerous effects they generate socially, economically, environmentally and spatially. Similar to any other geosystemic structure, human settlements have limited existence, while depending on circumstances and favourable factors that contribute to their

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emergence and development. Consequently, appearance and disappearance of settlements is a natural process, triggered by positive or negative dynamics of population, level of economic development, administrative and political changes, yet their unintended disappearance at an accelerated pace becoming problematic. This means that, even though a dynamic system, settlement needs to find certain equilibrium to ensure its existence over time. For instance, the fortuitous disappearance of settlements in cases of political conflicts or natural disasters is understandable, but their collapse during peacetime is synonymous with the death of a man who still had days but the social and medical system killed him because he was not able to care for his health. The disintegration and eventual disappearance of any settlement is a tragic event for the socio-geosystem and related remaining communities, them being required to take the territory of the disappeared village under their administration. At the same time, the energy, social and economic flows in the territory are once again restructured. Therefore, the resilience of settlements in the context of severe population decline, acceleration of population ageing, and rural-urban migration at European and national level is a matter of great importance. The latest global and European studies reveal that Romania registers one of the greatest decrease rates of population shrinking in Europe and it is projected to have a sharp population decline of 22.1% by 2050 (European Commission, 2014; United Nations, 2015).

Rural settlements are the focus of our study. The aim is to identify rural settlements that have already disappeared in Romania, in the last three decades, considering the size of phenomenon and major causes, and depict particularities of their collapse in order to elaborate a typology. After we reveal the current situation of rural settlement disappearance, we also emphasize on the severity of this phenomenon. Given that more than 1% of villages in Romania have disappeared in the last three decades, it is projected to double the rate of extinction in the next decade. In this context, the obvious question to ask is whether this phenomenon of settlement disappearance should just be observed by local and regional authorities and decision-makers or if they need to start making concise interventions to stop it and develop programs to regenerate the vulnerable settlements. Since the settlement system proves adaptable to a certain degree, then the suitable reply is that rural settlement resilience building should be part of the agenda of rural spatial planning and design (Heijman et al., 2007). Karcagi Kováts & Katona Kovács (2012), have elaborated one of the most comprehensive studies on rural population decline as approached and analyzed at the European level (in the EU sustainable development policies and strategies and rural development programmes and measures of action), showing that most of them, including Romania, acknowledge population decline as a negative issue, but it seems a secondary aspect to be approached in the process of rural development.

Authors then conclude that, since there is no commonly accepted objective or principle to react against the negative demographic changes in rural areas, strategic documents should pay more attention to ecologic, economic and social effects of this phenomenon. In this regard, National Rural Development Plan 2014-2020 acknowledges that Romanian rural population is facing demographic decline and considers the constant depopulation of villages and ageing population a threat for the future socioeconomic development of the rural areas. The main identified driving factors are: low level of fertility, high mortality, urban and abroad migration, urbanization and ageing. However, due to the numerous deficiencies rural areas are affected by, the objectives for the current development plan are mainly related to the sustainable management of resources and economic revival, consistent with priorities of knowledge transfer, innovation, biodiversity protection, social inclusion and natural risk management due to climate change (NRDP, 2014).

2. THEORY AND METHODOLOGY

The debate on this particular subject in the national literature is reduced, only limiting to general aspects or concrete analyses mostly on factors driving changes and transformation of rural areas. In this respect, this paper is the first carried out at national level and covers a period of three decades, and it should be perceived as an incipient initiative to explore and assess the overall and visible effects of population decline and aging within the rural areas, particularly the transformation or shrinkage of villages. Nationally, there are numerous newspaper articles covering this phenomenon, but no scientific work has yet thoroughly analysed its magnitude and implications, especially in the context of sustainable development and spatial planning. At European level there are several successful attempts of research projects that approached the phenomenon of population decline and settlement shrinkage in which they debated, analysed and designed strategies and scenarios for the better management and planning of land and population in certain affected rural areas, focusing on economy, land-use, social aspects, cultural heritage, ecology and others (Westhoek, van den Berg, Bakkes, 2006; van der Schoot et al., 2014).

Our paper is structured in several sections, as follows: i. in the first section we debated on settlement evolution and we elaborated on the distinct stages of settlement life cycles and the major alterations occurring in the structure of settlement system; ii. in the next section we focused on the reality of lost villages in Romania in the period between 1986 and 2016, concentrating on the dynamics of the phenomenon and representing it at county and national level;

iii. in the third section of the paper we depicted a typology of currently disappeared settlements by considering two of the main factors namely, population number and the state of the built-up area. Each of the categories were analysed in terms of resilience (what is left, what has already been adapted and what cannot be regenerated anymore). We then mapped the categorized villages in order to reveal their spatial distribution administratively at national level and morphologically, thus, underpinning the geographical units most affected by this phenomenon; iv. in the last section we emphasize on the definite effects of settlement disappearance socially, economically and territorially.

We examined population changes in the Romanian rural villages using the national censuses conducted by the National Institute of Statistics in 1992, 2002 and 2011. Supplementary data on the endangered or already collapsed rural localities were collected from the list of disappeared or unpopulated localities in 2015 published open-access, this incipient set of data, including the names of 126 rural localities, being the starting point for our research. This data was collected during the Open Data Hackathon in 2015 and was consistent with data provided by the study for the update of National Spatial Plan – Section: Settlement Network in 2014 (Ministry of Regional Development and Public Administration) which revealed a number of 114 villages that registered 0 inhabitants at the 2002 census. Each of the villages was verified regarding the administrative status in the past and present, the exact toponym and the historical administrative changes, if the case (Law 2/1968; Law 351/2001; Suciu, 1966, 1968; Ghinea & Ghinea 2000). For each of the categories we chose an illustrative example by using recent satellite images (Google Maps, 2016, INIS Viewer Inspire Geoportal, 2016). The aggregated data on all the identified villages that registered less than 3 or zero inhabitants are presented in Appendix 1. The synthetic table provides readers with related information on name of the villages, name of the communes and counties they were administratively part of, number of population in 1992, 2002 and 2012, the condition of the built-up area and the geographical location. We elaborated a typology of the disappeared villages according to the condition of the built-up area.

2. 1. Settlement development – evolution phases

Base on the truth that no system grows ad infinitum and nothing remains stable ad infinitum (Mella, 2012), the process of settlement development consists in the completion of several distinct evolutionary phases, at the end of which settlement can enter a new development phase or ends their life cycle, their decline being irreversible. Each of these stages of evolution is characterized by distinct features. To better understand how rural settlements change over time, Collins-Kreiner (2013) came up with a theoretical model of village transformation by using the "Product life cycle" based on 4 main development stages (birth,

development, stagnation, decline, death) a products goes through on the economic market. Also, the model mentions the possibility of regeneration after the completion of these four stages. In our analysis however, we decided to conceptually define seven stages of settlement development: emergence, growth, development, consolidation, maturation, stagnation and post-critical evolution (Fig. 1).

Settlement emergence is the first evolution stage and may be equated with beginning and formation as a composite result of several intrinsic and extrinsic factors. The reason for forming new settlements is to provide population (families, social groups, communities) with housing. The decision to create new settlements is based on multiple reasons, namely political, economic, social, administratively and strategic. Subsequently, a first form of settlement is shaped. This is made up of households with related families, who begin to use and manage the available land and set the basis for the future complex shape.

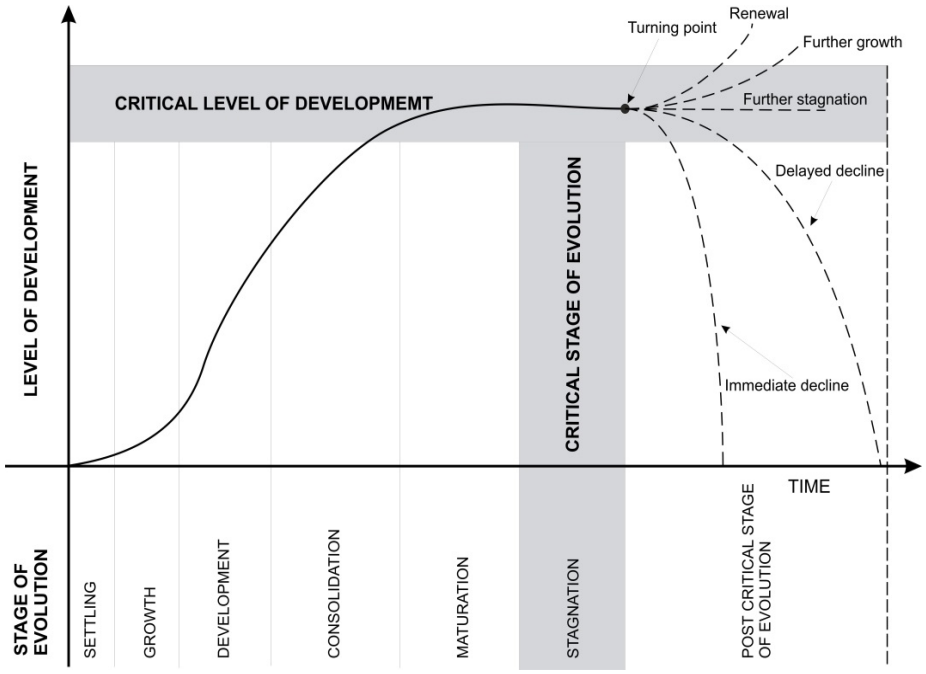

Fig. 1. Phases of settlement development

Settlement growth is the second evolution phase, mainly characterized by increase in the number of households and related population, including new-comers into the community either by migration or by natural reproduction. This stage essentially confirms the appearance of the settlements and lays the foundation for the next development stage.

Settlement development consists in setting up facilities providing permanent housing and most needed public amenities to support the sustainability of settlement. Simultaneously with demographic increase, major economic activities are developed and accessibility is improved. Thus, functional zoning becomes essential and cooperative relations with other settlements in the territory are established.

Consolidation is the fourth stage of evolution, when settlement reaches the maximum development level in the given historical, political and economic context. It is mainly characterized by diversification of facilities and services, economic activities and communication network. This stage is also of the longest duration, settlements completing the development process and stabilizing their position in the territorial hierarchy, even outranking other settlements.

Maturation is the fifth stage of evolution, characterized by latent development, consisting in processes of realignment, reorganization and re-adaptation to changes, driven by internal and external factors. Development has reached the critical level of sustainability, settlements becoming fully structured and representative for the territory they polarize. Since they are at their development peak in the given context (historically, politically and economically) settlements turn now to the critical stage of development – stagnation.

Stagnation is the sixth stage of settlement evolution, when settlements are searching for new development opportunities, while affected by a slight decline and numerous uncertainties. By the end of this stage, settlements find themselves at a crossroads. Consistent with several active control development factors, when they reach this turning point they choose a new defining evolution trajectory. It can then be towards renewal, future development, further stagnation, delayed decline or immediate decline. In case new opportunities for development appear, settlements will then rebound, either following a regeneration path or a new development direction, thus overcoming the critical level, and ensuring their continuity and existence. In the case opportunities for development are only foreseeable, but not yet available, stagnation phase may further extend, but only for an indefinite and finite time. Duration is conditioned by the internal capacity of settlements and their associated structures to perpetuate on their own forces and also by the population choice to still live there. Where opportunities for development are no longer visible, settlements evolve towards decline and can be placed on two possible evolution trajectories: late decline or immediate decline. Late decline is characteristic to settlements that have reached advanced development level and whose internal inertia extends this phase of involution over a long period, for decades or even for centuries. On the contrary, the less developed medium and small size settlements, with reduced internal inertia, are placed on the trajectory

of immediate decline, thus reaching collapse in several decades. First, the demographic component disappears, then the built-up area dismantles, and finally the entire settlement system is absorbed by the natural environment and reintroduced into the natural circuit (Fig. 2).

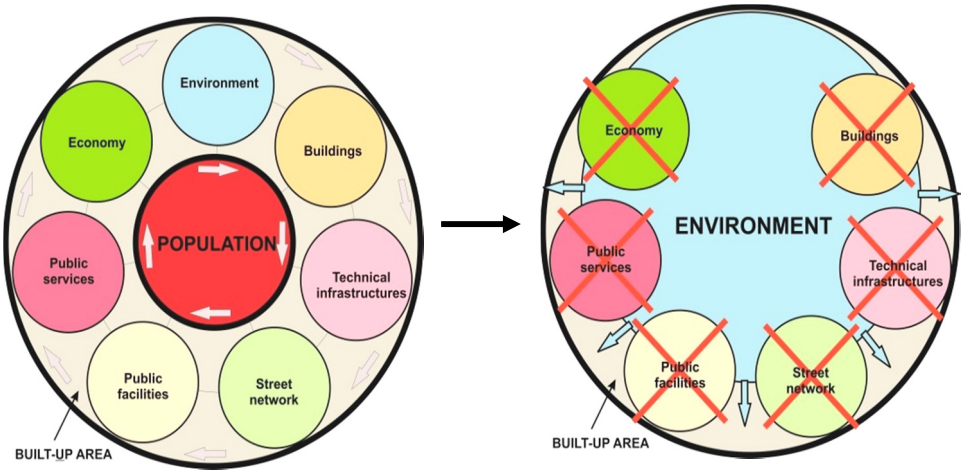

Fig. 2. Functionality and decline of human settlement

In reality, settlements have their own destiny, evolutionary path, duration of functionality and level of complexity in terms of development and particular way of collapse. As compared to large urban settlements, whose level of complexity of development makes their lifespan be of centuries and even millennia, the small and especially the smallest rural settlements are the most susceptible to go through evolutionary stages extremely fast, usually ending their physical existence through a spectacular event or most of the times by depopulation.

3. RESULTS AND DISCUSSION

3.1. The disappearance of rural settlements in Romania after 1990

In the last almost three decades (1992-2016) Romania has registered significant settlement losses, mainly due to depopulation. Rural population decline has started in the '60s of the 20th century, when the maximum value was registered (67.9%). Since then, rural population has followed a constant negative

trend until today. Altogether, 9,695,506 people live in rural areas in 2016, which is 43.59% of the total Romanian population (NIS, 2015; NIS, 2016). Administratively, they are resident in 2,861 communes (consisting of 12,368 villages). The 928 villages currently found within the administrative borders of cities or towns, were not classified as rural settlements (villages). Urban population, representing 56.41% of the total national population is resident in 320 urban localities (towns and cities). In the last three decades, Romania has lost 182 villages, representing 1.35% of total number of settlements. This is quite an alarming value if we consider that several other localities seem to be on the same path of disappearance in the next period, mainly due to depopulation. The situation at national level is revealed in table 1.

Table 1. Dynamics of settlement collapse rate in Romania after 1990

No. crt.	County	Period 1992-2002	Share of the total national (%)	Period 2002-2011	Share of the total national (%)	Period 2011-2016	Share of the total national (%)	Period 1992-2016	Share of the total national (%)
1	Alba	6	3.30	10	5.49	1	0.55	17	9.34
2	Argeș	1	0.55	4	2.20	1	0.55	6	3.30
3	Bacău	6	3.30	5	2.75	0	0.00	11	6.04
4	Bihor	0	0.00	1	0.55	0	0.00	1	0.55
5	Brăila	8	4.40	0	0.00	0	0.00	8	4.40
6	Botoșani	13	7.14	1	0.55	0	0.00	14	7.69
7	Buzău	3	1.65	1	0.55	0	0.00	4	2.20
8	Cluj	5	2.75	0	0.00	2	1.10	7	3.85
9	Calarasi	7	3.85	0	0.00	0	0.00	7	3.85
10	Caras-Severin	1	0.55	3	1.65	0	0.00	4	2.20
11	Constanţa	3	1.65	0	0.00	0	0.00	3	1.65
12	Covasna	2	1.10	0	0.00	0	0.00	2	1.10
13	Dolj	6	3.30	1	0.55	2	1.10	9	4.95
14	Gorj	0	0.00	1	0.55	0	0.00	1	0.55
15	Galaţi	2	1.10	0	0.00	0	0.00	2	1.10

No. crt.	County	Period 1992-2002	Share of the total national (%)	Period 2002-2011	Share of the total national (%)	Period 2011-2016	Share of the total national (%)	Period 1992-2016	Share of the total national (%)
16	Hunedoara	4	2.20	8	4.40	0	0.00	12	6.59
17	Harghita	4	2.20	2	1.10	1	0.55	7	3.85
18	Ialomița	2	1.10	0	0.00	0	0.00	2	1.10
19	Iași	1	0.55	0	0.00	0	0.00	1	0.55
20	Mehedinți	2	1.10	0	0.00	0	0.00	2	1.10
21	**Mureș**	**6**	**3.30**	**13**	**7.14**	**1**	**0.55**	**20**	**10.99**
22	Neamț	0	0.00	2	1.10	0	0.00	2	1.10
23	Olt	1	0.55	0	0.00	0	0.00	1	0.55
24	Prahova	4	2.20	2	1.10	0	0.00	6	3.30
25	Sibiu	1	0.55	1	0.55	0	0.00	2	1.10
26	Sălaj	1	0.55	1	0.55	1	0.55	3	1.65
27	Satu Mare	3	1.65	1	0.55	0	0.00	4	2.20
28	Suceava	2	1.10	1	0.55	0	0.00	3	1.65
29	Tulcea	3	1.65	1	0.55	0	0.00	4	2.20
30	Timiș	3	1.65	1	0.55	0	0.00	4	2.20
31	Teleorman	1	0.55	1	0.55	0	0.00	2	1.10
32	Vâlcea	1	0.55	0	0.00	0	0.00	1	0.55
33	Vrancea	2	1.10	0	0.00	0	0.00	2	1.10
34	Vaslui	7	3.85	1	0.55	0	0.00	8	4.40
34	***Total national***	111	60.99	62	34.07	9	4.95	182	100.00

Looking closely, the phenomenon of settlement disappearance is found in 33 of the 41 Romanian counties, yet with significant values in the counties of Mureș (15), Botoșani (14), Alba (12) and Bacău (11) (Fig. 3). The period with the highest number of settlement losses is between 1992 and 2002 when 32 counties in Romania recorded such phenomena, except for Gorj and Bihor counties.

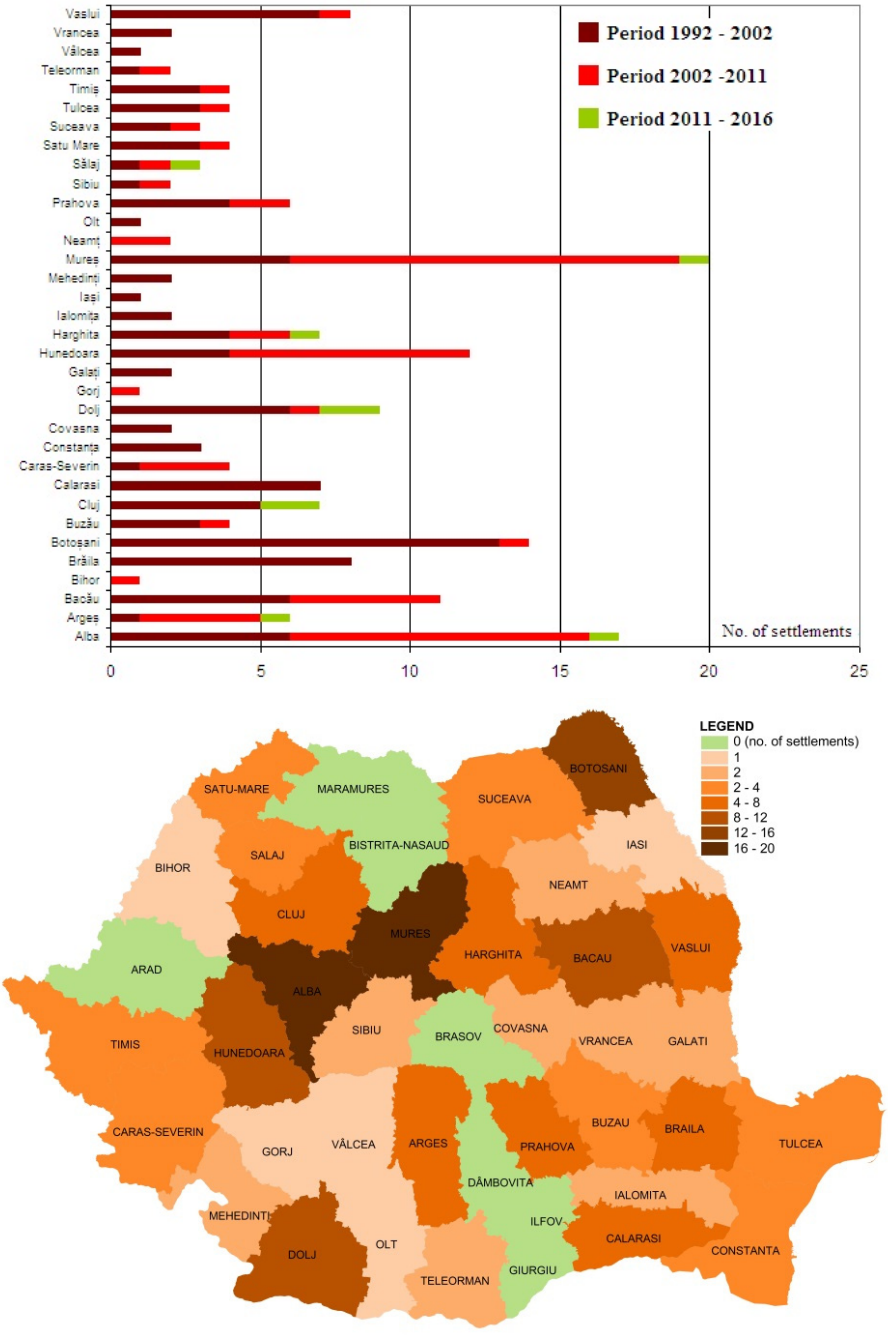

Fig. 3. Spatial distribution of disappeared villages at county level

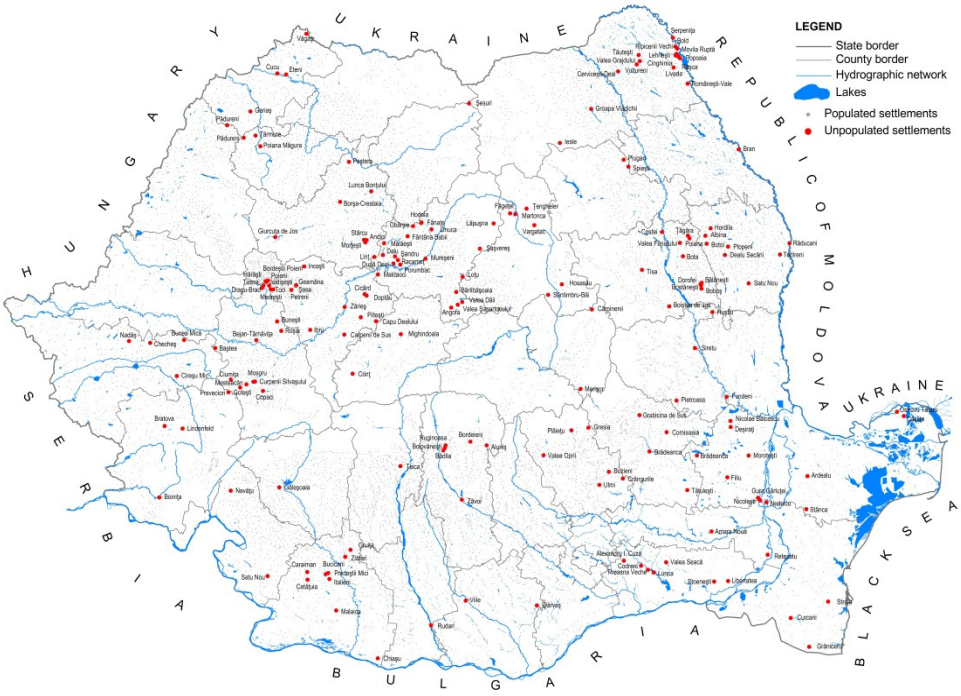

Fig. 4. Territorial distribution of disappeared villages in Romania

Between 2002 and 2011 the phenomenon of settlement disappearance decreased at national level, though remaining high in the counties of Mureș, Bacău and Alba. However, halfway through the 2010-2020 decade, depopulation still persists and it has already been recorded in counties such as Cluj, Mureș, Alba and Harghita. It also seems possible that several other localities will be included in this list by the end of this decade.

The geographical distribution of missing settlements highlights the fact that most of them are grouped into four areas: Apuseni Mountains, Transylvania Plain, Moldavian Plain and Central Moldavian Plateau. Dissapeared settlements in these morphological units seems to have reached the critical conditions that caused the manifestation of this phenomenon: demographic ageing, depopulation, low potential for communication, economic decline, lack of services and public facilities, lack of state interest for the revival of settlements that are in critical condition etc. On the other hand, there are geographical areas where this phenomenon has not occurred at all and settlements are vigorous and register positive development trend, such as: Maramureș, Bistrița, Neamț, Brașov, Bihor, Arad etc.

3.2. Typology of disappeared settlements in Romania

Morphologically, villages have two components, the social component and the built component, and the functionality of the settlement fractures if either one is compromised. The built-up area represents the core of the village and the land here is the most intensively used (Mandal, 2001). The complementary morphological elements of the village consist of street network, residential area and agricultural area. In case of population decline, due to economic reasons or natural dynamics, anyone of the components is subject to transformation or disintegration. On closer examination we find that lost rural settlements fall within a certain typology in terms of population dynamics and the condition of built-up area (Fig. 5). In order to illustrate the main features of each category, we selected one most expressive village for each of them. By using satellite images provided by Google Maps we were able to reveal the current state of the selected villages, indeed, with limitations (given the uncertainty of the time of capturing the satellite images and in the absence of field work).

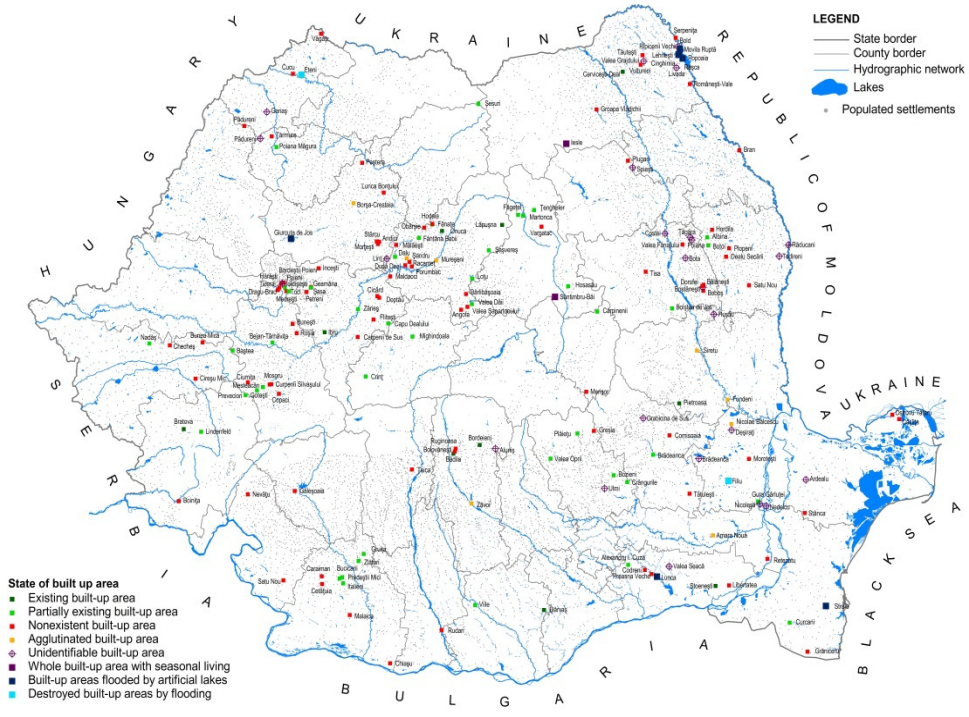

Fig. 5. Spatial distribution of disappeared localities classified by the state of built-up area

Demographically, all of the analyzed villages have lost their population, today being registered without inhabitants or with a population of less than 3 people at the 2011 census (Table 2). The loss of population was achieved either naturally by high mortality rate amid advanced aging population, or through intense migration, and in some cases through the relocation of all residents into another village. This situation has created the main circumstance under which settlements disappear – the demographic loss.

The level of destruction of the built-up area depends on the length of time that passed after population loss. In case settlements have been depopulated for over a decade we can already see the first effects of destruction, whereas in case population loss was more than two or more decades ago, we note the total destruction or even the disappearance of the built-up area and their assimilation into the natural environment.

The analysis on the state of the built-up area revealed that disappeared settlements can be grouped into eight distinct subtypes: *i. existing built-up area, ii. partially existing built-up area, iii. nonexistent built-up area, iv. agglutinated built-up area, v. unidentifiable built-up area, vi. whole built-up area with seasonal living, vii. built-up areas flooded by artificial lakes, viii. built-up areas destroyed by flooding*. They are described below with an illustrative example for each of them.

i. Settlements with intact built-up area. We included here villages that have recently lost their population, while their other components have not yet entered the process of decline. Results show that 10 of the disappeared villages at national level could be included in this category. Households, as well as basic public utilities, are maintained intact (especially the electricity network, where existent) (Fig. 6). Usually, these settlements are seasonally inhabited by owners' descendants, for a period of time (usually several years), subsequently starting the process of household selling. In case settlements are attractive due to their geographical location or benefit from good potential of communication, they may recover from this process of property trading, and resume their function of habitation.

A suitable example to be considered here is Casele Micești village, Feleacu commune, Cluj County, which, after the 1992 census when it recorded 0 inhabitants, at the censuses of 2002 and 2011 it registered demographic growth, today having a population of 30 inhabitants. This is mainly determined by the proximity to an important urban center, Cluj-Napoca municipality, and to the favorable position of the city within Făget forest. Subsequently, it was quickly revived by those eager to live out of town, in homes perfectly integrated into the natural environment. Moreover, the value of land and households in such a settlement, on the verge of disappearance, has grown exponentially, becoming accessible only to wealthy people with substantial revenues. Therefore, we do not exclude that this revival phenomenon of newly abandoned settlements to be repeated in other cases under similar circumstances (Fig. 7).

Fig. 6. Depopulated settlement with intact built-up area. The case of Șandru village, Papiu Ilarian commune, Mureș County, Romania *(Source: Google maps)*

Fig. 7. Depopulated settlement with intact built-up area. The case of Brădeanca village, Buzău County, Romania *(Source: Google maps)*

Another example could be Brădeanca village of Vernești commune, Buzău County, which is located at a distance of only several kilometres from Buzău municipality. After losing its entire population, it has entered a long process of regeneration, households being purchased and reconstructed by new owners, aiming to use them as main or secondary residences (Fig. 8).

Fig. 8. Depopulated settlement in the first stage and then regenerated under favourable conditions. The case of Brădeanca village, Buzău County, Romania *(Source: Google maps)*

ii. Settlements with partially intact built-up area are those that lost their inhabitants a while ago (approximately a decade) and they have already entered the destruction phase because they did not benefit from location or other advantages. Some households have been preserved during this period and used as second homes or have been prepared for selling. The remaining households either degraded to self-demolition or were demolished by the descendants of owners, who reused the construction materials. Results show that 43 of the disappeared villages at national level are depopulated for about 10 years and their built-up areas are partially destroyed. The fact is that these settlements have lost the competition for survival and find themselves on the trend towards destructuring or functional transformation. It could either become an agricultural holding or a tourist village, which would include the renewal of the built-up area by the construction of accommodation infrastructure and other tourism-related facilities (Fig. 9).

Fig. 9. Depopulated settlement with partially intact built-up area. The case of Bârlibășoaia village, Albeşti commune, Mureş County, Romania *(Source: Google maps)*

In the example above, the built-up area was populated with boarding facilities, mainly guesthouses, thus the village changing its function from residential into tourism and leisure one. This should be seen as a beneficial conversion, investments in infrastructure and utilities being recovered through the change in the use of the built-up area (Fig. 10).

Fig. 10. Depopulated settlement in the first stage and in process of regeneration due to the presence of favourable conditions for tourism development. The case of Bârlibășoaia village, Albeşti commune, Mureş County, Romania *(Source: Google maps)*

In geographic areas where there are no favourable factors for settlement development, villages in this phase continue to dismantle up to total destruction of built-up area, subsequently being assimilated by the natural environment.

iii. Settlements with nonexistent built-up area. Results show that 85 of the disappeared villages at national level are depopulated for about 10-20 years and their built-up area is entirely destroyed. Since they did not benefit from positional or other advantages, they have already completed the process of material destruction. The sites are empty of any buildings or structures, currently being given agricultural use or even becoming part of the natural environment. The only elements that recall of the former settlement are the cemeteries, remnants of building foundations and various other traces (abandoned orchards, agro-terraces which used to be economically exploited etc.) (Fig. 11, 12).

Fig. 11. Depopulated settlement with nonexistent built-up area. The case of Checheș village, Secaș commune, Timiș County, Romania *(Source: Google maps)*

Each of these settlements has a particular story until they reach this stage of final and irreversible destructuring. They can thus become testimonies to be considered to avoid the reoccurrence of such events in the future and to improve the quality of management in the case of still existing settlements. Each collapsed settlement represents an immense loss for Romania and an attack on our identity as a nation.

Fig. 12. Settlement with nonexistent built-up area. The case of Checheș village, Secaș commune, Timiș County, Romania (*Source: http://debanat.ro/2015/02/trei-sate-din-timis-nu-exista-in-romania-sunt-126-de-localitati-fantoma_97863.html)*

iv. Settlements with agglutinated built-up area. Results show that 4 of the disappeared villages at national level can be included in this category. Along with their inhabitants they have undergone agglutination by a nearby urban or rural locality, thus losing the status of self-contained villages. This can be a natural process when two localities of different size and economic power meet, and the smaller and inferior one represents an obstacle for the development of the largest one. Agglutination is carried out gradually but quite rapidly, especially in the case of urban assimilation. It is eventually acknowledged administratively by transforming the incorporated village into part of the urban locality as residential neighbourhood. Thus the functions of the former village change, along with landscape alterations, according to the needs of the city (Fig. 13). In this case, most often the residential needs prevail, and the rural settlement is converted into residential neighbourhood with individual housing facilities (Fig. 14).

Fig. 13. Settlement with agglutinated built-up area by a city. The case of Mureșeni village, Târgu Mureș Municipality, Mureș County, Romania *(Source: Google maps)*

Fig. 14. Settlement with agglutinated built-up area by a city and transformed into residential neighbourhood. The case of Mureșeni village, Târgu Mureș Municipality, Mureș County, Romania *(Source: Google maps)*

Following the completion of agglutination process of the former settlement, the aim is to maximise the advantages provided by the newly integrated territory. In order to ensure the development of the monopolizing urban settlement, public

authorities shall initiate a comprehensive development process: upgrade urban infrastructure (construction of new housing), rehabilitate technical infrastructure and street network, and set up public services and new economic activities.

v. Settlements with unidentifiable built-up area. Results show that 25 of the disappeared villages have been depopulated for more than 20 years at national level and built-up area proves difficult to be identified. The settlement suffered total material destruction. The site is either absorbed into the natural environment or was assigned another economic use (agricultural, industrial, etc.). Villages, whose site can no longer be identified today, disappeared before the '90s of the 20th century, when Romania went through rural systematization process, under the communist rule. The former policy provisioned the forced displacement of population from unviable rural settlements, demolition of settlement and changing the land use either into industrial or agricultural. Subsequently, dozens of villages and their inhabitants disappeared without a trace, being displaced from their former site and relocated in urban residential neighbourhoods and assimilated by the industrialization process, transforming peasants into industrial labour force.

vi. Seasonally inhabited localities (whole built-up area). Results show that 2 of the disappeared villages at national level are depopulated but the built-up area is partially or entirely maintained due to seasonal living. Even though affected by depopulation, these settlements have retained the built-up area entirely or partly. They are seasonally inhabited by the descendants of former owners. In cases where geographical position, potential of communication, or local resources are available and attractive, they can become tourist villages. Although changing the initial function of the village, by setting up tourist-related facilities and accommodation infrastructure, the regeneration of the settlement can become visible. (Fig. 15).

These cases are not especially numerous, although it should become a rule and also a solution to save some of the endangered localities (Fig. 16).

In the case of Iesle village of Mălini commune, Suceava County, taken as an example for this category, we can note that it met only favourable conditions to further maintain built-up area and enhance seasonal living due to its geographical position in the mountainous area, the highly attractive landscape, presence of modernized roads, water and wood resources, electricity, etc. These circumstances favoured not only the seasonal living but even the regeneration of settlement through investments in tourism accommodation infrastructure (lodges, guesthouses and secondary residences). This determined the beginning of the regeneration of the village by filling the built-up area with new constructions. It is therefore the ideal solution for any village in state of decline, thus being able to ensure the continuity of existence.

Fig. 15. Settlement with whole built-up area with seasonal living. The case of Iesle village, Mălini commune, Suceava County, Romania *(Source: Google maps)*

Fig. 16. Settlement with whole built-up area with seasonal living. The case of Iesle village, Mălini commune, Suceava County, Romania *(Source: Google maps)*

vii. Settlements with built-up areas flooded by artificial lakes (destroyed by the construction of dams for water accumulation). Results show that 8 of the disappeared villages at national level could be included in this category. They represent the extreme cases of localities that disappeared fortuitously by the construction of artificial lakes. Such situations were registered in Romania

before 1989, during the socialist regime, when electricity consumption grew due to accelerated industrialization, and the energy potential of the internal rivers was valorised at maximum. Thus, several accumulation lakes were built over three decades, some of them extending over territories occupied by settlements (Beliș-Fântânele, Tarnița, Gilău I and II on Someșul Cald River, Stânca Costești on Prut River, Bicaz on Bistrița River, Vidraru on Argeș River, etc.). In such cases, some of the most important settlements were relocated to a new site, being entirely rebuilt, for instance Beliș locality, in Cluj county. The old village is now covered by the waters of Beliș-Fântânele Lake. Others were abandoned, and their inhabitants being forcibly relocated. These abandoned settlements were flooded by artificial lakes, or reservoirs in mining areas, being invisible in the current landscape, only traces of them and life stories maintaining over time.

Fig. 17. Settlement with built-up area flooded by artificial lake. The case of Giurcuța de Jos village, Cluj County, Romania *(Source: Google maps)*

Another notorious example is the village of Geamăna, Lupșa commune, Alba County, which disappeared due to the construction of a tailings pond (Valea Șesii pond) for the gold and silver mining activities in the area. Only some of the households remained, the rest of them being on the bottom of the lake next to the village church. Today the area is strongly affected by chemical pollution and cyanide, while the remaining residents are affected by many diseases associated with pollution, particularly cancer.

Fig. 18. The flooded remainings of Giurcuța de Jos village, Cluj County, Romania. The ruins of the Orthodox Church observed when emptying the accumulation lake *(Source: http://subversiv.info/locuri-de-o-frumusete-rara-bisericile-scufundate-din-romania/)*

Fig. 19. The flooded remainings of Geamăna village, Lupșa commune, Alba County, Romania. The ruins of the Orthodox Church *(Source: Google maps)*

Such cases of settlements cannot be recovered and regenerated for housing, thus remaining just sad examples of the Romanian "golden age".

viii. Settlements with built-up area destroyed by flooding. Results show that 2 of the disappeared villages at national level could be included in this category. They were villages located in floodplains and which suffered total destruction during catastrophic flood events with high flows (e.g. the floods in 1970). These settlements were not rebuilt on the former sites, due to the high risk of flooding reoccurrence and consequently they disappeared, the population being relocated in the nearby villages. The best example in this case is Filiu village, belonging to Bordei Verde commune in Brăila County, which was completely destroyed during floods in 1970, due to its location in low plains, where water stagnated for a long period of time.

Fig. 20. The ruins of the Orthodox Church in Filiu village, Brăila County, destroyed by floods in 1970 *(Source: https://commons.wikimedia.org/wiki/File:2013_-_Biserica_din_satul_Filiu_comuna_Bordei_Verde_in_ruina_-_Exterior. png)*

Most of the buildings here were made of bricks dried in the sun. This construction material swollen from excessive moisture and thus all houses were destroyed. The testimony for the existence of this village is represented by the ruins of the Orthodox Church and cemetery, the site of the former village being given agricultural use during the ample process of rural systematization.

Nationally, the disappearance of localities by destruction caused by floods is particularly specific to river basins, such as Someș-Tisa, Mureș, Siret, Prut and others.

3.3. Effects of settlement disappearance

Undoubtedly, the disappearance of settlements entails multiple effects socially (particularly culturally), economically, ecologically and territorially, some of them having only local repercussions, while others reverberating to regional and even national scale. The social effects are represented by the dissolution of human communities that lived within the village and the loss of cultural heritage generated throughout their existence. It directly entails depopulation of the territory and decrease in economic polarization. The decrease of economic polarization brings out other economic negative effects such as: disappearance of some local production centres, destruction of facilities and equipment with subsequent effects on the exploitation of local resources (land, subsoil etc.), abandonment of agricultural land and degradation through fallow, destruction of public service facilities that were developed with material and financial resources of the local communities, destruction of transport and communication infrastructure, etc. Altogether, social and economic effects lead to negative manifestation of territorial effects, most notably being the decreasing degree of spatial accessibility affected by the disappearance of settlements. This inevitably leads to isolation and finally it re-enters the natural cycle. Another territorial effect is felt in the settlements system, balanced through actions of administrative-territorial reorganization. This way, such administrative units are dismantled and new ones are created by merging the unviable ones or by transferring villages from one commune to another. Another side effect of the disappearance of settlements appears at the political level, this phenomenon being somewhat speculated especially for electoral purposes, being frequently indicated by the opposition as an example of territorial mismanagement on behalf of the local authorities and interested decision makers.

4. CONCLUSIONS

Rural and urban settlement evolution is a continuous process. Among the majors factors affecting the evolution and development of rural settlements are demographic ageing and migration. Nevertheless, the dynamics of urban settlements is the most visible and significantly approached by the specialists in the field. Still, the dynamics of rural settlements are of the same importance and have implications in the development and functionality of the rural areas. Most of the international and national researchers and policy-makers are focused on the factors affecting the evolution or development, on the partial effects of these factors or on the revitalization of rural areas economically, socially or environmentally.

In this study we aimed to highlight the perceptible changes in the number of rural settlements, revealing the disappearance of a significant number of villages mostly due to depopulation in an almost three-decade period in Romania (1992-

2016). At this point, the phenomenon of settlement disappearance has become a certainty in Romania's development. Along with the weak policies for local development and the non-involvement of the state in this issue over the past 25 years, more and more settlements have been declining demographically and economically and subsequently they disappeared. The spatial changes are noticeable and highlighted in the case of 182 villages at national level, each of them being classified into a certain category according to their structural remains. Other settlements in Romania are already being placed on trajectories of sharp involution seeming doom to disappear in the next decade. All these will have wider negative effects socially, economically and territorially, which is a proof that Romania is also subject to internal vulnerability. We therefore estimate that, in the next decade, the extinction rate of settlements in Romania will increase up to almost double the current value based on ageing and depopulation of existing settlements.

Even though it is such an important aspect in the functionality and development of rural areas, the transition of villages from birth to disappearance, and especially the phase of immediate or late decline, proves to be insufficiently insisted on in the European or national strategies for rural development and planning. They should promote and implement action plans focused on the regulation of the trend and not only to solve problems that may be irreversible in some cases. The ultimate purpose in the end should be to increase village resilience and enhance the power of their communities to adapt socially, environmentally and economically.

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APPENDIX 1.

List of depopulated and disintegrated settlements in Romania after 1990. Administrative location, number of population officially recorded at the 1992, 2002 and 2001 censuses, state of built-up area and geographical location.

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
1	Bordeştii Poieni	Vidra	Alba	12	1	0	3	Munţii Apuseni (Depresiunea Câmpeni)
2	Capu Dealului	Cenade	Alba	11	3	**	2	Podişul Secaşelor
3	Cărpenii de Sus	Şpring	Alba	4	0	0	3	Podişul Secaşelor
4	Cicârd	Lopadea Nouă	Alba	7	0	0	3	Dealurile Lopadei (Pod. Târnavei Mici)
5	Doptău	Şona	Alba	0	0	0	3	Dealurile Lopadei (Pod. Târnavei Mici)
6	Flitești	Municipiul Blaj	Alba	4	4	0	3	Podişul Secaşelor
7	Geamăna	Lupşa	Alba	7	1	0	3	Munţii Apuseni (Munţii Metaliferi)
8	Hărăşti	Vidra	Alba	9	0	0	3	Munţii Apuseni (Depresiunea Câmpeni)
9	Ibru	Blandiana	Alba	9	3	0	1	Munţii Apuseni (Munţii Metaliferi)
10	Inceşti	Poşaga	Alba	3	0	0	3	Munţii Apuseni (Masivul Muntele Mare)
11	Joldişeşti	Sohodol	Alba	18	14	0	2	Munţii Apuseni (Masivul Găina)
12	Medreşti	Sohodol	Alba	6	4	0	3	Munţii Apuseni (Masivul Găina)
13	Toci	Sohodol	Alba	14	8	0	2	Munţii Apuseni
14	Poieni	Vidra	Alba	15	0	0	5	Munţii Apuseni (Depresiunea Câmpeni)
15	Şasa	Lupşa	Alba	25	17	**	2	Munţii Apuseni (Munţii Metaliferi)
16	Petreni	Bucium	Alba	10	6	**	3	Munţii Apuseni (Munţii Metaliferi)
17	Zărieş	Mihalţ	Alba	0	8	4	2	Culoarul Mijlociu al Mureşului

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
18	Aluniș	Mioarele	Argeș	6	7	**	5	Subcarpații Getici
19	Bădila	Valea Iașului	Argeș	4	3	**	1	Subcarpații Getici
20	Ruginoasa	Valea Iașului	Argeș	8	2	0	3	Subcarpații Getici
21	Bolovănești	Mușătești	Argeș	5	3	**	3	Subcarpații Getici
22	Bordeieni	Godeni	Argeș	7	0	0	1	Subcarpații Getici
23	Zăvoi	Oras Ștefănești	Argeș	0	0	1053	4	Piemontul Cândești Câmpia Română
24	Bălănești	Dealu Morii	Bacău	5	2	**	3	Podișul Central Moldovenesc
25	Boboș	Dealu Morii	Bacău	4	0	0	3	Podișul Central Moldovenesc
26	Bostănești	Dealu Morii	Bacău	2	5	**	5	Podișul Central Moldovenesc
27	Dorofei	Dealu Morii	Bacău	7	1	0	3	Podișul Central Moldovenesc
28	Boiștea de Jos	Coțofănești	Bacău	16	29	0	2	Subcarpații de Curbură
29	Bota	Ungureni	Bacău	0	0	0	5	Podișul Central Moldovenesc
30	Coștei	Săucești	Bacău	0	0	0	5	Culoarul Siretului
31	Poiana	Colonești	Bacău	0	0	**	5	Podișul Central Moldovenesc
32	Tisa	Sănduleni	Bacău	6	4	0	3	Subcarpații de Curbură
33	Țâgâra	Plopana	Bacău	0	0	0	5	Podișul Central Moldovenesc
34	Valea Fânaţului	Secuieni	Bacău	0	0	0	3	Podișul Central Moldovenesc
35	Pădureni	Viișoara	Bihor	2	2	**	3	Dealurile Viișoarei
36	Brădeanca	Jirlău	Brăila	0	0	0	5	Câmpia Bărăganului
37	Deșiraţi	Scorţaru Nou	Brăila	0	0	0	5	Câmpia Bărăganului
38	Nicolae Bălcescu	Scorţaru Nou	Brăila	0	0	0	4	Câmpia Bărăganului
39	Filiu	Bordei Verde	Brăila	0	0	0	8	Câmpia Bărăganului
40	Gura Gârluţei	Berteștii de Jos	Brăila	6	0	0	2	Lunca Dunării
41	Moroteşti	Unirea	Brăila	0	0	0	3	Câmpia Bărăganului
42	Nedeicu	Mărașu	Brăila	0	0	0	5	Lunca Dunării

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
43	Nicoleşti	Berteştii de Jos	Brăila	0	0	0	5	Lunca Dunării
44	Bold	Manoleasa	Botoşani	0	0	0	5	Câmpia Moldovei
45	Şerpeniţa	Manoleasa	Botoşani	0	0	0	3	Culoarul Prutului
46	Cinghiniia	Ripiceni	Botoşani	0	0	0	3	Culoarul Prutului
47	Lehneşti	Ripiceni	Botoşani	0	0	0	7	Culoarul Prutului
48	Movila Ruptă	Ripiceni	Botoşani	0	0	0	7	Culoarul Prutului
49	Popoaia	Ripiceni	Botoşani	0	0	0	3	Culoarul Prutului
50	Râşca	Ripiceni	Botoşani	0	0	0	7	Culoarul Prutului
51	Ripicenii Vechi	Ripiceni	Botoşani	0	0	0	7	Culoarul Prutului
52	Livada	Dobârceni	Botoşani	0	0	0	5	Câmpia Moldovei
53	Româneşti-Vale	Româneşti	Botoşani	0	0	0	3	Câmpia Moldovei
54	Cervicești-Deal	Mihai Eminescu	Botoşani	4	11	0	1	Câmpia Moldovei
55	Tăuteşti	Ungureni	Botoşani	0	0	0	3	Câmpia Moldovei
56	Valea Grajdului	Unţeni	Botoşani	0	0	0	5	Câmpia Moldovei
57	Vultureni	Unţeni	Botoşani	0	0	0	3	Câmpia Moldovei
58	Brădeanca	Verneşti	Buzău	0	0	0	2	Câmpia Bărăganului
59	Comisoaia	Zărneşti	Buzău	0	0	0	3	Câmpia Bărăganului
60	Grabicina de Sus	Scorţoasa	Buzău	111	3	0	5	Câmpia Bărăganului
61	Tătuleşti	Padina	Buzău	0	0	0	3	Câmpia Bărăganului
62	Andici	Ceanu Mare	Cluj	0	0	0	3	Colinele Luduşului
63	Morţeşti	Ceanu Mare	Cluj	11	3	5	3	Colinele Luduşului
64	Stârcu	Ceanu Mare	Cluj	17	9	6	3	Colinele Luduşului
65	Borşa-Crestaia	Borşa	Cluj	2	0	0	4	Dealurile Clujului (Podişul Someşan)
66	Giurcuţa de Jos	Beliş	Cluj	0	0	0	7	Platoul Padeşului
67	Lunca Bonţului	Fizeşu Gherlii	Cluj	0	0	0	3	Dealurile Sicului (Câmpia Transilvaniei)
68	Peştera	Municipiul Dej	Cluj	0	0	0	3	Dealurile Dejului (Podişul Someşan)

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
69	Alexandru I. Cuza	Oraş Fundulea	Călăraşi	0	0	0	2	Câmpia Română (Câmpia Nana)
70	Codreni	Gurbăneşti	Călăraşi	0	0	0	3	Câmpia Română (Câmpia Nana)
71	Libertatea	Dichiseni	Călăraşi	0	0	0	3	Câmpia Română (Câmpia Călăraşului)
72	Lunca	Valea Argovei	Călăraşi	0	0	0	7	Câmpia Română (Câmpia Nana)
73	Preasna Veche	Gurbăneşti	Călăraşi	0	0	0	3	Câmpia Română (Câmpia Nana)
74	Stoeneşti	Modelu	Călăraşi	0	0	0	1	Câmpia Română (Câmpia Călăraşului)
75	Valea Seacă	Oraş Lehliu Gară	Călăraşi	0	0	0	5	Câmpia Română (Câmpia Lehliului)
76	Bratova	Târnova	Caraş-Severin	11	47	0	1	Dealurile Ezerişului (Dealurile de Vest)
77	Boiniţa	Dalboset	Caraş-Severin	18	17	**	3	Depresiunea Bozovici
78	Lindenfeld	Buchin	Caraş-Severin	1	0	0	2	Munţii Semenic
79	Preveciori	Băuţar	Caraş-Severin	19	10	**	2	Munţii Poiana Ruscă
80	Curcani	Cobadin	Constanţa	0	19	4	2	Câmpia Română (Câmpia Călăraşului)
81	Grăniceru	Oraş Negru Vodă	Constanţa	0	0	0	3	Câmpia Română (Câmpia Călăraşului)
82	Straja	Cumpăna	Constanţa	0	0	0	7	Podişul Medgidiei (Podişul Dobrogei)
83	Cărpinenii	Estelnic	Covasna	4	0	**	2	Munţii Nemira (Carpaţii Orientali)
84	Merişor	Sita Buzăului	Covasna	0	0	0	3	Munţii Întorsurii (Carpaţii Orientali)
85	Bucicani	Predeşti	Dolj	16	7	**	2	Piemontul Băliciţei
86	Predeştii Mici	Predeşti	Dolj	17	24	3		Piemontul Băliciţei
87	Caraiman	Brabova	Dolj	0	0	0	3	Piemontul Băliciţei
88	Cetăţuia	Vela	Dolj	2	0	0	3	Piemontul Băliciţei
89	Chiaşu	Oraş Dăbuleni	Dolj	0	0	0	3	Lunca Dunării
90	Gruiţa	Goieşti	Dolj	28	3	0	2	Podişul Tesluiului
91	Italieni	Bucovăţ	Dolj	0	0	0	2	Piemontul Băliciţei
92	Malaica	Cerăt	Dolj	48	0	0	3	Câmpia Băileştilor
93	Zlatari	Goieşti	Dolj	8	0	0	2	Podişul Tesluiului

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
94	Găleşoaia	Câlnic	Gorj	260	140	0	3	Depresiunea Târgu-Jiu
95	Fundeni	Fundeni	Galaţi	0	0	0	4	Culoarul Inferior al Siretului
96	Huştiu	Priponeşti	Galaţi	0	0	0	5	Podişul Central Moldovenesc
97	Baştea	Lăpugiu de Jos	Hunedoara	5	0	0	2	Dealurile Lăpugiului
98	Bejan-Târnăviţa	Şoimuş	Hunedoara	5	2	**	2	Munţii Zărandului
99	Bunești	Balşa	Hunedoara	10	0	0	3	Munţii Metaliferi (Munţii Apuseni)
100	Ciumiţa	Lunca Cernii de Jos	Hunedoara	4	0	0	3	Munţii Poiana Ruscă
101	Copaci	Toteşti	Hunedoara	5	3	0	3	Depresiunea Haţegului
102	Curpenii Silvaşului	Topliţa	Hunedoara	0	0	0	3	Munţii Poiana Ruscă
103	Dragu-Brad	Blăjeni	Hunedoara	13	6	**	3	Munţii Apuseni (Masivul Găina)
104	Goteşti	Răchitova	Hunedoara	10	3	**	2	Munţii Poiana Ruscă
105	Mesteacăn	Răchitova	Hunedoara	25	11	0	2	Munţii Poiana Ruscă
106	Mosoru	Topliţa	Hunedoara	3	1	0	3	Munţii Poiana Ruscă
107	Roşia	Balşa	Hunedoara	17	7	**	3	Munţii Apuseni (Munţii Metaliferi)
108	Ticera	Bulzeştii de Sus	Hunedoara	13	1	0	3	Munţii Apuseni (Masivul Găina)
109	Făgeţel	Remetea	Harghita	19	4	**	2	Depresiunea Gheorgheni
110	Martonca	Remetea	Harghita	0	0	0	2	Depresiunea Gheorgheni (Carpaţii Orientali)
111	Hosasău	Leliceni	Harghita	1	1	0	2	Depresiunea Ciucului (Carpaţii Orientali)
112	Sântimbru-Băi	Sântimbru	Harghita	0	0	0	6	Munţii Harghitei (Carpaţii Orientali)
113	Şaşvereş	Praid	Harghita	0	0	0	2	Depresiunea Sovata
114	Ţengheler	Ditrău	Harghita	0	0	0	2	Depresiunea Gheorgheni
115	Vargatac	Municipiul Gheorgheni	Harghita	16	8	7	3	Depresiunea Gheorgheni (Carpaţii Orientali)
116	Amara Nouă	Amara	Ialomiţa	0	0	7	4	Câmpia Română (Câmpia Bărăganului)
117	Retezatu	Stelnica	Ialomiţa	33	0	0	3	Lunca Dunării

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
118	Bran	Golăieşti	Iaşi	1	0	0	3	Culoarul Prutului
119	Nevăţu	Balta	Mehedinţi	0	0	0	3	Podişul Mehedinţi
120	Satu Nou	Punghina	Mehedinţi	0	0	0	3	Câmpia Băileştilor
121	Angofa	Municipiul Sighişoara	Mureş	4	4	**	3	Podişul Vânători
122	Bârlibăşoaia	Albeşti	Mureş	0	0	0	3	Dealurile Dumbrăveni (Podişul Târnavei Mare)
123	Valea Dăii	Albeşti	Mureş	7	4	0	2	Colinele Comlodului
124	Valea Şapartocului	Albeşti	Mureş	6	223	0	3	Podişul Vânători
125	Dalu	Sânger	Mureş	8	6	0	2	Colinele Luduşului (Câmpia Transilvaniei)
126	După Deal	Cuci	Mureş	0	0	0	3	Colinele Comlodului
127	Fânaţe	Fărăgău	Mureş	22	13	**	2	Colinele Comlodului
128	Hodaia	Fărăgău	Mureş	0	0	0	3	Colinele Mădăraşului
129	Onuca	Fărăgău	Mureş	102	71	0	1	Colinele Mădăraşului (Câmpia Transilvaniei)
130	Lăpuşna	Ibăneşti	Mureş	71	1	**	1	Munţii Burghiului
131	Linţ	Cheţani	Mureş	4	2	0	5	Colinele Luduşului
132	Loţu	Oraş Sângeorgiul de Pădure	Mureş	15	6	**	2	Podişul Târnavei Mari
133	Mălăeşti	Valea Larga	Mureş	13	5	**	3	Dealurile Comlodului
134	Maldaoci	Aţintiş	Mureş	0	0	0	3	Podişul Târnăveni
135	Mureşeni	Municipiul Târgu Mureş	Mureş	970	947	0 ***	4	Culoarul Mureşului
136	Obârşie	Râciu	Mureş	5	3	**	3	Colinele Comlodului
137	Fântâna Babii	Pogăceaua	Mureş	2	0	0	2	Colinele Comlodului (Câmpia Transilvaniei)
138	Porumbac	Oraş Iernut	Mureş	53	32	3	3	Colinele Mădăraşului
139	Racameţ	Oraş Iernut	Mureş	33	26	0	3	Colinele Comlodului
140	Şandru	Papiu Ilarian	Mureş	2	0	0	4	Colinele Comlodului
141	Plugari	Urecheni	Neamţ	18	9	**	3	Culoarul Moldovei
142	Spieşti	Pastrăveni	Neamţ	7	4	**	5	Culoarul Moldovei

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
143	Rudari	Scărişoara	Olt	0	0	0	3	Lunca Oltului
144	Bozieni	Fântânele	Prahova	76	1	**	2	Subcarpaţii Curburii
145	Crângurile	Baba Ana	Prahova	0	0	0	2	Subcarpaţii Curburii
146	Gresia	Starchiojd	Prahova	17	8	**	3	Subcarpaţii Curburii
147	Plăieţu	Măneciu	Prahova	0	0	0	2	Munţii Ciucaşului (Carpaţii Orientali)
148	Ulmi	Oraş Urlaţi	Prahova	0	0	0	5	Subcarpaţii Curburii
149	Valea Oprii	Cornu	Prahova	0	0	0	2	Subcarpaţii Curburii
150	Crinţ	Oraş Sălişte	Sibiu	1	0	0	2	Munţii Cindrelului
151	Mighindoala	Seica Mare	Sibiu	11	2	**	2	Podişul Secaşelor
152	Pădureni	Camăr	Sălaj	0	0	0	5	Dealurile Vulturilor
153	Poiana Măgura	Şărmăşag	Sălaj	33	11	3	2	Culmea Şimleului (Dealurile de Vest)
154	Ţărmure	Şărmăşag	Sălaj	5	1	**	3	Dealurile Vulturilor (Dealurile de Vest)
155	Cucu	Odoreu	Satu Mare	0	0	0	3	Câmpia Someşană (Câmpia de Vest)
156	Eteni	Odoreu	Satu Mare	0	0	0	8	Câmpia Someşană (Câmpia de Vest)
157	Ganaş	Acâş	Satu Mare	0	6	0	5	Câmpia Tăşnadului (Câmpia Transilvaniei)
158	Văgaş	Tarna Mare	Satu Mare	0	6	0	3	Munţii Oaş (Carpaţii Orientali)
159	Groapa Vlădichii	Moara	Suceava	0	0	0	3	Podişul Sucevei
160	Iesle	Mălini	Suceava	0	0	0	6	Munţii Suhardului (Carpaţii Orientali)
161	Şesuri	Cârlibaba	Suceava	35	12	**	2	Valea Bistriţei
162	Ardealu	Dorobanţu	Tulcea	0	0	0	5	Munţii Măcinului
163	Câşliţa	Chilia Veche	Tulcea	1	13	0	3	Delta Dunării
164	Ostrovu Tătaru	Chilia Veche	Tulcea	0	0	0	3	Delta Dunării
165	Stânca	Casimcea	Tulcea	0	0	0	3	Podişul Casimcei (Podişul Dobrogei)
166	Bunea Mică	Oraş Făget	Timiş	0	0	0	3	Dealurile Lipovei
167	Checheş	Secaş	Timiş	0	7	0	3	Dealurile Lipovei
168	Cireşu Mic	Criciova	Timiş	0	0	0	3	Dealurile Lugojului

No. crt.	Village	Commune Town	County	No. of population			* State of the built-up area	Geographical unit
				1992	2002	2011		
169	Nadăș	Oraș Recaș	Timiș	0	0	0	2	Dealurile Lipovei
170	Dărvaș	Bujoreni	Teleorman	0	0	0	1	Câmpia Română (Câmpia Câlniștei)
171	Viile	Scrioastea	Teleorman	8	5	0	2	Câmpia Română (Câmpia Iminogului)
172	Țeica	Oraș Ocnele Mari	Vâlcea	77	0	0	3	Subcarpații Getici
173	Pietroasa	Tâmboești	Vrancea	172	0	0	1	Subcarpații Curburii
174	Siretu	Oraș Mărășești	Vrancea	0	0	0	4	Culoarul Inferior al Siretului
175	Albina	Ivănești	Vaslui	0	0	3	2	Podișul Central Moldovenesc
176	Botoi	Dragomirești	Vaslui	0	0	0	2	Podișul Central Moldovenesc
177	Dealu Secării	Poienești	Vaslui	6	0	**	3	Podișul Central Moldovenesc
178	Hordila	Pungești	Vaslui	0	0	0	3	Podișul Central Moldovenesc
179	Plopeni	Bogdana	Vaslui	0	0	0	3	Podișul Central Moldovenesc
180	Răducani	Lunca Banului	Vaslui	9	2	**	5	Culoarul Prutului
181	Satu Nou	Banca	Vaslui	0	0	0	3	Podișul Central Moldovenesc
182	Todireni	Pădureni	Vaslui	0	0	0	5	Podișul Central Moldovenesc

Notes:

* Condition of the built-up area
1 - existing built-up area
2 - partially existing built-up area
3 - nonexistent built-up area
4 - agglutinated built-up area
5 - unidentifiable built-up area
6 - whole built-up area with seasonal living
7 - built-up areas flooded by artificial lakes
8 - built-up areas destroyed by flooding

** less than three inhabitants were registered

*** locality integrated within the administrative borders of Târgu Mureș municipality