

THE CHARACTERISTICS OF THE HABITAT COMPONENT OF MUREȘ DEFILE

G. B. TOFAN¹

ABSTRACT. – **The Characteristics of the Habitat Component of Mureș Defile.** The habitat component of Mureș Defile is almost entirely rural, consisting of 11 rural settlements grouped in three communes, and the village of Bistra Mureșului (Deda commune), and Văgani, part of Toplița Town, which is actually a rural settlement. This analysis is mainly concentrated on the three communes (Stânceni, Lunca Bradului and Răstolița), starting with the setting up of a settlement hierarchy for the localities that make up the regional microsystem of Mureș Defile, represented by two systems (Toplița and Reghin), which in turn have their own subsystems (Stânceni and Lunca Bradului for Toplița, and Răstolița and Deda for Reghin), which enabled the identification of specific typologies for this area. In terms of the numerical evolution and housing dynamics of the area, of the last decades, there is a slight increase in the number of houses, which was not caused by population growth, but by the population needs and the increase in comfort requirements, as well as by higher incomes, in some situations, due to the migration of a relatively small population segment abroad, for work.

Keywords: *buildings, settlements built-up areas, typologies, rental fund, households.*

1. INTRODUCTION

This study is a continuation of the study concerning the geodemographic characteristics (the evolution of the number of inhabitants, population distribution and population structure) of Mureș Defile, written by G. B. Tofan in 2014. The settlement network was strongly influenced by the elements of the natural framework (relief, hydrography, topoclimate, forested areas and swamps, etc.), human communities adapting their habitats according to the above mentioned elements, which led, in time, to a strong and permanent correlation between the settlement territorial organisation and its built-up area.

Similarly to the adjacent areas, this territory was and still has a civilisation influenced by the existence of forests, a fact reflected in the constructions and architecture of the area. The settlements' origins and their development are firmly based in the existing natural, historical and economic factors, the most prominent being social-economic, more exactly the existence of large tracts of forests, which led to the development of logging industries, also facilitated by Mureș River, which allowed the growth of the most intensive

¹ Babeș-Bolyai University, Faculty of Geography, 400006, Cluj-Napoca, Romania, e-mail: george.tofan@ubbcluj.ro

industrial rafting operations in Romania (L. Someșan, 1938). To this, one can add the hayfields and the pastures that favoured animal husbandry, which is a secondary activity for the people living in the area.

The archaeological sites are almost nonexistent across the defile. In Neagra village, a 9th century ceramic bowl was uncovered, presumably belonging to a population on the move, as this area was covered by large forests, but at the same time these areas could have harboured smaller groups, who later might have established the existing settlements.

The Roman road, not marked by ancient itineraries, followed Mureș Valley, and was identified as starting from Deda all the way to Scaun Peak (Scaunul Domnului).

The rurality of this microsystem is proven by its structure, comprising several villages acting as commune seats (three villages) and other smaller villages, hierarchically structured and characterised by relations of interdependence with one another.

Therefore, from East to West, one mentions *Stânceni Commune* with the villages of Ciobotani, Stânceni and Meștera, then *Lunca Bradului Commune* with the villages of Neagra, Lunca Bradului and Sălard, followed by *Răstolița* with Andreneasa, Răstolița, Iod, Borzia and Gălăoaia, then the village of Bistra Mureșului, part of *Deda*.

As for urban areas, beginning with 1956, Vâgani is part of Toplița Town, but it has a rural population from economic and social points of view.

Returning to the hierarchical structure of Toplița-Deda regional microsystem, one can observe that many current villages were hamlets belonging to different villages nearby, until 1956. For example, Ciobotani village, a hamlet that belonged to Toplița, was declared a village on 10th January 1956, belonging to Stânceni Commune, followed by Meștera and Neagra, former hamlets of Stânceni, separately registered and declared villages in 1956, the former being included in Stânceni Commune, while the latter to Lunca Bradului Commune.

On the same year (1956), Sălard was declared a village, part of Lunca Bradului (former hamlet of Lunca Bradului), Andreneasa was a hamlet of Lunca Bradului in 1910, while in 1956 it became a village, part of Răstolița Commune, Iod and Borzia, hamlets of Filea, Deda Commune (in 1910), both became villages of Răstolița in 1956; Gălăoaia, hamlet of Răstolița, was declared a village belonging to Răstolița in 1956. Răstolița and Bistra Mureșului received village status in 1956, the first one as part of Răstolița Commune and the second one included in Deda Commune.

From a hierarchical standpoint, we have two tiers of settlements, represented by commune seats (Stânceni, Lunca Bradului, Răstolița, and partially Deda) and villages proper (Ciobotani, Stânceni, Meștera, Neagra, Lunca Bradului, Sălard, Andreneasa, Răstolița, Iod, Borzia, Gălăoaia and Bistra Mureșului), plus Vâgani, part of Toplița, which, according to its typology, can be considered a level IV settlement. The entire settlement network has undeniable connections with the “outside”, East with Giurgeu inner mountain depression, and West with the Transylvanian Depression (V. Mara, Daniela Mara, 2004).

Due to this outward polarisation, in conjunction with a series of factors like *distance, habitat, economic and administrative aspects*, two systems were outlined, each with several subsystems, identified at regional level with county seats (Miercurea-Ciuc for Harghita County and Târgu-Mureș for Mureș County), followed by two zonal centres

(second tier). The first one is *Toplița*, which polarizes the eastern part of the defile, from Vâgani to Lunca Bradului, as these settlements are closer to this urban centre than to Reghin, even though Toplița is part of another county (Harghita). The second one is *Reghin* that polarizes the western part, including Răstolița and Deda subsystems, with a high percentage of active population working in the secondary and tertiary sectors of Reghin.

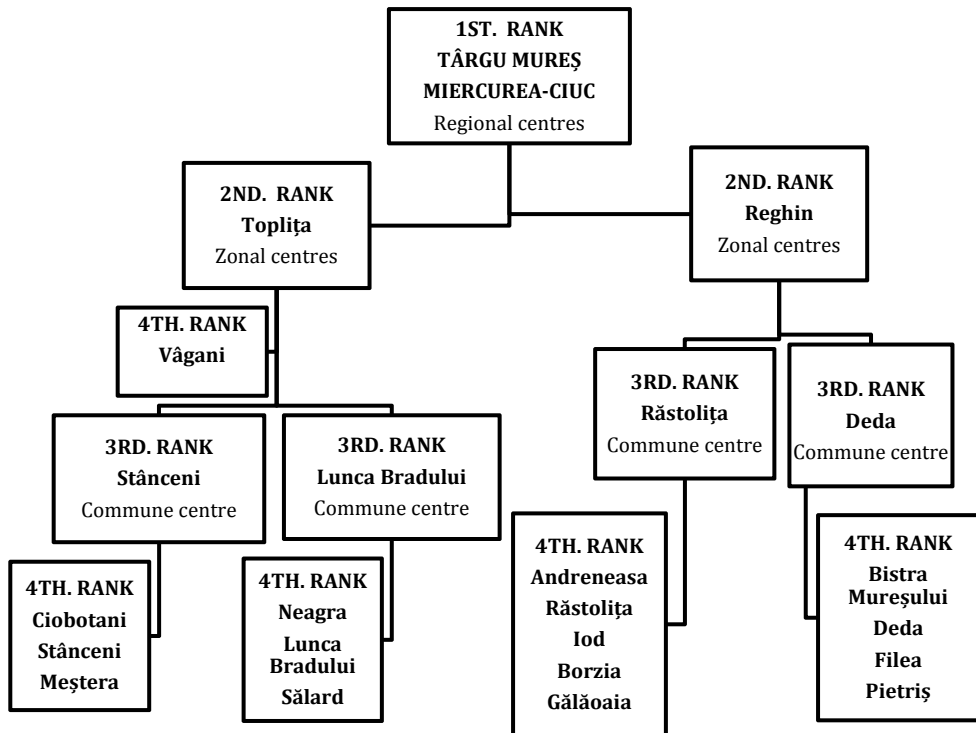


Fig. 1. The ranking of polarising centres for the population of Mureș Defile.

2. THE EVOLUTION OF THE ADMINISTRATIVE ORGANISATION

An important role in the establishment of the settlements' administrative limits was played by the physical-geographic factors (mainly the terrain configuration), but also by other factors, such as demography, politics, the economy, etc.

After the 1848 revolution, the Habsburgs introduced a military-administrative organization under the name of „*military districts*”, divided in circles run by circle commissars. In 1850, the settlements at hand belonged to *Gurghiu Circumscription*, *Pietriș Circle*, *Reteag Military District*, followed by the formation of civil administrative circles comprised of prefectures, for the entire Transilvania, divided in districts, which means that in 1900, Stânceni, Lunca Bradului, Răstolița belonged to *Mureș-Turda County*, *Reghin de Sus District*.

At the 1930 census, Mureş County (Târgu-Mureş as a seat) was an administrative unit, part of the Kingdom of Romania, composed of seven districts: *Band*, *Miercurea Nirajului*, *Mureş* (later divided into *Mureş de Sus* and *Mureş de Jos*), *Râciu*, *Teaca*, *Reghin*, (*Reghin de Sus*, including *Bistra Mureşului* and *Reghin de Jos*), *Gurghiu* and *Topliţa*, encompassing ten settlements: *Bilbor*, *Borsec*, *Corbu*, *Gălăuţaş*, *Sârmaş*, *Subcetate*, *Topliţa*, *Stânceni*, *Lunca Bradului* and *Răstoliţa*.

Another change became evident at the 1956 census, when the counties were changed into regions. The settlements under discussion were included in *the Hungarian Autonomous Region, Topliţa District*. The same year, the hamlet of Vâgani became a component of Topliţa. Beginning with the month of February 1968, due to the law adopted by the Grand National Assembly, the administrative-territorial division based on counties was reinstated (it is still in effect today). Vâgani became part of the actual town of Topliţa, Harghita County, while Stânceni, Lunca Bradului and Răstoliţa communes became part of Mureş County. In 1998, with the establishment of development regions (The Green Charter of Regional Development in Romania, 1998), this territory was integrated in the Centre Development Region – with the seat in Alba-Iulia.

3. RURAL SETTLEMENTS TYPOLOGY

There are three essential components in the establishment of structural typologies and models for rural settlements (population, built-up area and territory), as well as a series of geographical factors (terrain configuration, topoclimate, hydrography, vegetation, pedology etc), and social-economic ones (population dynamics and evolution, demographic structures, economic activities, administrative-territorial organization), that have different influences during the evolution of the territorial microsystem.

Therefore, rural settlements of the area can be defined and quantified, through a series of geographic indicators, such as: *population density within the built-up area*, *spatial distribution*, *built-up area shape, size and structure*, *residential area*, *architectural specificities of the elementary habitat (household)*.

For a better knowledge of settlement physiognomy and especially its structure, we use the indicator that expresses *population density within the built-up area*, in order to emphasize the level of population concentration within the built-up area, as well as building concentration.

After analysing the values of built-up area surfaces from the analysed territory, one can observe the fact that some have very large built-up areas, more than 400 ha, such as Stânceni (496.1 ha) and Lunca Bradului (455.3 ha), while Răstoliţa, with an administrative territory of 26598 ha, has a built up area of just 127 ha. In 2011, there were extremely different population densities within the built-up area: 16.1 inhabitants/ha in Răstoliţa, 4.3 inhabitants/ha in Lunca Bradului and 2.8 inhabitants/ha in Stânceni.

The spatial distribution of rural settlements was analysed by studying two main aspects: quantitative distribution and morphological distribution. The former can be calculated using several indicators: *settlement density*, *settlement areality coefficient*, *average distance between settlements*, *dispersion index*, *concentration index*, etc.

The administrative territory belonging to the rural settlements of Stânceni, Lunca Bradului and Răstoliţa basins cover 720.8 km² altogether.

The calculated average density for the entire rural administrative territory is 0.4 settlements/100 km², due to the presence of mountain areas, a value that is considerably lower than the national average (5.5 settlements/100 km²).

The highest density is registered in Stânceni (administrative surface of 124.56 km² and three settlements), with 2.4 settlements/100 km², followed by Răstolița (265.98 km² and five settlements), with 1.8 settlements/100 km² and Lunca Bradului (330.32 km² and three settlements), with 0.9 settlements/100 km².

The *areality coefficient* registers a value of 240.2 km²/settlement, considerably higher than the national average (18.1 km²/settlement), as the administrative surface of each commune is very large in comparison to the number of villages included. Thus we have the following situation: Lunca Bradului (110.1 km²/settlement), Răstolița (53.2 km²/settlement) and Stânceni (41.5 km²/settlement).

The *average distance between two settlements* for the area of Stânceni-Lunca Bradului-Răstolița, calculated based on the above mentioned coefficient, has a value of 18.6 km, higher than the national level (5.1 km). There are higher values for Lunca Bradului (12.6 km) and Răstolița (8.7 km).

In order to find the degree of people grouping in settlement built-up areas, one can apply *the dispersion index method*. Analysing the values of the dispersion index for administrative units gives us a view of a not so spectacular evolution, commune centres having a more considerable demographic potential than the encompassing villages.

There are values over the 1.0 threshold found in Răstolița, 1.3 in four villages, and Stânceni with 1.0 with two villages, while Lunca Bradului is below 1.0 (0.5 with two villages).

The pull exerted by the centre - commune seat for each administrative unit can be found using the indicator called *communal centres polarizing potential*, having a general value of eight inhabitants/settlement, the largest value being found in the commune with most villages (Răstolița, four inhabitants/settlement).

The basins that make up this alignment decrease in altitude from east to west, settlements built-up areas being found between 500-700 m (Stânceni, 680 m, Răstolița, 530 m and Lunca Bradului 524 m), as the largest built-up surfaces are found on meadows and terraces, belonging to Mureș and its main tributaries.

Most settlements have an *irregular shape*, which indicates a spontaneous land occupation, spreading progressively during different historic periods, along Mureș River and the main communication routes especially the main lines, with linear settlement cores (Ciobotani, Meștera, Neagra). There are built-up areas with a *simple linear texture* (Ciobotani, Meștera, Neagra, Andrenea) and *linear-tentacular*, along the valleys and the main road (Stânceni, Lunca Bradului, Răstolița and Bistra Mureșului).

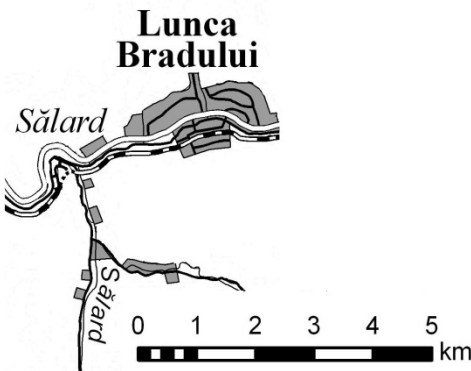


Fig. 2. Lunca Bradului-a commune with a linear-tentacular texture, following valleys and the main road.

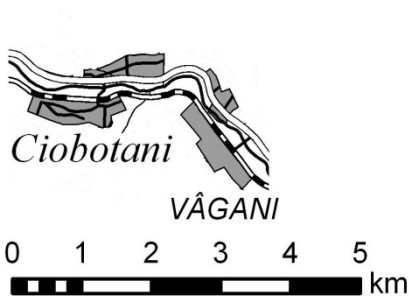


Fig. 3. Vâgani and Ciobotani-settlements displaying a simple linear texture, along the main road.

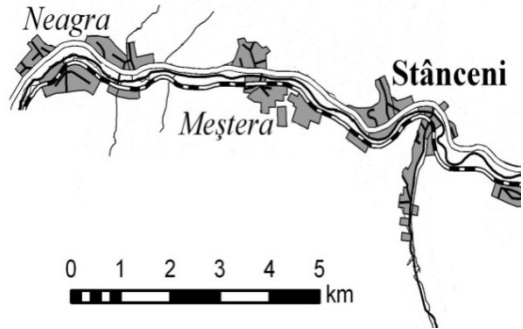


Fig. 4. Stânceni- a village with a linear-tentacular texture, developed along valleys and the main road; Meștera, Neagra – villages with a simple linear texture, along the main road.

In accordance to the terrain characteristics, most rural settlements along the defile have a *gathered-elongated shape*, with households on both sides of the main road (E 578) and Mureș River, as well as a *scattered-elongated one*, the built-up areas being positioned along secondary valleys (Gudea Valley, Sălard, Bistra).

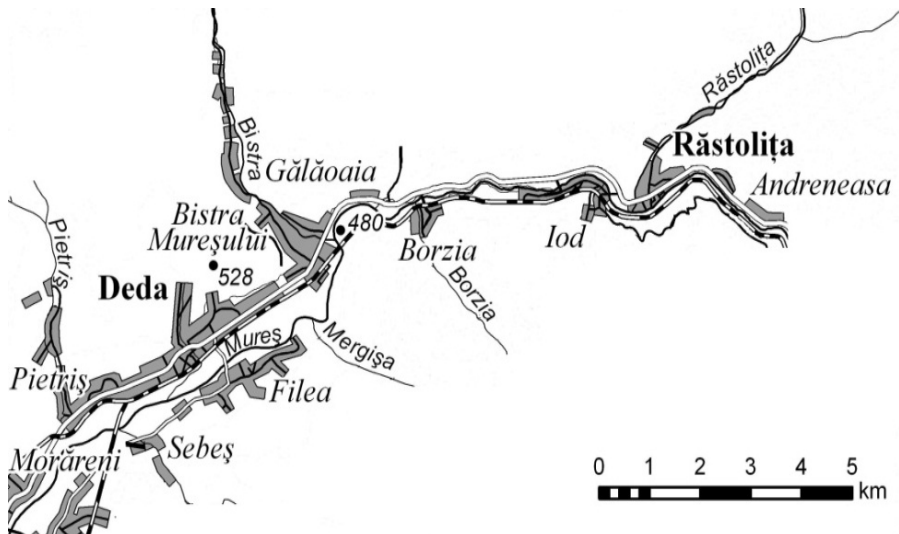


Fig. 5. Răstolița, Bistra Mureșului- villages with a linear-tentacular texture, developed along valleys and the main road.

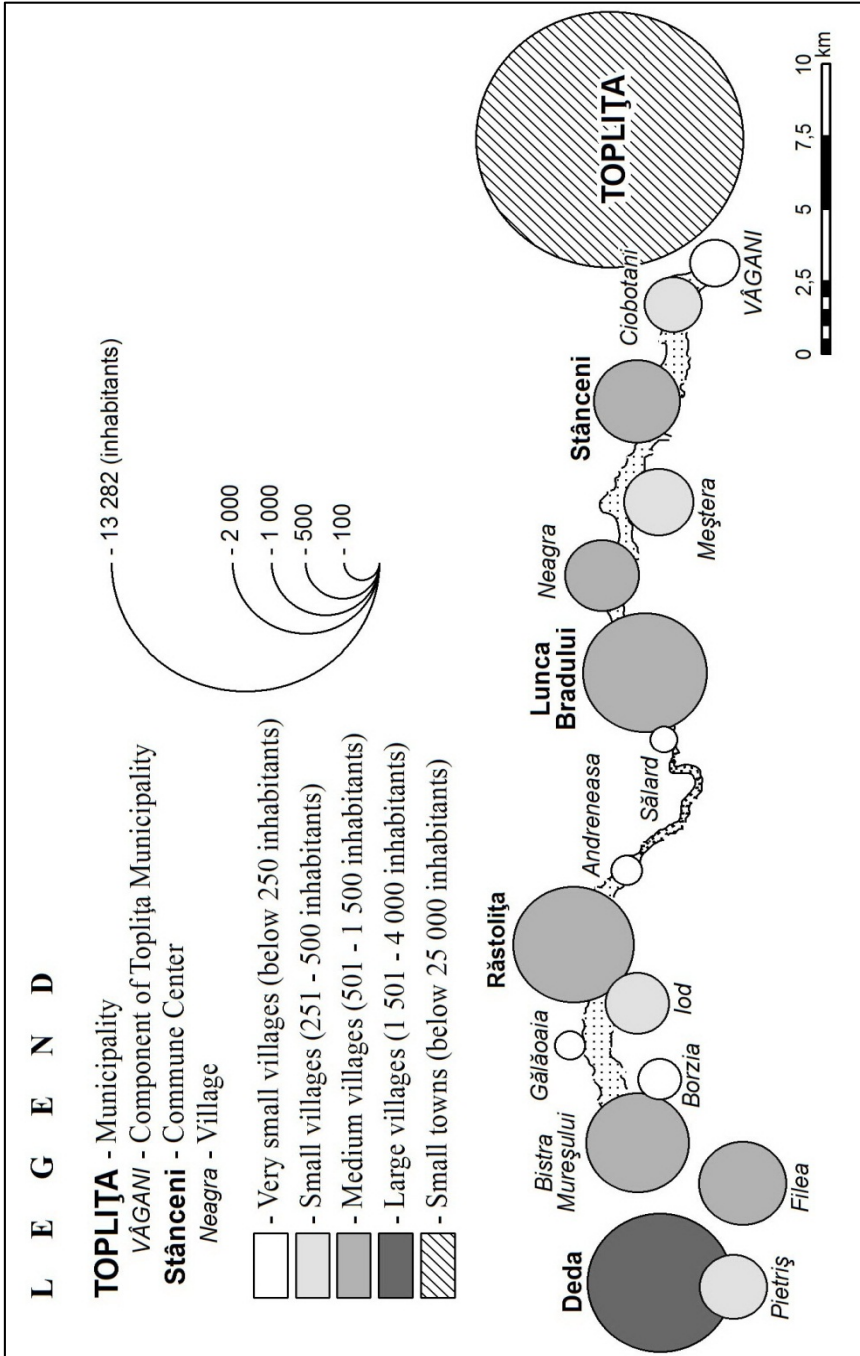


Fig. 6. The demographic size of the settlements of Mureș Defile, 2011.

According to the data from the 2011 census, in terms of *demographic size*, Stânceni, Lunca Bradului and Răstolița communes, together with Bistra Mureșului, that belongs to Deda, have 6455 inhabitants, and can be grouped into four categories: *very small rural settlements* (under 250 inhabitants), which includes four settlements: Sălard (66 inhabitants), Andreneasa (87 inhabitants), Gălăoia (81 inhabitants) and Borzia (169 inhabitants), concentrating 6.3% of the population; *small rural settlements* (251-500 inhabitants), such as Ciobotani (305 inhabitants), Meștera (443 inhabitants) and Iod (374 inhabitants), representing 17.3% of the defile population and *medium rural settlements* (501 - 1500 inhabitants) as the villages of Neagra (504 inhabitants), Stânceni (682 inhabitants), Bistra Mureșului (980 inhabitants), Răstolița (1342 inhabitants) and Lunca Bradului (1422 inhabitants), 76.4% of the total rural population of the defile.

In terms of *rural economic activities*, one can observe that all settlements have an *agricultural function*, mainly animal husbandry and logging, but taking into account a series of aspects (like predominant activities, land use), there are two functional types: *animal husbandry-logging settlements* (Ciobotani, Meștera, Neagra, Lunca Bradului, Sălard, Andreneasa, Iod, Borzia, Gălăoia) and *settlements with mixed agricultural-industrial functions* (Stânceni, Răstolița).

In terms of *habitation time* within the year, the rural settlements of the area fall under two categories: *temporary households* (tourism, forestry and hunting lodges, permanent or mobile sheepcotes, „odăi” - small houses, huts), situated far from commune centres, used by locals especially in summer, during mowing, and in autumn, when the herds return from the surrounding mountains, and more developed *permanent settlements*, such as hamlets and villages.

4. THE HABITATIONAL FUND

This component can be analysed through a series of indicators like: *total number of buildings according to their construction period, number of households, number of permanent and seasonal households, type of ownership, the endowment level, construction permits per type of buildings* etc.

Regarding the total number of buildings, according to their construction period, one might observe that constructions built before 1990 do not basically exist anymore (two buildings in Bistra Mureșului, three in Lunca Bradului and one in Răstolița). Between 1900 and 1944, due to the economic progress boosted by the development of logging and industrial rafting, and also by the communication infrastructure (railway and road network), there was a rapid population increase in the area, leading to the creation of large logging centres (Lunca Bradului, Stânceni, Răstolița, Bistra Mureșului).

Until 1990, there was a roughly uniform development in terms of constructions, but during 1992-2002 period, in Lunca Bradului, due to the existence of the Logging and Transport Enterprise, a boom was experienced, with 436 buildings.

At the 2011 census, in the three analysed communes, a total of 3 025 buildings were registered, as follows: Lunca Bradului (1 177 buildings), Răstolița (1 041 buildings) and Stânceni (807 buildings).

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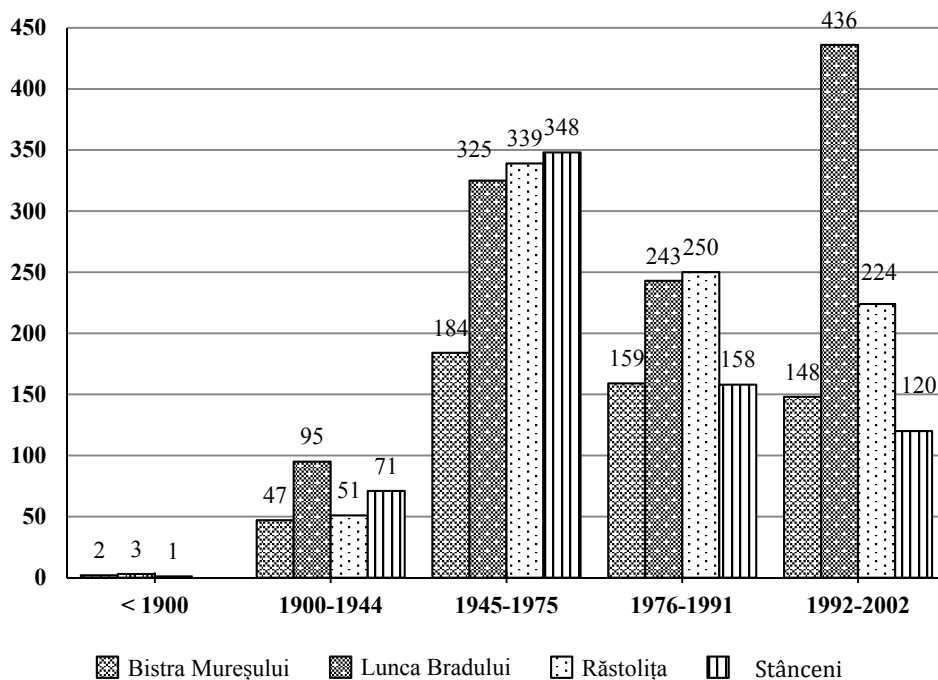


Fig. 7. The total number of buildings, according to construction period, in Mureș Defile.

Regarding the second aspect to be presented, *the number of households*, the statistical data from the last censuses show a slight increase by 0.3% in 2011 compared to 2002 (2038 households in 2002 and 2044 in 2011). However, there is a different situation at commune level, as the number of households dropped in Lunca Bradului from 770 in 2002 to 726 in 2011, while Răstolița witnessed an increase from 712 households in 2002 to 768 in 2011.

The agricultural surface/household, in 2011, has values between 6.5-8.1 ha/household, while the *arable surface/household* registers low values, due to a reduced extent of arable lands, only 0.06 ha/household in Răstolița, from a 50 ha arable surface, 0.1 ha/household in Lunca Bradului, from 80 ha and 0.2 ha/household in Stânceni, from 138 ha.

For the population of Toplița-DedaDefile, forests have always been an important source of income, in some periods being their only means of survival.

Houses and animal shelters are exclusively made of wood, their heating being provided by stoves using wood. In terms of *forest area/household*, the microregional average is 26.1 ha/household, while, at administrative level, the highest values can be found in Lunca Bradului commune (33.7 ha/household, with 24456 ha forest), followed by Răstolița (26.5 ha/household, with 20 364 ha forest) and Stânceni with just 15.5 ha/household, out of 8 568 ha).

In terms of *demographic size*, most households are composed of 2-3 members, the average, according to the 2011 census, being 2.6 people/household, a decrease compared to 2002 (3.0 people/household), at administrative level, slightly higher values being found only in Lunca Bradului (2.74 people/household). In terms of the *component spatial association pattern*, the defile is characterized by households with detached components, with one or two living quarters, the main building having its front in the street, while the smaller building, used mostly during summer, being found in the back. The buildings for agriculture and other destinations are also in the back, and comprise a large building, with a cattle and sheep barn, pig sties and bird enclosures and spaces for hay. Courtyards are usually large, the nonfunctional spaces taking, in most cases, almost half the surface of the courtyard, spaces of recreation being uncharacteristic.

Living quarters, the essential component of settlement built-up areas from a functional as well as physiognomic point of view, built mainly from wood and only later from brick and cellular concrete, increased from 2591 in 1992 to 3455 in 2011, the highest growth rate being registered in Lunca Bradului commune (1130 existing quarters at the end of 1992 and 1459 in 2011). In 2002, out of total of 3 272 living quarters, with 7538 rooms (127473 m²), 2018 were permanent, with 4458 rooms (75700 m²) and 1254 were seasonal, with 3080 rooms (51 773 m²).

In 2011, out of total of 3 455 living quarters registered in the three communes, there was an increase in the number of privately owned houses from 91.6% in 2002 to 94.4% in 2011, while group private properties decreased from 4.0% in 2002 to 3.6% in 2011, a similar process found in the case of state owned properties - from 3.8% to 1.8%, and properties of religious entities from 0.6% in 2002 to 0.08% in 2011. There were also two living quarters that were cooperatively owned (one) and associatively owned (one), in Răstolița, in 2011.

When it comes to the *endowment level of conventional households with installations and outbuildings*, following the natural tendency of household increase, the last decade witnessed an ascending trend of houses with superior endowments, such as: 58.0% have running water and sewage system, either public or private, 51.5% have bathrooms, 98.1% have electricity, while the number of houses with their own heating systems increased (from 1.3% in 2002 to 8.6% in 2011) and more than 80% have a kitchen, either inside or outside the house.

Another two important indicators for the analysis of Mureș Defile's housing infrastructure (in 2011) are the *livable surface area/household*, small living quarters being the ones that predominate, with values between 38.3 and 41.0 m²/household, and *livable surface area/inhabitant*, between 22.2 and 30.0 m²/household.

An increase was observed in the number of construction permits, but there are many constructions that have been erected illegally, without any permit, the situation in 2011, at administrative level, being the following: 18 permits were issued for residential buildings, meaning 855 m² of usable surface in Stânceni and 980 m² usable surface in Răstolița. Three permits were issued for Lunca Bradului, with a usable surface of 286 m², and one permit for other types of buildings in Lunca Bradului (127 m²) and one in Răstolița (925 m²).

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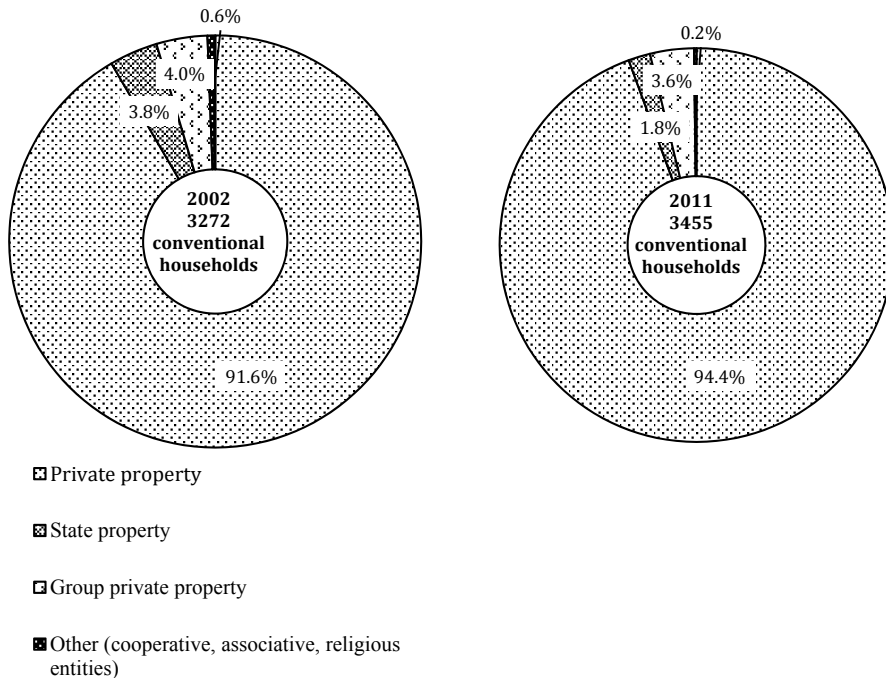


Fig. 8. Conventional housing by type of property, in 2002 and 2011, in Mureș Defile.

5. CONCLUSIONS

By quantifying a set of synthetic indicators, we were able to present the characteristics of Mureș Defile habitat, from three communes (Stânceni, Lunca Bradului and Răstolița), emphasizing the following aspects: population density within the built-up area varies considerably, due to large built-up areas, over 400 ha, in Stânceni and Lunca Bradului; settlement density for the entire administrative area being 0.4 settlements / 100 km², with a 240.0 km²/settlement areality coefficient, caused by the large administrative area of each commune compared to the number of villages; the average distance between two settlements being 18.6 km, with an average dispersion index of 1.0-1.3 and a polarizing potential of 8 inhabitants/settlement. In terms of built-up area shape, there are irregular, linear shapes being found in Ciobotani, Meștera, Neagra, Andreneaș villages, while textures can either be simple linear or linear-tentacular ones. From a demographic standpoint, there are no large rural settlements, over 70% of the total rural population being concentrated in average sized settlements, with a population between 501- 1500 inhabitants (Neagra, Stânceni, Bistra Mureșului, Răstolița and Lunca Bradului), that, functionally, fit in the category of animal husbandry-logging settlements and mixed agricultural-industrial settlements. In terms of housing, there is a general ascending trend due to an increased demand for housing and comfort.

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