

# THE CONDITION OF THE BUILT ENVIRONMENT IN THE NATURAL PROTECTED AREAS ROSCI0045 JIU CORRIDOR, ROSPA0010 BISTREȚ AND THE NATURAL RESERVES DRĂNIC FOSSIL SITE-2391 AND ZĂVAL FOREST- IV.33+A6

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## Abstract

The paper addresses the condition of the built environment in the protected areas ROSCI0045 Jiu Corridor, ROSPA0010 Bistreț, and the Natural Reserves Drănic Fossil Site-2391 and Zăval Forest- IV.33+A6, considering three specific indicators: the number of housing units, the livable area, and the number of building permits issued. These protected areas play a crucial role in biodiversity conservation within the component administrative units (56 in total, including 37 in Dolj County, 17 in Gorj County, one in Mehedinți County, and one in Olt County) where they are located.

The number of housing units increased from 208,602 in 2017 to 222,680 in 2021, a trend observed predominantly in private properties. The built area for the entire region grew from 10,276,212 m<sup>2</sup> in 2017 to 11,162,886 m<sup>2</sup> in 2021. Overall, the area exhibits both ascending and descending trends regarding the number of building permits issued.

The increase in the number of housing units may lead to potentially adverse effects on the protected natural areas. However, with proper urban planning, this negative impact can be mitigated.  
**Key words:** housing, natural gas, living area, building permits

## INTRODUCTION

The areas of the protected sites ROSCI0045 Jiu Corridor, ROSPA0010 Bistreț, and the Natural Reserves Drănic Fossil Site-2391 and Zăval Forest-IV.33+A6 are distributed across Dolj County (1 municipality, 4 towns, and 32 communes), Gorj County (2 towns, 15 communes), Mehedinți County, and Olt County (one commune each).

The increase in the number of housing units can have significant implications for the protected natural areas for several reasons: loss of natural habitats, pollution, pressure on resources, and increased tourism activity.

The increase in the number of housing units near protected natural areas requires appropriate urban planning and management to minimize the negative impact on the natural environment. Measures such as establishing buffer zones, creating and conserving urban

green spaces, and afforestation for biodiversity protection can be implemented.

To maintain a balance between urban development and the conservation of natural sites, several measures can be undertaken, such as integrated urban planning; protecting green spaces, using sustainable construction techniques; promoting sustainable transportation; community education and involvement in land planning and management; and promoting education and awareness regarding the importance of conserving natural sites and the environment. Waste management measures, protecting natural resources, and promoting responsible tourism around protected natural areas are essential, along with establishing rules and restrictions regarding urban development.

## METHOD AND MATERIAL

For the preparation of the work, the documentation method was used (office phase and field phase - using official statistical data and visits within the area at the level of the administrative-territorial units) and comparison. The analysis covers the period from 2017 to 2021, mentioning the changes that have occurred.

The indicators presented are: the number of housing units, living area, and building permits issued for constructions. These indicators are presented at the county level - based on the situation of the administrative-territorial units included in the protected areas -, as well as by residential environments (urban, rural) – the first two, as a general level, by types of buildings (individual residential buildings and for communities, administrative buildings, hotels and similar buildings, buildings for wholesale and retail trade,

and other buildings) and residential environments – the last indicator.

## RESULTS AND DISCUSSIONS

Table 1 contains data referring to the number of housing units.

In Dolj County, the total number of housing units varied from 174,105 to 188,590, of which approximately 0.44% are public housing units (798 and 820 units respectively), and 99.56% are private housing units (173,307 and 187,770 units respectively).

Compared to 2017, the year 2021 shows increase of 8.32%, 2.76%, and 8.35% for the total number of housing units, public property, and private property, respectively (Figure 1). Under these conditions, we can state that in Dolj County, there has been an increase in the number of housing units.

Table 1. Number of dwellings \*

Specification	Year		2021/2017 (%)**
	2017	2021	
Dolj County			
Total, of which:	174,105	188,590	108.32
- Public property	798	820	102.76
- Private property	173,307	187,770	108.35
Gorj County			
Total, of which:	31,380	30,966	98.68
- Public property	465	440	94.62
- Private property	30,915	30,526	98.74
Mehedinți County			
Total, of which:	1,568	1,568	100.0
- Private property	1,568	1,568	100.0
Olt County			
Total, of which:	1,549	1,556	100.45
- Private property	1,549	1,556	100.45
Total general**			
Total, of which:	208,602	222,680	106.75
- Public property	1,263	1,260	99.76
- Private property	207,339	221,420	106.79
- Urban	130,939	142,595	108.90
- Rural	77,663	80,085	103.12

\* processed by: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, LOC101B- Existing dwellings at the end of the year by forms of property, counties and localities (12.04.2023);

\*\* own calculations;

In Gorj County, the total number of housing units was 31,380 in 2017 and 30,966 in 2021, reflecting a decrease of 1.32%. Of these, 1.48% were public property in 2017 (465 units) and 1.42% in 2021 (440 units). Private housing units

were predominant, with 30,915 units in 2017 and 30,526 units in 2021. Figure 1 shows the evolution of these indicators from 2017 to 2021, with a decrease of 5.38% in public property and 1.26% in private property.

In Mehedinți County, the number of housing units remained unchanged during the analyzed period, with 1,568 units, all privately owned.

In Olt County, the number of privately owned housing units increased from 1,549 to 1,556 units between 2017 and 2021, reflecting a growth of 0.45%.

For the overall area, there was an increase in the total number of housing units from 208,602 in 2017 to 222,680 in 2021, reflecting a growth of 6.75%. This increase was observed across most categories, except for publicly owned housing, which saw a slight decline of 0.24%, from 1,263 to 1,260 units. Significant increases were noted in privately owned housing units, which rose by 14,081 units (+6.79%), urban housing units, which increased by 11,656 units (+8.90%, from 130,939 to 142,595 units between 2017 and 2021), and rural housing units, which grew by 2,422 units (+3.12%, from 77,663 to 80,085 units over the same period). The relative variations in the indicator (total, public ownership, private ownership) are illustrated in Figure 1.

Table 2 contains data related to the livable area.

In Dolj County, the livable area increased from 8,796,683 m<sup>2</sup> in 2017 to 9,691,600 m<sup>2</sup> in 2021. Private ownership dominated this increase, with figures rising from 8,770,236 m<sup>2</sup> to 9,664,722 m<sup>2</sup>. Sequentially, this represents increases of 10.17%, 1.63%, and 10.20% for the total area, public sector (from 26,447 m<sup>2</sup> to 26,878 m<sup>2</sup>), and private sector, respectively.

In Gorj County, the livable area ranged from 1,332,281 m<sup>2</sup> in 2021 to 1,341,041 m<sup>2</sup> in 2017. Of this, public ownership accounted for 11,539 m<sup>2</sup> in 2021 and 12,189 m<sup>2</sup> in 2017, while private ownership figures were 1,320,688 m<sup>2</sup> and 1,328,852 m<sup>2</sup>, respectively. This represents relative decreases of 0.35%, 4.89%, and 0.61% in the public sector, private sector, and overall area, respectively (see Figure 2).

Butoiești commune, in Mehedinți County, has an invariable built area, at the level of

2017 and 2021, of 59,276 m<sup>2</sup>, all privately owned.

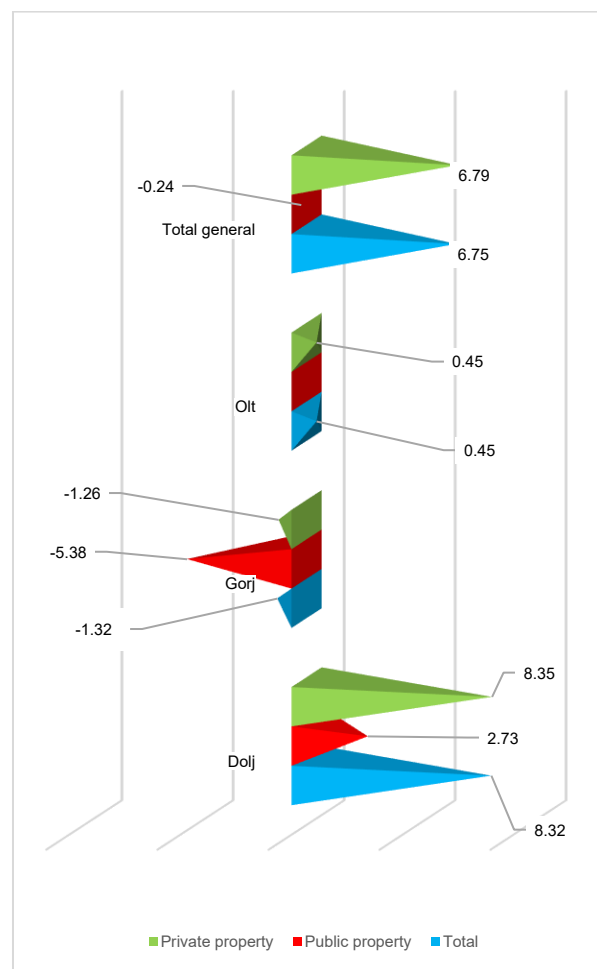


Fig. 1. Number of dwellings, Comparative situation 2021vs2017 (±% - processed after: [www.insse.ro](http://www.insse.ro))

In the case of Ianca commune, in Olt County, we are talking about an increase in the living area from 79,212 to 79,729 m<sup>2</sup>, from 2017 to 2021 (+0.65% in relative units).

At the general level of the area, the indicator increased from 10,276,212 to 11,162,886 m<sup>2</sup> from 2017 to 2021, for which private property was predominant (about 99.64% of the total), holding between 10,237,576 and 11,124,415 m<sup>2</sup>, at the level of the two years. The indicator increased in 2021 by 8.63, 8.66, 10.21 and 5.56% at the general level, for private property, urban areas (6,782,338 and 7,474,793 m<sup>2</sup>) and rural areas (3,493,874 and 3,688,093 m<sup>2</sup> respectively), while at the level of public property there is a

decrease in the indicator by 0.43% (from 38,636 to 38,471 m<sup>2</sup>).

Table 2. Living area (m<sup>2</sup>)\*

Specification	Year		2021/2017 (%)**
	2017	2021	
Dolj County			
Total, of which:	8,796,683	9,691,600	110.17
- Public property	26,447	26,878	101.63
- Private property	8,770,236	9,664,722	110.20
Gorj County			
Total, of which:	1,341,041	1,332,281	99.35
- Public property	12,189	11,593	95.11
- Private property	1,328,852	1,320,688	99.39
Mehedinți County			
Total, of which:	59,276	59,276	100.0
- Private property	59,276	59,276	100.0
Olt County			
Total, of which:	79,212	79,729	100.65
- Private property	79,212	79,729	100.65
Total general**			
Total, of which:	10,276,212	11,162,886	108.63
- Public property	38,636	38,471	99.57
- Private property	10,237,576	11,124,415	108.66
- Urban	6,782,338	7,474,793	110.21
- Rural	3,493,874	3,688,093	105.56

\* processed by: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, LOC103B- Existing habitable area at the end of the year by property forms, counties and localities (12.04.2023);

\*\* own calculations;

The relative variations of the indicator are shown in Figure 2.

Analyzing the average habitable area, it can be seen that it registered about 50 m<sup>2</sup> at the general level, respectively for privately owned dwellings, 30.50 m<sup>2</sup> in the case of publicly owned dwellings, 52 m<sup>2</sup> for urban areas and 45-46 m<sup>2</sup> for rural areas.

Table 3 presents the specific data for building permits issued for various types of buildings. We mention, from the beginning, the fact that for the ATUs of Cârna, Dobrești, Gighera, Rojiște (Dolj County) and Bărbătești (Gorj County) no authorization was issued during the analyzed period.

In the case of Dolj County, the total number of authorizations increased from 816 to 998 units from 2017 to 2021 (+22.30%). By type of building, things were as follows: +31.73% for individual residential buildings (from 687 to 905 units); stationary situations in the case of

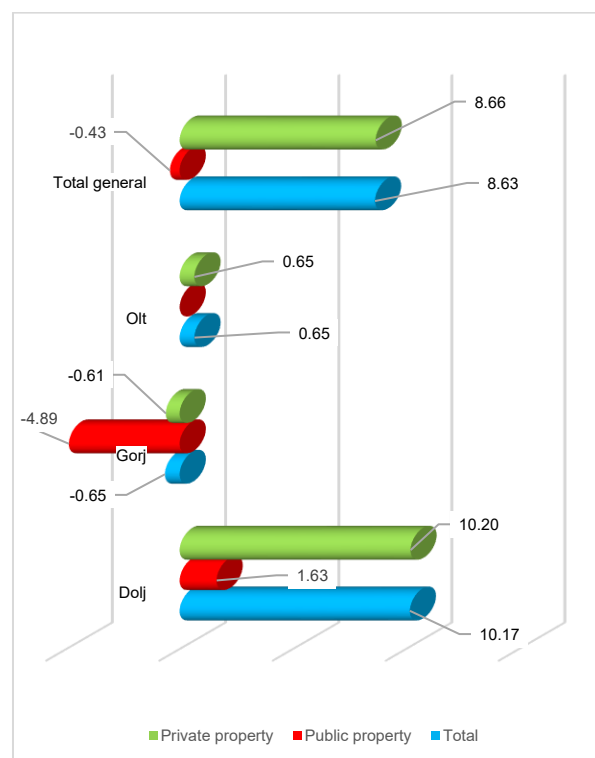


Fig. 2. Living area, Comparative situation 2021vs2017 (±% - processed after: [www.insse.ro](http://www.insse.ro))

Table 3. Building permits issued for buildings  
by type of construction \*

Specification	Year		2021/2017 (%)**
	2017	2021	
Dolj County			
Total, of which:	816	998	122.30
- residential buildings (excluding those for communities)	687	905	131.73
- residential buildings for communities	1	1	100.0
- administrative buildings	7	7	100.0
- hotels and similar buildings	6	5	83.33
- buildings for wholesale and retail trade	34	12	35.29
- other buildings	81	68	83.95
Gorj County			
Total, of which:	103	135	131.07
- residential buildings (excluding those for communities)	93	124	133.33
- residential buildings for communities	1	-	-
- administrative buildings	1	-	-
- buildings for wholesale and retail trade	3	3	100.0
- other buildings	5	6	120.0
Mehedinți County			
Total, of which:	4	4	100.0
- residential buildings (excluding those for communities)	4	3	75.0
- other buildings	-	1	-
Olt County			
Total***, of which:	2	6	300.0
- residential buildings (excluding those for communities)	2	4	200.0
- hotels and similar buildings	-	1	-
- other buildings	-	1	-
Total general**			
Total, of which:	925	1,139	123.14
- residential buildings (excluding those for communities)	786	1,033	131.42
- residential buildings for communities	2	1	50.0
- administrative buildings	8	7	87.50
- hotels and similar buildings	6	8	133.33
- buildings for wholesale and retail trade	37	15	40.54
- other buildings	86	75	87.21
- urban	495	510	103.03
- rural	430	629	146.28

\* processed after: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>, LOC108B- Building permits issued for buildings by construction types, counties and localities (12.04.2023);

\*\* own calculations;

residential buildings for communities and administrative buildings (1 and 7 authorizations respectively); -16.67% for hotels and similar buildings (variation from 6 to 5 authorizations); -64.71% in the case of commercial buildings (34 respectively 12 authorizations); -16.05% for other buildings (81 authorizations in 2017, respectively 68 authorizations in 2021).

In Gorj County, the indicator increased by 31.07% at general level (from 103 to 135 permits – 2017 and 2021 respectively), by 33.33% for residential buildings that are not used for communities (from 93 to 124 permits), by 20.0% for other buildings (5 to

6 permits respectively), it remained constant in the case of buildings used for commercial purposes (3 permits), while for administrative buildings and residential buildings related to collectivities, no authorizations were issued in 2021, while for 2017 there was one authorization issued.

In Mehedinți County (Butoiești), the total number of permits issued was constant (4), but the permits for residential buildings used for individual use decreased (from 4 to 3) and an authorization for other buildings appeared in 2021.



The commune of Inaca, in Olt County, is characterized by a 3-fold increase in the total number of building permits between 2017 and 2021 (from 2 to 6), by doubling the number of permits for residential buildings of personal interest (from 2 to 4 permits) and by issuing an authorization for hotels and other buildings (we mention that, for these two categories of constructions, no permit had been issued in 2017).

At the general level of the analyzed area, there are both upward and downward trends related to the number of building permits issued. Thus, we are talking about increases for the total number (23.14% - from 925 to 1,139), individual residential buildings (31.42%, 786 respectively 1,033 permits), hotels and similar buildings (33.33% - from 6 to 8), buildings in urban areas (3.03% - 495 and 510 permits respectively), buildings in rural areas (46.28% - from 430 permits in 2017 to 629 permits in 2021). Decreases were manifested for: administrative buildings (12.50% - from 8 to 7 authorizations), other buildings (12.79% - 86 respectively 75 authorizations), residential buildings for communities (50.0% - from 2 to 1 authorizations), buildings with commercial purpose (59.46% - 37 respectively 15 authorizations).

Figure 3 shows the comparative situation of the number of building permits

## CONCLUSIONS

As for the number of dwellings, there is an upward trend of the indicator (except for Gorj county and publicly owned housing), with slight to moderate variations of the indicator (from -5.38 to +8.90%). It is worth noting the constant situation specific to Butoiești commune.

If we refer to the habitable area, observes its increase, in general, with the exception of Gorj County (from -0.61 to -4.89%), publicly owned housing (-0.43%) and Butoiești commune (equal situation). The increases were "normal", from 0.65% in lanca (Olt County), to 10.21% in the urban area at the general level of the area

(almost double the increase compared to the rural area).

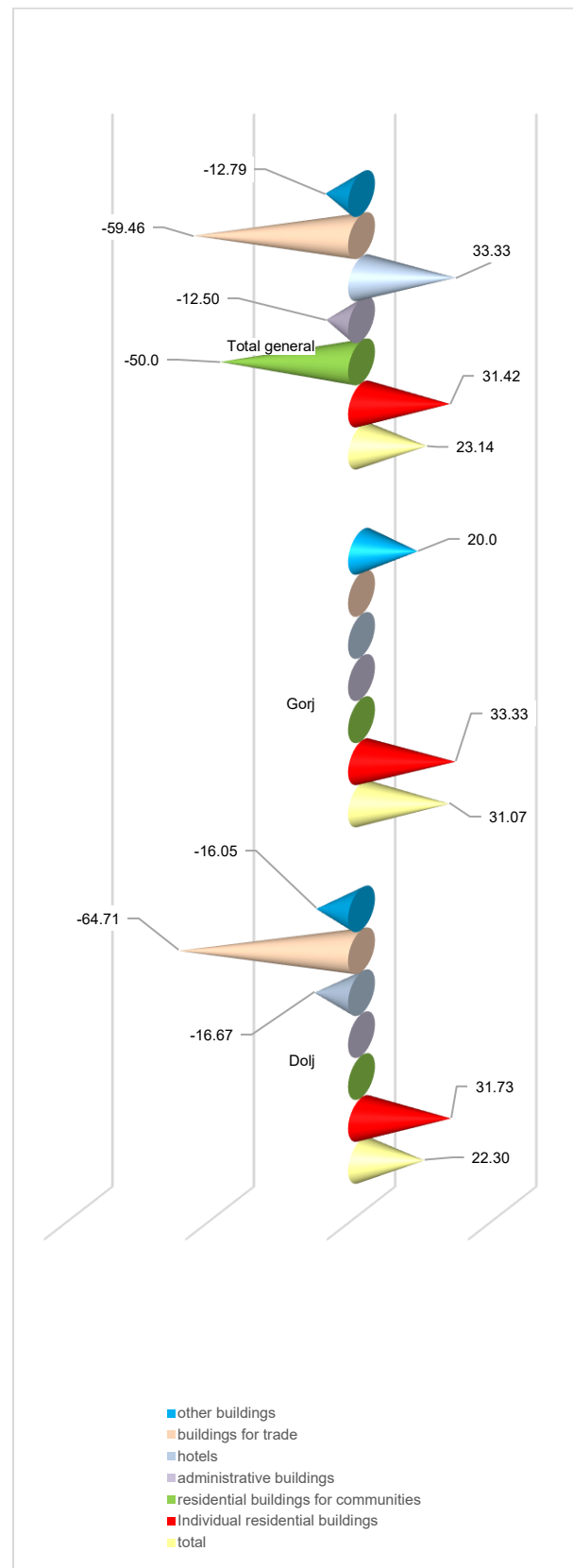


Fig. 3. Building permits, Comparative situation 2021vs2017 (±% - processed after: [www.insse.ro](http://www.insse.ro))

Regarding the number of building permits, the increase in their total number can be appreciated as beneficial, noting the much more pronounced trends specific to the rural environment compared to the urban one (difference of about 43% between the two upward trends).

It should be noted, however, that the pandemic period and the changes in the socio-economic environment have affected the specific situations of residential buildings for communities, administrative buildings, buildings intended for commercial activities and other buildings.

In conclusion, the increase in the number of dwellings may cause less beneficial consequences on protected natural areas, but adequate urban planning can reduce this negative impact.

It is necessary to have a state of balance between the phenomenon of urban development and the actions of conservation of natural sites, by implementing the concept of sustainable development.

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