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## INFRASTRUCTURE – VECTOR OF SUSTAINABLE DEVELOPMENT IN THE RURAL AREA OF THE NORD-EST REGION

### ABSTRACT

In the process of economic development, infrastructure has an essential role for at least the following reasons. A developed infrastructure contributes to attract investment, which impacts any local economy. The development of economic activities allows the creation of new jobs and contributes to the improvement of the quality of life in the respective areas. An adequate infrastructure also allows the development of trade as well as the narrowing of existing gaps between different communities. In this context, the present approach aims to carry out a diagnostic analysis of infrastructure at regional level, namely in the Nord-Est region, focusing on the infrastructure in the rural area of this region.

**Key words:** infrastructure, sustainable development, development regions.

**JEL Classification:** O1, O18, Q01.

### 1. INTRODUCTION

The important role played by infrastructure has always been the subject of multiple concerns of authorities regarding its development. Whether in road, educational, municipal, cultural, etc. infrastructure, permanent investments in its development are finally reflected in the level of development of a community, region or country, decisively contributing to the welfare of the respective areas.

The different degree of infrastructure development in a certain area compared to other areas should require particular attention from the authorities to identify important solutions and finance sources for this area, to reduce the gaps between areas, between urban and rural areas inclusively.

### 2. STATE OF KNOWLEDGE

Specialised studies show that infrastructure is one of the factors that influence economic growth and the degree of competitiveness of a country. The quality of

roads, railways, air transport and power supply are the most important indicators of infrastructure, and in the absence of infrastructure development the country cannot be competitive at international level (Paley, 2015).

First appearing in the late 1880s, the concept of infrastructure refers to a variety of systems and structures that require physical components, such as the power grid in a city, state, or country. While facilities, equipment, or similar physical assets such as bridges and roads are essential to an economy, infrastructure also enables citizens to participate in the social and economic community and provides for their needs such as food and water (Merriam-Webster Dictionary).

The same approach is found at the level of the United Nations Organization, according to which “*infrastructure is the set of basic structures that support everyday life and economic activity in a community*” (UN, 2015). Thus, infrastructure includes roads, public transport, power and natural gas supply networks, water supply and sanitation systems, electronic communication systems.

In Romania, infrastructure is also seen as an important factor of competitiveness alongside other relevant factors such as, for example, investments, the quality of the educational system, the qualification level of workforce, etc. (Ministry of Economy, 2022).

Lowering the analysis to the level of municipal infrastructure, it should be noted that according to the national legislative framework in force, this includes all public utility systems intended for the supply of public utility services (Law no. 51/2006).

In this context, a series of primary indicators specific to municipal infrastructure at regional level were analysed, in order to capture the current development stage of infrastructure in this region.

### 3. MATERIAL AND METHOD

From a methodological point of view, the present approach is based on data and information from the Tempo-Online database. The use of established statistical methods, such as comparisons, shares and structures is also envisaged. The main analysed indicators refer to:

- regional GDP;
- population;
- administrative-territorial organization;
- water infrastructure;
- sewerage infrastructure;
- natural gas infrastructure.

#### 4. RESULTS AND DISCUSSIONS

The Nord-Est region includes six counties (Bacău, Botoşani, Iaşi, Neamţ, Suceava and Vaslui), being the largest region in Romania in terms of population, accounting for about 18.3% of Romania's total population in 2024.

Among the six component counties, Iaşi is the largest county in the region in terms of the number of inhabitants (991.9 thousand inhabitants), followed by Suceava and Bacău. Practically, 62% of the region's population lives in the three previously mentioned counties.

*The rural population* represents 54.7% of the total population of the region, with percentages ranging from 47.9% (Vaslui) to 61.1% (Neamţ) (2024). The Nord-Est region accounts for 22.6% of total rural population in 2024. Iaşi county has 23.6% of the region's rural population, followed by Suceava (19.9%) and Bacău (17.4%).

In terms of *administrative organisation*, in 2023, the Nord-Est region had 29 cities, 17 municipalities, 506 communes and 2414 villages, which places it on the 5<sup>th</sup> place in terms of the number of cities, on the 2<sup>nd</sup> place respectively in terms of the number of communes. Among the component counties, Suceava county ranks first in terms of the number of cities and municipalities (Table 1).

Table 1

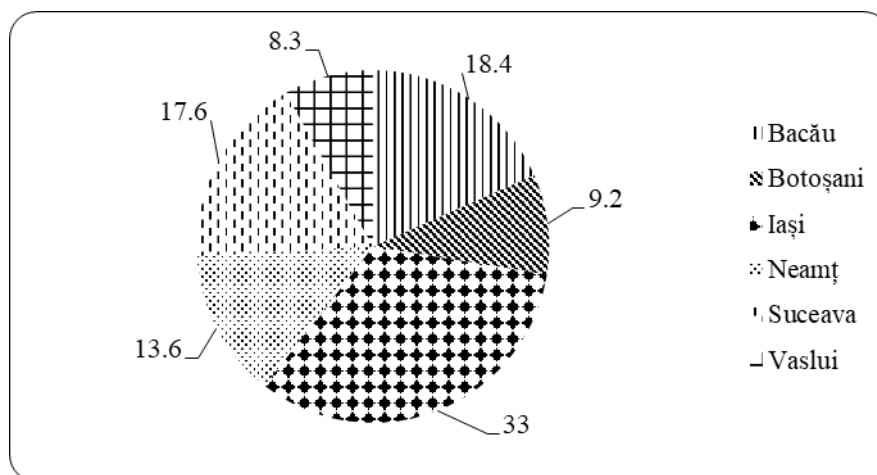
The administrative organisation of the Nord-Est region in 2023

	Cities		Communes	
	Number	% of total region	Number	% of total region
Bacău	5	17.2	85	16.8
Botoşani	5	17.2	71	14.0
Iaşi	3	10.3	93	18.4
Neamţ	3	10.3	78	15.4
Suceava	11	37.9	98	19.4
Vaslui	2	6.9	81	16.0

Source: Tempo-Online database, NIS, 2024.

As an aggregate economic indicator, in the year 2021, the *GDP* of the Nord-Est region was 125.4 billion RON, representing 10.5% of total GDP of the country. Thus, the Nord-Est region ranks 5<sup>th</sup> in the 8 development regions, with 33% of regional GDP in Iaşi county, while the lowest level was found in Vaslui county (8.3%) (Figure 1).

In 2023, the Nord-Est region totalled 11.6 thousand km of *drinking water supply network*, which represented 12.2% of the total length of the drinking water supply network in Romania. Iaşi county has the largest drinking water supply network (3.2 thousand km – 27.8% of total region), Botoşani ranks last, with only 1.2 thousand km (10.3% of total region).



Source: Calculations based on Tempo-Online data, NIS, 2024.

Figure 1. GDP structure by counties (% of total Nord-Est region).

In the year 2023, out of the 403 localities with drinking water supply network in Iași county, 82 localities were connected to the drinking water supply network, while in the rural area, in the same county, 77 localities were connected to the drinking water supply network (21.4% of total region) (Table 2).

Table 2

The number of localities with drinking water supply network in the region in 2023

	Total		Rural	
	Number of localities	% in total national/regional	Number of localities	% in total national/regional
Nord-Est	403	15.0	359	15.1
Bacău	78	19.4	70	19.5
Botoșani	44	10.9	37	10.3
Iași	82	20.3	77	21.4
Neamț	61	15.1	56	15.6
Suceava	68	16.9	54	15.0
Vaslui	70	17.4	65	18.1

Source: Calculations based on Tempo-Online data, NIS, 2024.

In the same reference year (2023), the Nord-Est region had 5.9 thousand km of *sewerage network*, which represented 12.3% of the total length of the sewerage network in Romania. In the rural area of the region, the sewerage network totalled 3.2 thousand km, representing 13.8% of the total length of the sewerage network in the Romanian rural area.

Like in the case of the drinking water supply network, Iași county has the largest sewerage network both in total and in the rural area, while Botoșani county lies at the opposite pole.

In 2023, in the Nord-Est region, 256 localities were connected to the sewerage network, representing 16.3% of total national. In the rural area, only 212 localities were connected to the sewerage network, accounting for 16.9% of total rural area in Romania.

In 2023, Suceava county ranked first at regional level, with the largest number of localities connected to the sewerage network, while in the rural area, Iași county ranked first, with 50 rural localities (23.6% of the total rural area of the region). The lowest degree of connection to the sewerage network can be found in Botoșani county, where only seven localities had such an infrastructure in 2023 (Table 3).

Table 3

The number of localities connected to the sewerage network in the region in 2023

	Total		Rural	
	Number of localities	% in total national/regional	Number of localities	% in total national/regional
Nord-Est	256	16.3	212	16.9
Bacău	56	21.9	48	22.6
Botoșani	14	5.5	7	3.3
Iași	55	21.5	50	23.6
Neamț	41	16.0	36	17.0
Suceava	62	24.2	48	22.6
Vaslui	28	10.9	23	10.8

Source: Calculations based on Tempo-Online data, NIS, 2024.

Regarding the *natural gas supply network*, it should be noted that, in 2023, the network totalled 6.6 thousand km in the entire region (13.4% of the total length of natural gas supply network in Romania). In the rural area of the region, the length of natural gas distribution network was 3.2 thousand km, representing 13.8% of the total length of the natural gas supply network in the Romanian rural area. At local level, Iași county has the largest natural gas distribution network both in total and in the rural area, while Botoșani county lies at the opposite pole.

However, the degree of connection of localities to the natural gas supply network is very low. Only 128 localities in the Nord-Est region are connected to the natural gas supply network (12.8% of national total). In the rural area, only 94 localities in the region have a natural gas supply network (12.6% of total Romanian rural area), with Iași county ranking first, with 25 rural localities connected to this type of infrastructure (Table 4).

Table 4

The number of localities connected to the natural gas supply network in the region in 2023

	Total		Rural	
	Number of localities	% in total national/regional	Number of localities	% in total national/regional
Nord-Est	128	12.8	94	12.6
Bacău	32	25.0	24	25.5
Botoșani	9	7.0	5	5.3
Iași	30	23.4	25	26.6
Neamț	27	21.1	22	23.4
Suceava	14	10.9	6	6.4
Vaslui	16	12.5	12	12.8

Source: Calculations based on Tempo-Online data, NIS, 2024.

## 5. CONCLUSIONS

From the analysis of the available information, the following relevant conclusions can be drawn:

- At the level of the Nord-Est region, there is a noticeable tendency to improve the infrastructure in the region;
- The infrastructure in the rural area is developing, but there are still significant gaps compared to the urban area;
- The number of localities connected to essential utility networks is reduced in rural areas compared to the total number of localities;
- There are significant gaps between the component counties of the region both in total and in the rural area in particular;
- The degree of infrastructure development is also reflected in the economic performance, the Nord-Est region being placed in the second half of the ranking in terms of GDP obtained in 2021.

In the context of the above, we believe that sustained investments are still needed for infrastructure development, given the demographic and economic potential of the region.

## REFERENCES

1. Paley, T., 2015. *Assessing the Impact of Infrastructure on Economic Growth and Global Competitiveness*. Available at: <https://www.sciencedirect.com/science/article/pii/S2212567115003226>.
2. Merriam Webster, *Infrastructure: A New Word from Old Roots*. Available at: <https://www.merriam-webster.com/wordplay/infrastructure-history-definition>.
3. Ministry of Economy, 2022. *National Strategy for Competitiveness 2021–2027*.
4. \*\*\* Law 51/2006 on community services of public utilities, republished.
5. National Institute of Statistics, 2024. *Tempo-Online database*, Bucharest.
6. United Nations, 2015. *Build resilient infrastructure, promote sustainable industrialization and foster innovation*. Available at: <https://www.un.org/sustainabledevelopment/infrastructure-industrialization/>.